

STATE OF IOWA
1970

**IOWA
DEPARTMENTAL
RULES**

JANUARY
1970
SUPPLEMENT

Containing

The permanent rules and regulations of general application promulgated
by the state departments from July 1, 1969 to January 1, 1970



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STATE OF IOWA
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NOTICE

The statutes provide that the Code Editor may publish cumulative, semi-annual supplements to the Iowa Departmental Rules. Inquiry should be made each six months of the Superintendent of Printing for distribution of these supplements.

PREFACE

This volume is published in compliance with section 14.3(7) of the Code. The rules of the various boards and departments are arranged in alphabetical order, using the names of the departments in general use.

Not all of the rules and regulations promulgated by the state departments have been included. The Act specifies "permanent" rules of "general application." Where rules have been omitted by the editor there is a notation indicating where such rules may be obtained.

January 1970

THE EDITOR.

PUBLICATION OF DEPARTMENTAL RULES

Section 14.3 of the Code, subsection 7, requires the Code Editor to:

"Prepare the manuscript copy, and cause to be printed by the state superintendent of printing in each year in which a Code is published, a volume which shall contain the permanent rules and regulations of general application, promulgated by each state board, commission, bureau, division or department, other than a court, having state-wide jurisdiction and authority to make such rules. The Code Editor may omit from said volume all rules and regulations applying to professional and regulatory examining and licensing provisions and any rules and regulations of limited application. The Code Editor may make reference in the volume as to where said omitted rules and regulations may be procured.

"This volume shall be known as the Iowa departmental rules and any rule printed therein may be cited as -----I.D.R.----- giving the year of publication and the page where the particular rule, by number, may be found.

"The Code Editor may provide cumulative, semiannual supplements for insertion in the latest published volume and a place shall be provided in the binding of such volume for insertion of such supplements."

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IOWA DEPARTMENTAL RULES JANUARY 1970

AGRICULTURE DEPARTMENT

Pursuant to the authority of Section 215.18, 1966 Code, permanent rule 14.33(215) appearing in the January 1967 Supplement and as amended in the January 1968 Supplement and the January 1969 Supplement is amended by striking from line eight (8) the words and figures "August 31, 1968" and inserting in

lieu thereof the words and figures "August 31, 1969".

[Filed September 10, 1969]

This rule is intended to implement Chapter 215, 1966 Code.

[Effective September 10, 1969]

AGRICULTURE DEPARTMENT

(continued)

Pursuant to the authority of Chapter 151, Section 3, Acts of the first regular session of the 63rd General Assembly, the following rules are hereby promulgated.

Chapter 14 of the rules of the department of agriculture is amended by adding the following new rules.

[Filed September 22, 1969]

MOISTURE-TESTING DEVICES

14.41(63rd GA, Ch151) All moisture-testing machines will be tested against a testing machine which will be furnished by the department and all moisture-testing machines will be inspected to determine whether they are in proper operational condition and supplied with the proper accessories.

14.42(63rd GA, Ch151) Moisture testers may be rejected for any of the following reasons:

1. The moisture-testing device tested is found to be out of tolerance with the

testing machine used by the department by one of the inspectors so assigned by more than one-half of one percent on grain under twenty percent moisture content.

2. The person does not have available the latest charts for type of machine being used.

3. The person does not have available the proper scale or scales, and thermometers for use with the type of machine being used.

4. The moisture-testing device is not free from excessive dirt, debris, cracked glass, or is not kept in good operational conditions at all times.

This rule is intended to implement Chapter 151, Acts of the First Regular Session of the Sixty-third General Assembly.

[Effective September 22, 1969]

AGRICULTURE DEPARTMENT

(continued)

Pursuant to authority of Section 199.11(2), Code 1966, rule 8.1(199) appearing in 1966 IDR, page 31 is hereby amended.

[Filed November 13, 1969]

AGRICULTURAL SEEDS

Strike from line twelve (12) the words "Brome, field-Bromus arvensis L.".

This rule is intended to implement Chapter 199 of the Code.

[Effective November 13, 1969]

AUDITOR OF STATE

Pursuant to the authority of Sections 534.19 of the Code, as amended by Senate File 140, Acts of the 63rd General Assembly, the following rules are adopted.

[Filed August 12, 1969]

SAVINGS AND LOAN DIVISION

CHAPTER 4

4.1(534) Mutual deposit association.

4.1(1) *General approval.* A state chartered association may elect to operate in a manner similar to federally chartered savings and loan associations as a "mutual deposit" association or institution. Such an election shall enable such institution or association to avail itself of the various terminology and powers authorized for "Mutual deposit" savings associations or institutions as authorized by federal law and limited by rules and regulations of the Federal Home Loan Bank System or the Federal Savings and Loan Insurance Corporation from time to time, and as implemented and approved by the rules of the supervisor of savings and loan associations.

4.1(2) *Procedure to elect.* In order to elect to become such a "mutual deposit association or institution", a state chartered association shall by action of its members at a regular annual meeting or a specially called meeting for that purpose amend its articles of incorporation so as to convert to a mutual deposit type institution or association by adopting Articles of Incorporation which are substantially similar to those which are attached hereto as addendum "A" and by this reference made a part hereof, and especially which shall contain the provisions of Articles 5, 7, 17, 18, 20, 21, 22 and 23 of said Model Articles of Incorporation. The associations shall further obtain the formal approval of the supervisor and the executive council of the state of Iowa.

4.1(3) Such associations as elect to become mutual deposit type associations or institutions shall also continue to have the rights and powers and be generally regulated and limited by the provisions of chapter 534, Code of Iowa as amended from time to time, as though they had not converted, excepting where federal regulations or rules of this office specifically adopted for "mutual deposit" type associations may limit same.

4.2(534) Fixed-rate, fixed-term savings deposit accounts.

4.2(1) *General approval.* A state-chartered association which in accordance with state law, may accept accounts bearing a definite rate of return for fixed periods of time (hereinafter referred to as "fixed-rate, fixed-term accounts") and whose board of directors has adopted a resolution providing for the issuance of such fixed-rate, fixed-term accounts may, subject to the limitations contained in subrule 4.2(2), and to the disclosure provisions contained in subrule 4.2(3), issue certificates evidencing such fixed-rate, fixed-term accounts in such form as the board of directors of the institution may determine.

4.2(2) *Limitations.* In issuing certificates evidencing fixed-rate, fixed-term accounts pursuant to the approval contained in subrule 4.2(1), no insured institution shall:

a. Provide for any forfeiture for breach of condition on the part of any holder, other than loss of interest, or partial loss thereof, for the term of the fixed-rate, fixed-term account or other specified time period;

b. Issue any negotiable form of certificate evidencing a fixed-rate, fixed-term account;

c. Deny any member the opportunity to invest at the same rate offered to any other member at that time on the same classification of fixed-rate, fixed-term account;

d. Accept any fixed-rate, fixed-term account for a term of less than 180 days or more than 5 years or in an amount less than \$1,000; provided, that any fixed-rate, fixed-term account may be renewed, at the option of the institution, for successive periods not exceeding five years for each renewal:

e. Provide for withdrawal from any fixed-rate, fixed-term account prior to the expiration of the fixed-term, except as provided in subrule 4.2(4).

f. Issue any fixed-rate, fixed-term account which is subject to redemption; or

g. Issue any form of certificate evidencing a fixed-rate, fixed-term account unless the institution has first (1) ob-

tained a written opinion by its legal counsel that such form of certificate complies with the requirements of applicable law and regulations and the institution's articles of incorporation and bylaws, which opinion shall be retained by the institution so long as it continues to issue certificates in such form, and (2) submitted a copy of such form of certificate, together with a copy of such legal opinion, to the Supervisor of Savings & Loan Association, office of the Auditor of State.

4.2(3) Disclosure. Each certificate evidencing a fixed-rate, fixed-term account accepted pursuant to the approval contained in subrule 4.2(1) shall include in its provisions and display in easily read type:

a. The rate of interest to be paid and the dates or frequency at which interest is payable;

b. The amount of the fixed-rate, fixed-term account;

c. The term of the fixed-rate, fixed-term account;

d. The penalty or penalties imposed for withdrawal prior to completion of the fixed term or renewal;

e. Any provisions relating to renewal at the conclusion of the fixed term;

f. Any provisions relating to the interest to be paid after the conclusion of a fixed term or renewal; and

g. A provision converting the fixed-rate, fixed-term account at the conclusion of a fixed term or renewal to the status of an account accepted for an indefinite period of time.

4.2(4) Withdrawal prior to expiration of term. A certificate issued by an insured institution may provide that, in an emergency where it is necessary to prevent great hardship to the holder of a fixed-rate, fixed-term account, the institution may pay, prior to the expiration of the term, such fixed-rate, fixed-term account or the portion thereof necessary to meet such emergency; provided, that before such payment may be made, the holder must sign an application describing fully the circumstances constituting the emergency which is deemed to justify the payment of the withdrawal, which application shall be (1) approved by an officer

of the institution who shall certify that, to the best of his knowledge and belief, the statements in such application are true and (2) retained by the institution for a period of not less than two years; and that, in the event of emergency withdrawal as provided in this paragraph, the holder shall forfeit accrued and unpaid interest for a period of not less than three months on the amount withdrawn if an amount equal to the amount withdrawn has been on deposit three months or more, and the holder shall forfeit all accrued and unpaid interest on the amount withdrawn if an amount equal to the amount withdrawn has been on deposit less than three months. In the case of emergency withdrawal of only a portion of any such fixed-rate, fixed-term account, the certificate evidencing such fixed-rate, fixed-term account shall be canceled, and, if the minimum balance requirements of this section continue to be met, a new certificate shall be issued for the remaining portion of the fixed-rate, fixed-term account with the same term, rate, and dates as the original fixed-rate, fixed-term account.

4.3(534) Distribution of earnings at variable rates.

4.3(1) General. The board of directors of a state-chartered association which has adopted the approved "Articles of Incorporation", after having determined the rate at which earnings will be distributed on its savings accounts for the dividend period, hereinafter referred to as the regular rate may provide for the distribution of earnings for that dividend period (1) on savings accounts which are withdrawn during the dividend period, and on which dividends are paid to the date of withdrawal, at a rate lower than the regular rate and (2) on savings accounts which meet eligibility requirements fixed by the board of directors pursuant to subrule 4.3(2) and such additional requirements as the board of directors may impose, at a rate or rates higher than the regular rate. However, such authority will not be available until specifically approved in writing by the supervisor.

4.3(2) Eligibility requirements. The board of directors may, by resolution, provide for the distribution of earnings at a rate or rates higher than the regular rate only on savings accounts which meet the minimum requirements fixed by the board of directors pursuant to paragraphs

"a", "b", "c" and "d" of this subrule and such additional requirements as the board of directors may impose.

a. Accounts evidenced by account books other than notice-account books. A savings account which is evidenced by an account book other than a notice-account book and is maintained at not less than \$1,000 for a continuous period of not less than twelve months may receive earnings at a rate higher than the "regular rate", but not in excess of the applicable maximum rate of return as prescribed by regulations of the Federal Savings and Loan Insurance Corporation.

b. Accounts evidenced by notice-account books. A savings account which is evidenced by a notice-account book containing a requirement that the holder of the account give the association written notice of at least ninety days prior to making each withdrawal from such account, except as otherwise provided in this paragraph may receive earnings at a rate higher than the regular rate, but not in excess of the applicable rate of return as prescribed by regulations of the Federal Savings and Loan Insurance Corporation. No association shall pay any withdrawal from an account evidenced by a notice-account book until the required notice has been given and the required notice period thereafter has expired, except as otherwise provided in this paragraph. The association may provide that such notice prior to withdrawal will not be required at the end of a dividend period or within ten days thereafter in connection with the withdrawal of funds which have remained in such account for at least ninety days. In an emergency where it is necessary to prevent great hardship to the holder of such an account, an association may pay without such notice such account or the portion thereof necessary to meet such emergency: Provided, that before making such payment, the holder of such account shall sign an application describing fully the circumstances constituting the emergency which is deemed to justify the payment of the withdrawal, which application shall be approved by an officer of the association who shall certify that, to the best of his knowledge and belief, the statements in such application are true. Where an emergency withdrawal of such an account is paid, the holder of such account shall not be entitled to receive accrued and unpaid earnings for the period of time the funds

remained in the association since the last date as of which the association regularly distributed earnings on its savings accounts.

c. Accounts evidenced by separate certificates. A savings account which is evidenced by a separate certificate may receive earnings on the amount of such certificate at a rate higher than the "regular rate", but not in excess of the applicable maximum rate of return as prescribed by regulations of the Federal Savings and Loan Insurance Corporation, if such account is maintained at not less than \$1,000 for a continuous period of not less than six months nor more than twelve months, commencing on the date of such certificate. If such savings account is evidenced by more than one separate certificate, the provisions of this paragraph shall be as fully applicable to each such certificate as if each such certificate evidenced a separate savings account.

d. Split rates.

(1) *General.* For any dividend period for which the regular rate is less than the applicable maximum rate of return as prescribed by the Federal Savings and Loan Insurance Corporation, the board of directors may, by resolution determine to distribute earnings at a rate higher than the "regular rate" on the balance of any account in excess of such minimum balance as shall be fixed by the board of directors, which minimum balance shall not be less than \$200.00 and at a rate or rates in excess of such higher rate on such higher balance or balances as the board of directors may prescribe, but no rate so determined shall be in excess of the applicable maximum rate as prescribed by the Federal Savings and Loan Insurance Corporation.

(2) *Account books and certificates.* Each certificate, whether printed in an account book or as a separate certificate evidencing an account issued pursuant to this paragraph shall contain the following prescribed language: "Earnings are distributable at such rate or rates as determined by the board of directors".

These rules are intended to implement Senate File 140, Acts of the 63rd General Assembly.

[Effective August 12, 1969]

ADDENDUM A

MODEL ARTICLE OF INCORPORATION
FOR
_____ SAVINGS AND LOAN ASSOCIATION
(A Mutual Deposit Institution)

SECTION 1. Name and Place of Business. The name of this association shall be _____ Savings and Loan Association, a mutual deposit institution, and its principal place of business shall be in the City of _____ in the County of _____ and the State of Iowa. Any security instruments to which the association is a party shall identify it as a "mutual deposit institution".

SECTION 2. Seal. This association may have a seal consisting of two concentric circles with the words "_____ Savings and Loan Association, a mutual deposit institution" between such circles and the word "Incorporated" in the center, and, under it, the date of Incorporation. An impression of such seal if used by the association shall be necessary on all instruments conveying title to real estate, but shall not be necessary on any other instrument.

SECTION 3. Duration. This association shall continue and exist, perpetually, unless sooner dissolved in the manner authorized and provided for by the laws of Iowa.

SECTION 4. Objects. This association is formed to operate and do business as a savings and loan association, a mutual deposit institution. Its objects and purposes are to promote and encourage thrift and home ownership by providing a convenient and safe cooperative method for savings and accumulating money and investing such money in loans to its members on the security of first mortgages and to do such other business as shall be authorized by the laws of Iowa.

MEMBERSHIP

SECTION 5. Membership. Any person, firm, corporation, and other legal entity may become a member of this association: (1) By owning a savings account or a savings deposit account. (2) By becoming a borrower on a mortgage loan or assuming such a loan. (3) By purchasing on contract from the association or, (4) By any other method authorized by Chapter 534, Code of Iowa.

MEMBERS' MEETINGS — QUORUM — VOTING RIGHTS

SECTION 6. Members' Voting Rights. At all members' meetings, each member, including borrowing members, shall have one vote in person or by proxy for each one hundred dollars paid in and credited on his savings deposit account or savings deposits. Such voting shall be as prescribed by Chapter 534, Code of Iowa.

SECTION 7. Fines, Fees and Penalties. Except for borrowers, the institution shall not directly or indirectly charge any membership, admission, re-purchase, withdrawal, or any fee or sum of money for the privilege of becoming, remaining or ceasing to be a holder of a savings account or deposit.

SECTION 8. Members' Meetings — Regular. A regular annual meeting of the members shall be held on the _____ Wednesday in January of each year at the office of the association beginning with the hour of _____ .M. Notice of such meeting shall be given as prescribed by Chapter 534, Code of Iowa.

SECTION 9. Special Meeting. Special meetings of members may be held at any time on call of the President or by written call signed by a majority of the directors. Notice of any special meeting shall be published at least once in a newspaper of general circulation published in the city of the principal

place of business of this association not less than ten days and not more than twenty days before the date of such special meeting. Such notice must in general terms state what is to be considered and acted on at such special meeting.

SECTION 10. Quorum—Rules of Order. Not less than ten members holding or representing not less than \$_____ in a savings account or in a savings deposit account in person or by proxy shall constitute a quorum for transaction of business at any members' meeting. Roberts' Rules of Order shall govern in all such meetings.

GENERAL MANAGEMENT — DIRECTORS — OFFICERS

SECTION 11. Directors — How Elected -- Quorum — Qualification. The business of the association shall be managed by a board of directors of not less than five or more than fifteen as determined and elected by ballot from among the members by a plurality of the votes of the members present in person or by proxy. If authorized by vote of the members, the directors may elect all directors. At all times at least two-thirds of the directors shall be bona fide residents of this state.

In order to qualify as a director, a member of this association must hold a savings account or a savings deposit account in the amount of at least two hundred dollars; provided that, if the assets of the association exceed five hundred thousand dollars, such member must hold a savings deposit account in the amount of at least five hundred dollars; and provided further, if the assets exceed two and one-half million dollars, his savings account or savings deposits must be at least one thousand dollars. A director shall automatically cease to be a director when he ceases to be a member, or when the net equity above savings deposit account loans of the member aggregates less than the minimum required to be eligible for election as a director, provided no action of the board of directors shall be invalidated through the participation of such director in such action.

At the first annual meeting, the directors shall by majority vote be divided into three classes of as nearly equal numbers as possible. The term of office of directors of the first class shall expire at the annual meeting next after the first election; of the second class, one year thereafter; and of the third class, two years thereafter; and at each annual election thereafter directors shall be chosen for a full term of three years to succeed those whose terms expire.

The number of directors within the limits hereinabove specified may be subsequently increased only by vote of the members.

If the members fail to elect a director to fill each vacancy created by any such increase, the directors may fill such vacancy by electing a director to serve until the next annual meeting of the members, at which time a director shall be elected to fill the vacancy for the unexpired term for the class of director in which such vacancy exists.

Whenever under the provisions hereof the number of directors is changed and vacancies caused by such change are filled, the directors so elected shall be classified in accordance with the provisions hereof, so that each of the three classes shall always contain numbers as nearly equal as possible.

Any vacancy among directors, not so filled by the members, may be filled by a majority vote of the remaining directors, though less than a quorum, by electing a director to serve until the next annual meeting of the members, at which time a director shall be elected to fill the vacancy for the unexpired term for the class of director in which such vacancy exists. In event of a vacancy on the board of directors from any cause, the remaining directors shall have full power and authority to continue direction of the association until such vacancy is filled.

SECTION 12. Executive Committee. The Board of Directors may elect from their number an Executive Committee consisting of three or more directors to which it may refer any and all matters requiring consideration and action

between Board meetings. The Board of Directors may also elect such other committees as it may deem necessary.

SECTION 13. Officers — How Elected — General Duties. The Board of Directors shall immediately after each annual members' meeting assemble and elect, either from or outside of its own membership, a President, one or more Vice Presidents, a Secretary, Counsel, and such additional officers as it shall deem necessary. The Board of Directors shall also have power to fill vacancies in such offices. All salaries, including compensation for directors, shall be fixed by the Board of Directors. One person may hold any two offices. The officers shall be responsible for the operation and management of the association under the general management and direction of the Board of Directors, and within the provisions of these articles of incorporation, the bylaws adopted by the Board consistent herewith and the statutes of the State of Iowa. Officers shall be elected for terms not exceeding one year at a time or for such shorter terms as the Board of Directors may deem advisable.

SECTION 14. Present Directors: The following shall constitute its Board of Directors for the term indicated:

Name	Address	Term Expires
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SECTION 15. Present Officers. Until the next annual members' meeting, the following shall be the officers of this association:

President	of
Vice President	of
Secretary	of
Treasurer	of
Counsel	of

SECTION 16. Execution of Conveyances and Releases. The President or the Vice President, together with the Secretary or the Assistant Secretary, if any, or such other officers as the Board of Directors may approve, shall have authority to execute any instrument affecting the title to real estate and the seal of the association shall be impressed upon such instrument, if used by the association. Either the President, Secretary or the Vice President alone or such other officer as the Board shall expressly authorize, shall have authority to release mortgages when they are settled in full and may make such releases on the margin of the record without seal.

SAVINGS DEPOSITS

SECTION 17. Savings Deposits. The institution shall not accept savings accounts other than savings deposits but savings accounts existing in this institution on _____ when it became a deposit institution shall remain savings accounts unless and until they are exchanged for savings deposits. Any right outstanding at the time when this institution became a deposit institution to receive a savings account from the institution in exchange for a previously issued savings account shall thereafter be a right to receive, at the option of the holder of such right, either a savings account or a corresponding savings deposit.

SECTION 18. Priority. In the event of voluntary or involuntary liquidation, dissolution, or winding up of this institution or in the event of any other situation in which the priority of such savings deposits is in controversy, all savings deposits shall, to the extent of their withdrawal value, have the same priority as the claims of general creditors of the institution not having priority (other than any priority arising or resulting from consensual subordination) over other general creditors of this institution, and, in addition, savings deposits shall have the same right to share in the remaining assets of the institution as if they were savings accounts. If, in any such event, there are outstanding in this institution any one or more insured accounts which are not savings deposits, such insured accounts (regardless of whether there are or are not outstanding in this institution any one or more such savings deposits) shall, to the extent of their withdrawal value, have the same priority as if they

were savings deposits. As used in this section, the term insured account has the same meaning as defined in the rules and regulations for insurance of accounts of the Federal Savings and Loan Insurance Corporation.

SECTION 19. Reserve for Contingencies. As of June thirtieth and December thirty-first of each year the Board of Directors shall transfer and credit to a general reserve account an amount equivalent to not less than two per cent of the net earnings of the association for the preceding six months, called the "accounting period", such transfers to be made at the end of each six months' accounting period, until such general reserve account is equal to at least five per cent of the total amount of savings account or savings deposit account. If at any time thereafter such general reserve account shall on account of losses be reduced to less than five per cent of the amount of savings accounts or savings deposit accounts, such transfers and credits thereto shall be resumed and continued until such reserve is again equal to at least five per cent of the total amount of savings accounts or savings deposit accounts. The reserve account so established shall at all times be maintained and used for the sole purpose of absorbing losses incurred by the association and for no other purposes. The association may establish such other and additional special reserves as may be ordered by its Board of Directors.

SECTION 20. Types of Savings Deposits. Savings accounts or savings deposit accounts may be opened and held solely and absolutely in his own right by, or in trust for any person, including an adult or minor individual, male or female, single or married, a partnership, association, fiduciary corporation, or political subdivision or public or government unit or any other corporation or legal entity. Savings accounts or savings deposit accounts shall be represented only by the account of each savings account or savings deposit account holder on the books of the association, and shall be transferable only by the transferee and upon acceptance of the transferee as a member upon terms approved by the board of directors. The association may treat the holder of record of a savings account or savings deposit account as the owner thereof for all purposes without being affected by any notice to the contrary unless the association has acknowledged in writing the notice of a pledge of such savings account or savings deposit account.

An account book may be issued to each savings account or savings deposit account holder on the books of the association and such account book shall, if issued, contain a form of membership certificate to indicate the withdrawal value of the savings share account. A separate certificate for a savings account or a savings deposit account may be issued in lieu of an account book in form to be approved by the supervisor.

The following types of savings deposits may be accepted in the discretion of the board of directors:

1. Full-Paid Savings Deposits, when the full value thereof is paid at the time of issuance.
2. Installment Savings Deposits, on which payments shall be made in the amounts and at the times fixed by the board of directors.
3. Optional Savings Deposits, on which, after the first payment has been made, the account holder may pay any amount at any time.
4. Short-Term Club Savings Deposits, on which payments may be made at the option of the account holder to be withdrawn within _____ months. (Not to exceed 24 months.)
5. Bonus Savings Deposits, which are accepted pursuant to a bonus plan approved by both the Supervisor of Savings and Loan Associations and the Federal Savings and Loan Insurance Corporation if the savings and loan is insured.
6. Single Payment Savings Deposits, when the full face value thereof is paid at the time of acceptance and which are maintained in such amount and for such periods of time as may be approved by both the Supervisor of Savings

and Loan Associations and the Federal Savings and Loan Insurance Corporation, if the savings and loan is insured.

7. Any other type of savings deposit, the acceptance of which has been approved by both the State Supervisor and the Federal Savings and Loan Insurance Corporation.

SECTION 21. Distribution of Earnings. Regular earnings on all types of savings deposits and savings accounts shall be declared semiannually as of the last business day of _____ and as of the last business day of _____ by the board of directors out of the surplus of the association. Regular earnings may also be declared by the board of directors as of other dates, but not more frequently than quarterly, out of the surplus. Earnings may be declared payable within three business days of the end of a distribution period. For the purpose of calculating earnings, any withdrawal, either total or partial, made during the last 3 business days of a distribution period may be considered as having been made as of the last business day of the period.

The association shall not be required to credit earnings to savings deposits or savings accounts with a balance of less than _____ dollars (\$_____) * or to savings deposits or savings accounts issued under a Christmas club, vacation club, or other similar plan whereby they shall automatically be listed for withdrawal no later than _____ months (insert figure not to exceed 24 months) after the date of issuance. The board of directors may fix a lesser amount than such minimum with respect to the distribution of earnings on savings deposits and savings accounts established in connection with a program offered to children for the encouragement of thrift.

*Note: The dollar amount to be inserted may not exceed fifty dollars (\$50.00).

The date of investment shall be the date of the actual receipt by the institution of a payment on a savings deposit or savings account except that the board of directors may fix a date, which shall not be later than the 20th day of the month, for determining the date of investment: Provided, however, That the board of directors may permit investments of \$100 or more to receive earnings from the date of investment, in any event. Payments, affected by such determination date, received by the institution on or before such determination date, shall receive earnings as if invested on the first of the month during which such payment was made. Payments, affected by such determination date, received subsequent to such determination date, shall receive earnings as if invested on the first of the month next succeeding the month during which such payment was made.

The board of directors may classify savings deposits and savings accounts as to amount and term, and may determine to pay different rates of earnings with respect to savings deposits and savings accounts in different classes. All accounts of the same type and class shall be paid the same rate of earnings.

SECTION 22. Withdrawal. Any member may withdraw his unpledged savings deposit or savings account, in whole or in part, in accordance with 534.12(2) of the Code of Iowa, 1966, as now or hereafter amended. The institution may require at least 30 days' written notice of intention to withdraw.

SECTION 23. Association's Redemption Rights. At any time funds are on hand for the purpose, the board of directors may determine to redeem by lot or otherwise, in its discretion, all or part of the institution's savings deposits and savings accounts on an earnings date by giving 30 days' notice by registered or certified mail to each affected holder. Upon receipt of notice of redemption, the savings deposit book, certificate, or other evidence of the account shall then be surrendered for cancellation and payment. If on or before the redemption date the funds necessary for redemption have been set aside so as to be and continue to be available therefore, earnings on savings deposits and savings accounts called for redemption shall cease to accrue from and after the earnings date specified as the redemption date.

SECTION 24. Insurance of Accounts. If authorized by the Board of Directors this association may insure its savings accounts or savings deposits, with the

Federal Savings and Loan Insurance Corporation, provided, however, that after such insurance has become effective it shall not be discounted or terminated except upon a majority vote of the members at a meeting called for that purpose by written notice disclosing the intention to consider the termination of such insurance mailed to each member at his last address as recorded on the books of the association at least thirty days before such meeting. Upon termination of insurance, all members shall be notified in writing. In case such meeting votes to terminate the insurance the association shall within ten days thereafter mail to each of its insured members at his last known address as recorded on the books of the association a copy of its notice to the Insurance Corporation of action to terminate its insurance.

INVESTMENTS — POWERS — LOANS

SECTION 25. Investments. This association shall have power to invest in securities and real estate as follows: In securities without limit, in obligations of, or guaranteed as to principal and interest by, the United States or in this state; in stock of a federal home loan bank of which it is eligible to be a member, and in any obligation or consolidated obligation of any federal home loan bank or banks; in stock or obligations of the federal savings and loan insurance corporation; in stock or obligations of a national mortgage association or "Ginney Mae" or any successor or successors thereto; in demand, time or savings deposits with any bank or trust company the deposits of which are insured by the federal deposit insurance corporation; in stock or obligations of any corporation or agency of the United States or this state, or in deposits therewith to the extent that such corporation or agency assists in furthering or facilitating the association's purposes or powers; in savings accounts of any association operating under the provisions of Chapter 534 and of any federal savings and loan association; in bonds, notes, or other evidence of indebtedness which are general obligations of any city, town, village, county, school district, or other municipal or political subdivision of this state.

Also, in real estate purchased at sheriff's sale or at any other sale, public or private, judicial or otherwise, upon which the association has a lien or claim, legal or equitable; in real estate accepted by the association in satisfaction of any obligation; in real estate purchased for sale or improvement and sale, upon contracts, at the cost of land and improvements, when such contracts are executed concurrently with or prior to such purchase, such transactions to be subject to all the limitations herein provided with respect to real estate loans; in real estate acquired by the association in exchange for real estate owned by the association; in real estate acquired by the association in connection with salvaging the value of property owned by the association; an amount not exceeding the sum of its reserves and undivided profits; in the purchase and development of real estate for the purpose of producing income or for sale or for improvement thereof and the erection of buildings thereon for sale or rental purposes. Title to all real estate shall be taken and held in the name of the association and such title shall immediately be recorded in accordance with the law. The association shall also have authority to invest in any other investments now or hereafter authorized by law.

SECTION 26. General Powers. This association shall have the following general powers:

1. General corporate power. To sue and be sued, complain and defend in any court of law or equity; to purchase, acquire, hold, and convey real and personal estate consistent with its objects and powers; to mortgage, pledge, or lease any real or personal estate owned by the association and to authorize such pledgee to repledge same; to take property by gifts, devise or bequest; to have a corporate seal, which may be affixed by imprint, facsimile, or otherwise; to appoint officers, agents, and employees as its business shall require and allow them suitable compensation; to provide for life, health and casualty insurance for its officers and employees and to adopt and operate reasonable bonus plans and retirement benefits for such officers and employees to enter

into payroll savings plans; to adopt and amend bylaws; to insure its accounts or savings deposits with the federal savings and loan insurance corporation and qualify as a member of a federal home loan bank; to become a member of, deal with, or make contributions to any organization to the extent that such organization assists in furthering or facilitating the association's purposes or powers and to comply with conditions of membership; to accept savings, together with such other powers as are otherwise expressly provided for in Chapter 534, Code of Iowa or are otherwise authorized by law, now or hereafter as amended.

2. Loans on Security of savings accounts or savings deposits. To make loans on the sole security of savings accounts or savings deposits. No such loans shall exceed the withdrawal value of the accounts owned or otherwise pledged for or by the borrower. No such loan shall be made when the association has applications for withdrawal which have been on file more than sixty days and not been reached for payment.

3. Mortgage loans. To make first mortgage loans on real estate under the limitations and conditions imposed elsewhere in Chapter 534, Code of Iowa, now or as hereafter amended or as otherwise authorized by law.

4. Insured and guaranteed loans. To make any loan, secured or unsecured, which is insured or guaranteed in any manner and in any amount by the United States or any instrumentality thereof or by this state or any instrumentality thereof.

5. Dealing with successors in interest. In the case of loans made under subsections 2, 3 and 4 of this section, in the event the ownership of the real estate security or any part thereof becomes invested in a person other than the party or parties originally executing the security instruments, and provided there is not an agreement in writing to the contrary, an association may, without notice to such party or parties, deal with successor or successors in interest with reference to said mortgage and the debt thereby secured in the same manner as with such party or parties, and may forbear to sue or may extend time for payment of or otherwise modify the terms of the debt secured thereby, without discharging or in any way affecting the original liability of such party or parties thereunder or upon the debt thereby secured.

6. Property Improvement Loans. To make improvement loans to home owners and other property owners for maintenance, repair, modernization, improvements and equipment of their properties, with or without security provided that no such loan without security shall exceed the maximum lending amount, interest or term prescribed by law nor exceed the maximum percentage of assets limitation set by law.

7. Power to purchase and to lend upon loans. The power to make loans shall include (a) the power to purchase loans of any type that the association may make, (b) the power to make loans upon the security of loans of any type that the association may make, and (c) the power to sell any loans of the type the association is authorized to make. Loans under (a) and (c) may be outside regular lending area if restricted to loans insured or guaranteed partially by an instrumentality of the United States or by any insurer approved by the federal home loan bank or the supervisor.

8. Participation loans. This association may participate with other lenders in the origination or purchase of an interest in loans of any type that such an association may otherwise make, provided that the other participants are instrumentalities of or corporation owned wholly or in part by the United States or this state, or are associations or corporations insured by the federal savings and loan insurance corporations or the federal deposit insurance corporation or are life insurance companies with assets in excess of one hundred million dollars, such loans to be within or without the regular lending area of the association. Such loans shall comply with rules and regulations of accounts if this association is insured at the time.

9. Servicing loans. To service mortgages subject to such regulations and restrictions as may be prescribed by the supervisor, provided such mortgages originally are made by such association and subsequently sold. The maximum principal amount of mortgages thus serviced by the association at any one time shall not exceed twenty-five per cent of the amount of the savings accounts or deposits of the association.

10. Fiscal agent. This association which is a member of a federal home loan bank shall have power to act as fiscal agent of the United States and, when designated for the purpose by the secretary of the treasury, it shall perform under such regulations as he may prescribe all such reasonable duties as fiscal agent of the United States as he may require, and shall have power to act as agent for any United States government instrumentality. This association may also handle travelers checks and money orders.

11. Purchase of contracts. This association may buy and sell vendors' real estate contracts; provided, however, that all such contracts shall contain forfeiture provisions as provided for in Chapter six hundred fifty-six (656), Code of Iowa, and provided further that the requirements for loans as set forth in these Articles should be applicable to making and buying of such contracts, except that at the time of purchase of such vendors' contracts the association shall not purchase any such contract for more than ninety per cent of the value of the real estate therein described appraised as required by these Articles. The association shall not hereafter invest more than fifteen per cent of its assets in such vendors' contracts authorized by this subsection. Said fifteen per cent shall be considered as included within the forty per cent of assets lending power set out hereinafter.

12. Power to borrow. If and when this association is not a member of a federal home loan bank, it shall have power to borrow not more than an aggregate amount equal to one-fourth of its savings deposits on the date of borrowing. If and when this association is a member of a federal home loan bank, it shall have power to secure advances of not more than an aggregate amount equal to one-half of its savings deposits. Within such amount equal to one-half of its savings deposits, the association may borrow from sources other than such federal home loan bank an aggregate amount not in excess of ten per cent of its savings deposits. A subsequent reduction of savings liability shall not effect in any way outstanding obligations for borrowed money. All such loans and advances may be secured by property of the association.

13. Automatic authorization. This association may have the right to participate in any new or additional powers or activities now or hereafter granted to the association immediately upon the effective date of such additional authority.

SECTION 27. Loan Plans. Real estate loans may be made as authorized by Chapter 534, Code of Iowa, as amended.

SECTION 28. Contracts for Savings Programs.

1. School savings. The association shall have power to contract with the proper authorities of any public or nonpublic elementary or secondary school or other institution of higher learning, or any public or charitable institution caring for minors, for the participation and implementation by the association in any school or institutional thrift or savings plan, and it may accept savings accounts or savings deposits at such a school or institution either by its own collector or by any representative of the school or institution which becomes the agent of the association for such purpose.

2. Payroll savings plan. The association shall have power to contract with any corporation of any type for investment in the association by employees under a payroll savings plan.

SECTION 29. Transferred Savings Accounts or Savings Deposits Not to be Offset. A borrowing member shall not without permission of the Board of Directors be permitted to offset against his indebtedness to the association any

savings accounts or savings deposits in the association acquired directly or indirectly from other members.

SECTION 30. Power to Borrow. When authorized by the Board of Directors, this association shall have power to borrow from a Federal Home Loan Bank in amounts not in excess of fifty (50) per cent of the aggregate amounts paid in and credited on savings deposits not pledged as security for loans, or not in excess of ten (10) percent of such savings deposits from other banks. It may pledge its assets to secure advances from a Federal Home Loan Bank, or a banking institution.

SECTION 31. Limited Liability. The members of the association shall not be responsible for any losses which its savings deposits shall not be sufficient to satisfy, and savings deposits shall not be subject to assessment. The private property of members shall be exempt from liability for corporate debts and the provisions of this article shall not be changed during the existence of this association.

SECTION 32. Expenses — Limitations — How Paid. All expenses for management and conducting the affairs of this association shall be paid from the earnings of the association and not from capital paid in. Such expenses shall not in any one year exceed the limitations prescribed by law.

SECTION 33. General Powers. This association shall have power to do such other things as may be incidental to or reasonably necessary for accomplishing the objects and purposes for which it is organized.

SECTION 34. Bylaws. The Board of Directors shall have power to adopt, repeal, and amend bylaws which shall provide for the management and conduct of the business of this association within the provisions of the laws of Iowa, these articles of incorporation and all legal rules and regulations of the supervisor of savings and loan associations.

SECTION 35. Amendments. Any of these articles of incorporation, except the section holding the property of its members exempt from liability for the association debts, may be repealed, amended, altered or added to at any annual or special meeting of the members by a vote of two-thirds of the savings deposits represented at such meeting, subject to approval of the executive council of the State of Iowa.

In witness whereof, we have signed our name, this _____ day of _____, 19_____.

Name	Address
_____	_____
_____	_____
_____	_____

BANKING DEPARTMENT

Pursuant to authority of section 536.21 of the Code, rules appearing in July 1968 IDR Supplement, Chapter 1 at pages 9 to 14, inclusive, relating to Small Loan Division, are hereby amended by the addition of the following rule:

[Filed October 14, 1969]

1.8(536) Interest rate. Pursuant to the power granted to the state banking board under section 536.13(1)“b” and section 536.13(2) of the Code, and after giving notice and opportunity to be heard as prescribed by section 536.13(3), the state banking board in action taken at the regular board meeting held September 11, 1969 fixed the maximum interest that

may be charged beginning January 1, 1970 and until such time as a different rate is fixed by the board as three percent per month on any part of the unpaid principal balance of the loan not exceeding two hundred and fifty dollars and two percent per month on any part of the loan in excess of two hundred and fifty dollars, but not exceeding four hundred dollars, and one and one-half percent per month on any part of the unpaid principal balance in excess of four hundred dollars.

This rule is intended to implement section 536.13 of the Code.

[Effective January 1, 1970]

BANKING DEPARTMENT

(continued)

Pursuant to the authority granted in chapter 273, section 213, Acts of the First Regular Session of the Sixty-third General Assembly, the Superintendent of Banking has adopted the following departmental rules to replace all Department of Banking Departmental Rules in 1966 Iowa Departmental Rules, pages 55 through 63 [second column to "Small Loan Law Regulations"], which are hereby rescinded. Regulations adopted pursuant to Chapter 533 and Chapter 536 continue in effect.

[Filed December 9, 1969, without the approval of the Attorney General]

[References to section numerals are to the original Act]

STATE BANK DIVISION

Chapters 1 to 7, inclusive. RESERVED.

CHAPTER 8

GENERAL BANKING POWERS

8.1(Ch.273, 63GA) Deposits defined.

8.1(1) *A demand deposit* includes every deposit which is not a time deposit or savings deposit as defined in 8.1(2) and 8.1(3) respectively. Gross demand deposits for purposes of rule 8.7(Ch. 273, 63GA) shall consist of the sum of all such demand deposits. Net demand deposits shall consist of gross demand deposits less items in process of collection, payable immediately upon presentation to banks under a local clearing agreement.

8.1(2) *Time deposit*. Time deposit includes time certificate of deposit, time deposit open account, and multiple maturity time deposit as follows:

a. Time certificate of deposit. A deposit evidenced by a negotiable or non-negotiable instrument which provides on its face that the amount of the deposit is payable on a certain date, specified in the instrument, not less than thirty days after the date of the deposit; or at the expiration of specified period not less than thirty days after the date of the instrument; or upon written notice to be given not less than thirty days before the date of repayment.

b. Open account. A deposit, other than a time certificate of deposit, with respect to which there is in force a written contract with the customer that neither

the whole nor any part of such deposit may be withdrawn, by check or otherwise, prior to the date of maturity, which shall be not less than thirty days after the date of the deposit, or prior to the expiration of the period of notice which must be given by the customer in writing not less than thirty days in advance of withdrawals.

c. Multiple maturity. A time deposit that is payable at the customer's option on more than one date, whether on a specified date or at the expiration of a specified time after the date of deposit, after written notice of withdrawal, or with respect to which the underlying instrument or contract or any informal understanding or agreement provides for automatic renewal at maturity.

8.1(3) *Savings deposit*. A savings deposit consists of funds credited to the account of one or more individuals, or in which the beneficial interest is held by one or more individuals, or of a corporation, association, or other organization operated primarily for religious, philanthropic, charitable, educational, fraternal, or other similar purposes and not operated for profit, or in which the entire beneficial interest is held by one or more individuals or by such a corporation, association, or other organization, and with respect to which the customer is not required by the deposit contract but may at any time be required by the state bank to give not less than thirty days' notice in writing of an intended withdrawal before such withdrawal is made and which is not payable on a specified date or at the expiration of a specified time after the date of deposit.

8.2(Ch.273, 63GA) Maximum interest on time and savings deposit. The superintendent of banking hereby prescribes the following maximum rates of interest payable on time and savings deposits:

8.2(1) *Single maturity time deposits of \$100,000 or more*. The following schedule shall apply:

Maturity	Maximum percent per annum
30- 59 days	5½
60- 89 days	5¾
90-179 days	6
180 days or more	6¼

8.2(2) Single maturity time deposits of less than \$100,000. The maximum rate of interest is five percent per annum.

8.2(3) Multiple maturity time deposits. The following shall apply:

a. Interest payable ninety days or more after the date of deposit or ninety days or more after the last preceding date on which it might have been paid shall not exceed a rate of five percent per annum.

b. Interest payable at intervals of less than ninety days, but at least thirty days, after the last preceding date on which it might have been paid shall not exceed a rate of four percent per annum.

8.2(4) Savings deposit. The maximum rate of interest is four percent per annum.

8.2(5) The maximum interest rates fixed by this rule may be changed by temporary rule, applicable to all state banks, when the superintendent finds such a change necessary in order that state banks may compete with banks whose interest rates are subject to federal regulations.

8.3(Ch.273, 63GA) Paying interest on other than demand deposits.

8.3(1) Compounding. In calculating the rate of interest paid, the effects of compounding of interest may be disregarded. A state bank which elects to compound interest shall state the time period of compounding in every statement required by section 805(3) and in every notice or advertisement.

8.3(2) Grace period. A state bank may pay interest on a savings deposit received during the first ten calendar days of any calendar month at the permissible maximum rate calculated from the first day of the calendar month until such deposit is withdrawn or ceases to become a savings deposit. A state bank may pay interest on a savings deposit withdrawn during its last three calendar business days of any calendar month ending a regular quarterly or semiannual interest period at the permissible maximum rate calculated to the end of the calendar month.

8.4(Ch.273, 63GA) Effect of maturity on payment of interest. After the date of maturity of any time deposit, such deposit is a demand deposit, and no interest may be paid subsequent to that date or after the expiration of the period of notice

given with respect to the repayment of such time deposit or savings deposit when applicable. The foregoing sentence does not preclude a customer and the state bank from using the same account to initiate a new time or savings deposit relationship upon proper notice. If a time or savings deposit is renewed, automatically or by action of the customer, within ten days after maturity or expiration of the period of notice, the renewed deposit or any renewed portion may draw interest from the date of maturity or expiration date of the period of notice, and a time certificate may be dated back to the maturity date of the matured certificate.

8.5(Ch273, 63GA) Payment of time deposits before maturity. Except as provided in 8.5(2), a state bank shall not pay a time deposit prior to the contractual term.

8.5(1) A state bank may make a loan to the customer upon the security of his time deposit, provided that the rate of interest on the loan is not less than two percent per year more than the rate of interest on the time deposit.

8.5(2) Where it is necessary to prevent great hardship to the customer, a state bank may pay before maturity a time deposit or the portion thereof necessary to meet such emergency. Before making such payment the customer shall sign an application describing fully the circumstances constituting the emergency which is deemed to justify the payment of the deposit before maturity, which application shall be approved by an officer of the bank who shall certify that, to the best of his knowledge and belief, the statements in the application are true. Such application shall be retained in the files and made available to the examiners authorized to examine the state bank. Where a time deposit is paid before maturity the customer shall forfeit accrued and unpaid interest for a period of not less than three months on the amount withdrawn if an amount equal to the amount withdrawn has been on deposit three months or longer, and shall forfeit all accrued and unpaid interest on the amount withdrawn if an amount equal to the amount withdrawn has been on deposit less than three months. When a portion of a time certificate of deposit is paid before maturity, the certificate shall be canceled and a new certificate shall be issued for the unpaid portion of the deposit with the same terms, rate, date and maturity as the original deposit.

8.6(Ch.273, 63GA) Payment of savings deposits. Whether or not interest is paid, a state bank shall not require or waive notice of withdrawal as to any amount or percentage of the savings deposit of any customer unless it shall similarly require or waive notice as to the savings deposits of every other customer subject to the same contractual provisions with respect to notice or withdrawal.

If a state bank, without requiring notice of withdrawal, pays interest that has accrued on a savings deposit during the preceding interest period, it shall, upon request and without requiring such notice, pay interest that has accrued during the period on the savings deposits of every other customer.

A state bank shall not change its practice with respect to requiring or waiving of notice of withdrawal of savings deposits for the purpose of discriminating in favor of or against any customer.

Any change of practice shall be made only pursuant to duly recorded action by the directors of the state bank.

A state bank which does not require notice of withdrawal of savings deposits is not restricted as to loans to its customers on the security of such deposits. If it is the practice of the state bank to require notice of withdrawal of a savings deposit, a state bank may make a loan to a customer upon the security of his savings deposit, provided that the rate of interest on the loan is not less than two percent more than the rate of interest on the savings deposit.

8.7(Ch.273, 63GA) Cash reserve formula. Cash reserves required by section 816 shall consist of the sum of the following assets taken from the daily statement for each business day:

1. Coin and currency on hand.
2. Debit balances with other banks in the Seventh, Eighth, Ninth and Tenth

Federal Reserve Districts, less remittances debited to each such bank for the day for which reserves are being computed.

3. Debit balances with all other banks, less any remittances debited to each such bank for the day for which reserves are being computed and less remittances, if any, debited for the previous business day.

For purposes of applying section 1602(1) the cash reserve shall not be deemed to be deficient if the average of the cash reserve for the day for which the computation is made and the four preceding business days is at least equal to the average cash reserve requirement for such five-day period. Corrective action shall be taken on the day following the date of the daily statement for which the computation of averages discloses a deficiency in the cash reserve.

CHAPTER 9

INVESTMENT AND LENDING POWERS

9.1(Ch273, 63GA) Bonds or securities investment characteristics. Bonds or other investment securities purchased for investment by a state bank for its own account as provided in section 901(2) shall consist of obligations, which have been publicly offered or which are of such sound value or are so well secured as to be readily salable at a fair value, with investment characteristics not distinctly or predominantly speculative. They shall fall within the four highest grades according to a reputable rating service or they shall represent unrated issues of equivalent value.

Chapters 10 to 18, inclusive. RESERVED.

[Effective thirty days after filing with the Secretary of State.]

[Filed without approval of the Attorney General.]

EMPLOYMENT SAFETY COMMISSION

Pursuant to authority of section 88A.11 of the Code, the following rules are adopted.

[Filed December 23, 1969]

EMPLOYMENT SAFETY RULES

TITLE IV

GENERAL DIVISION

CHAPTER 3

SAFETY RULES FOR PORTABLE WOOD LADDERS

3.1(88A) General.

3.1(1) Scope. These rules are intended to prescribe and establish minimum requirements for the construction, care, and use of the common types of portable wood ladders, in order to insure safety under normal conditions of usage. In cases of practical difficulty or under special service conditions, the labor commissioner may grant exceptions from the lit-

cral requirements of these rules, or may permit the use of alternative designs or features, but only if equivalent safety is thereby secured.

3.1(2) Purpose. The purpose of these rules is to provide reasonable safety for life, limb, and property.

3.1(3) Mandatory and advisory rules. Mandatory requirements of these rules are characterized by the word "shall". If a rule is of an advisory nature, it is indicated by the word "should" or is stated as a recommendation.

3.1(4) Equivalent. The word "equivalent" in these rules shall be interpreted to mean alternative designs or features which will provide an equal degree of safety.

3.2(88A) Definitions.

3.2(1) Ladders. A ladder is an appliance usually consisting of two side rails joined at regular intervals by crosspieces called steps, rungs, or cleats, on which a person may step in ascending or descending.

a. Step ladder. A step ladder is a self-supporting portable ladder, nonadjustable in length, having flat steps and a hinged back. Its size is designated by the overall length of the ladder measured along the front edge of the side rails.

b. Single ladder. A single ladder is a non-self-supporting portable ladder, nonadjustable in length, consisting of but one section. Its size is designated by the overall length of the side rail.

c. Extension ladder. An extension ladder is a non-self-supporting portable ladder adjustable in length. It consists of two or more sections traveling in guides or brackets so arranged as to permit length adjustment. Its size is designated by the sum of the lengths of the sections measured along the side rails.

d. Sectional ladder. A sectional ladder is a non-self-supporting portable ladder, nonadjustable in length, consisting of two or more sections of ladder so constructed that the sections may be combined to function as a single ladder. Its size is designated by the overall length of the assembled sections.

e. Trestle ladder. A trestle ladder is a self-supporting portable ladder, nonadjustable in length, consisting of two sections hinged at the top to form equal

angles with the base. The size is designated by the length of the side rails measured along the front edge.

f. Extension trestle ladder. An extension trestle ladder is a self-supporting portable ladder, adjustable in length, consisting of a trestle ladder base and a vertically adjustable single ladder, with suitable means for locking the ladders together. The size is designated by the length of the trestle ladder base.

g. Special-purpose ladder. A special-purpose ladder is a portable ladder which represents either a modification or a combination of design or construction features in one of the general-purpose types of ladders previously defined, in order to adapt the ladder to special or specific uses.

h. Trolley ladder. A trolley ladder is a semifixed ladder, nonadjustable in length, supported by attachments to an overhead track, the plane of the ladder being at right angles to the plane of motion.

i. Side-rolling ladder. A side-rolling ladder is a semifixed ladder, nonadjustable in length, supported by attachments to a guide rail, which is generally fastened to shelving, the plane of the ladder being also its plane of motion.

3.2(2) Wood characteristics. Wood characteristics are distinguishing features which by their extent and number determine the quality of a piece of wood.

a. Wood irregularities. Wood irregularities are natural characteristics in or on wood that may lower its durability, strength, or utility. Some irregularities as described further are prohibited, while others, such as cross grain, knots, pitch and bark pockets, checks, and compression wood, are permitted to a limited degree.

(1) **Cross grain.** Cross grain (slope of grain) is a deviation of the fiber direction from a line parallel to the sides of the piece. Cross grain may be diagonal, or spiral, or both. Cross grain is limited in terms of its slope, which is established as the distance along the sides of the piece in which a deviation of grain of one inch occurs. (For example, cross grain with a slope of one in twelve means that, in a distance of twelve inches, the grain deviates one inch from the edge of the piece. The slope of grain shall be measured over a distance which will assure the determination of the general slope of the

grain not influenced by short local deviations.)

Local deviations of grain from the general slope in the piece are usually associated with a knot or other irregularity which may or may not be present in the piece. In addition to the limits on general slope of grain, it is desirable also, in pieces of small cross section such as occur in ladder parts, to limit the occurrence of local deviations except for those which are associated with otherwise permitted irregularities appearing in the piece.

(2) *Knot*. A knot is a branch or limb, imbedded in the tree and cut through in the process of lumber manufacture, classified according to size, quality, and occurrence. The size of the knot is determined as the average diameter on the surface of the piece.

(3) *Pitch and bark pockets*. A pitch pocket is an opening extending parallel to the annual growth rings containing, or that has contained, pitch, either solid or liquid. A bark pocket is an opening between annual growth rings that contains bark. Bark pockets appear as dark streaks on radial surfaces and as rounded areas on tangential surfaces.

(4) *Shake*. A shake is a separation along the grain, most of which occurs between the rings of annual growth.

(5) *Check*. A check is a lengthwise separation of the wood, most of which occurs across the rings of annual growth.

(6) *Wane*. Wane is bark, or the lack of wood from any cause, on the corner of a piece.

(7) *Decay*. Decay is disintegration of wood substance due to action of wood-destroying fungi. It is also known as *dote* and *rot*.

(8) *Compression failure*. A compression failure is a deformation (buckling) of the fibers due to excessive compression along the grain. This deformation may appear as a wrinkle across the surface. In some cases compression failures may be present but not visible as wrinkles; in such cases they are often indicated by "fiber breakage" on end grain surfaces.

(9) *Compression wood*. Compression wood is an aberrant (abnormal) and highly variable type of wood structure occurring in softwood species. The

wood commonly has density somewhat higher than does normal wood, but somewhat lower stiffness and tensile strength for its weight in addition to high longitudinal shrinkage which frequently causes warping of long, slender structural members such as ladder rails. This variant type of wood structure is readily identified in competent and conscientious visual examinations by relatively wide annual rings having large proportions of summerwood which is commonly yellow in color in contrast to brown or reddish coloration of typical summerwood. Such yellow summerwood merges with springwood of the same annual rings rather than being more sharply delineated as occurs in many softwood species. The seriousness of compression wood effects on strength and warping varies with the proportion of summerwood and with the number of consecutive annual rings that include these aberrant structural features of compression wood. (Wide streaks of readily identifiable compression wood comprising the predominance of the annual rings in a piece of lumber, for example, are associated with more seriously adverse properties than narrow streaks involving only a few annual rings; particularly when the summerwood comprises only one-third or less of the ring widths in narrow streaks.)

The intrinsic variability of compression wood includes a wide range in physical characteristics from the borderline forms merging imperceptibly with the typical wood structure and related properties of the softwood species at one extreme and extending to obviously aberrant structure associated with highly adverse properties at the other extreme. In the interest of safety and satisfactory performance of ladder parts, competent and conscientious visual inspection is essential to assure that readily identifiable compression wood is present only within permissible limitations.

(10) *Low density*. Low density wood is that which is exceptionally light in weight and usually deficient in strength properties for the species. In softwood species, low density is frequently indicated by exceptionally wide or sometimes by extremely narrow annual rings, but invariably having meager portions of summerwood. Low density in hardwoods, on the other hand, is most commonly associated with excessively narrow annual rings in which the springwood portion predominates.

3.3(88A) Materials.**3.3(1) Requirements for wood parts.****a. Requirements applicable to all wood parts.**

(1) *General requirements.* All wood parts shall be of the species specified in Table 1; seasoned to a moisture content of not more than fifteen percent; smoothly machined and dressed on all sides; free from sharp edges and splinters; sound and free by accepted visual inspection from shake, wane, compression failures, decay, or other irregularities except as hereinafter provided. Low-density wood shall not be used. Where lumber dimensions are specified in these rules they shall be considered to be nominal dimensions and moisture content commonly used in the lumber industry.

(2) *Limited irregularities.* Black streaks in western hemlock shall not be considered an irregularity, except that chambers associated with black streaks, when present in the part, shall be limited as specified for pitch and bark pockets.

b. Permissible irregularities in side rails and back legs.

(1) *Cross grain.* The general slope of grain in side rails of minimum dimension shall not be steeper than one in twelve, except that for ladders under ten feet in length and having flat steps for treads, the general slope of grain shall not be steeper than one in ten. The slope of grain in areas of local grain deviation shall not be steeper than one in twelve or one in ten as specified above when occurring on the edges or in the outer one-fourth of the width of the wide face. Local areas of grain deviation within the center half of the width of the wide face may be permitted to contain grain slope as steep as one in eight. Local deviations of grain associated with otherwise permissible irregularities shall be permitted.

(2) *Knots.* Knots shall not appear in narrow faces of side rails. Knots, if tight and sound and less than $\frac{1}{2}$ inch in diameter, shall be permitted on the wide face provided they are at least $\frac{1}{2}$ inch back from either edge and not more frequent than one to any three feet of ladder length.

(3) *Pitch and Bark Pockets.* Pitch and bark pockets shall be permitted provided they are not more than $\frac{1}{8}$ inch in width, or more than two inches in length, or more than $\frac{1}{2}$ inch in

depth, and then only if they are not more frequent than one to any three feet of ladder length.

(4) *Checks.* Checks shall be permitted on side rails provided they are not more than six inches in length or more than $\frac{1}{2}$ inch in depth.

(5) *Compression wood.* Occurrences of compression wood in relatively small amounts and positively identified by competent and conscientious visual inspection of side rails shall be permitted provided no single streak shall exceed $\frac{1}{2}$ inch in width nor shall the aggregate of streaks exceed one-fourth of the face of the side rail. Borderline forms of compression wood not positively identified by competent and conscientious visual inspection shall be permitted. Ladder parts containing bow or crook which would interfere with the operation of the ladder shall not be used.

c. Permissible irregularities in flat steps, rungs, and cleats.

(1) *Cross grain in flat steps.* The general slope of grain in flat steps of minimum dimension shall not be steeper than one in twelve, except that for ladders under ten feet in length the slope of grain shall not be steeper than one in ten. The slope of grain in areas of local deviation shall not be steeper than one in twelve or one in ten as specified above. For all ladders, cross grain not steeper than one in ten may be permitted in lieu of one in twelve provided the size is increased to afford at least 15 percent greater calculated strength than for ladders built to minimum dimensions. Local deviations of grain associated with otherwise permissible irregularities shall be permitted.

(2) *Cross grain in rungs and cleats.* The general slope of grain and that in areas of local deviations of grain shall not be steeper than one in fifteen in rungs and cleats. For all ladders cross grain not steeper than one in twelve may be permitted in lieu of one in fifteen, provided the size is increased to afford at least fifteen percent greater calculated strength than for ladders built to minimum dimensions. Local deviations of grain associated with otherwise permissible irregularities shall be permitted.

(3) *Knots.* Knots over $\frac{1}{8}$ inch in diameter shall not appear in the narrow faces of flat steps and cleats. Knots

appearing in the wide faces of flat steps and cleats shall not exceed a diameter of 1/4 inch.

3.3(2) Classification of species of wood. Table 1 gives a list of native woods, divided into four groups on the basis of mechanical properties considered from the standpoint of use for ladder construction.

a. Side rails and flat steps. All minimum dimensions and specifications set forth hereinafter for side rails and flat steps are based on the species of wood listed in Group 3 (Table 1) except where otherwise provided. The species of all other groups may be substituted for those of Group 3 when used in sizes that provide at least equivalent strength. (See Table 1 for suggested methods of size adjustment.)

b. Rungs and cleats. All minimum dimensions and specifications set forth hereinafter for rungs and cleats are based on the species of wood listed in Group 1 (Table 1). Cleats may be made of species of any other group provided that the cross-sectional dimensions specified for Group 1 species are increased by the factors shown below (based on the percentages of Table 1) for the species group of which the cleats are to be made.

Factor for Increase In
Width Only

Species Group	Each Dimension	(Thickness Unchanged)
1	1.00	1.00
2	1.03	1.05
3	1.11	1.19
4	1.17	1.26

3.3(3) Metal parts. All metal parts shall be made of aluminum, steel, wrought iron, malleable iron, or other material, adequate in strength for the purpose intended.

3.4(88A) Construction requirements.

3.4(1) Basis of requirements.

a. General. Dimensions specified hereinafter for wood ladders are the minimum dressed cross-sectional dimensions for the types of ladders herein designated, based on the species of wood specified in 3.3(2), at a moisture content of fifteen percent. The dimensions for side rails are based on a mortise or gain as specified for the various types of ladders for step or rung attachments. Where the strength of the side rails or back legs is reduced by a greater mortise or gain than shown,

or where it is desired to use a cross section for any wood part either dimension of which is less than that specified, the required dimensions may be found as indicated in 3.4(1) "b".

b. Formula.

(1) For the side rails of single, extension, and sectional ladders, the proposed section shall develop an actual stress per square inch not greater than 2150 pounds for Group 1 woods, 2000 pounds for Group 2 woods, 1600 pounds for Group 3 woods, or 1375 pounds for Group 4 woods when computed by the following formula applying to rectangular sections, with a maximum tolerance of five percent over these stresses:

$$S = \frac{3LD(P+W/16)}{2B(D^3-d^3)} = \frac{15LD(25+W/16)}{B(D^3-0.67)}$$

Eq 1

P=25 pounds, which is the normal component on each rail of a load of 200 pounds at the center of the ladder, equally distributed between the rails, when the foot of the ladder is moved out of the perpendicular by one-quarter of its length

S=stress in extreme fiber in pounds per square inch

W=weight of ladder in pounds (see Appendix)

L=maximum working length of ladder in inches

B=net thickness of each side rail in inches

D=depth of side rail in inches

d=diameter of hole bored for rung (d³ shall be taken as not less than 0.67)

(2) Adjustment of sizes for wood parts of stepladders and other ladder types covered by these rules may be made as follows:

The dimensions specified in later sections for parts having rectangular cross sections generally represent only one of a number of possible combinations of thickness and width which could satisfy the requirements for strength and stiffness. Depending upon the material sizes available, manufacturing practices, and like factors, parts produced by a particular manufacturer may or may not agree exactly with the sizes given later. The following paragraphs provide means for determining equality of load-carrying capacity of parts of different sizes or of

determining sizes needed to provide equality.

Any changes in dimensions made in accordance with the following paragraphs shall result in a change in the width-thickness ratio for side rails of back legs not greater than twenty-five percent from the ratio for a corresponding ladder as now covered in these rules.

Where both dimensions are different from those specified, the load-carrying capacity in bending of a part will be equal to or greater than that of a part of specified dimensions if the ratio P_2/P_1 is not less than one, where

$$\frac{P_2}{P_1} = \frac{B_2 D_2^2}{B_1 D_1^2}$$

Eq 2

and

B = dimension of the part at right angles to the direction of load (width of a step, thickness of a side rail or back leg)

D = dimension of the part parallel to the direction of load (thickness of a step, width of a side rail or back leg)

B_1, D_1 = dimensions as specified

B_2, D_2 = dimensions of part being considered

The dimensions to be used in the computations are net dimensions. For example, in the case of a stepladder side rail, the dimension "B" is to be taken as the gross thickness of the rail minus the depth of the gain for the steps. Where there is a rung hole at the center of depth of a rail, a somewhat more accurate comparison may be made by the use of the formula

$$\frac{P_2}{P_1} = \frac{B_2 D_1 (D_2^3 - d^3)}{B_1 D_2 (D_1^3 - d^3)}$$

Eq 3

where the symbols have the same meanings as before and "d" is the diameter of the hole for the rung tenon. In most instances the difference in results calculated by this and by the earlier formula will be slight.

3.4(2) Portable stepladders. Stepladders longer than twenty feet shall not be supplied. Stepladders as hereinafter specified shall be of three types as follows:

Type I—Industrial stepladder, three to twenty feet for heavy duty, such as utilities, contractors, and industrial use

Type II—Commercial stepladder, three to twelve feet for medium duty, such as painters, offices, and light industrial use

Type III—Household stepladder, three to six feet for light duty, such as light household use.

a. General requirements.

(1) *Slope.* Slope is the inclination of side rails or back legs with respect to the vertical and is expressed as a deviation from the vertical per unit length of the member. Stepladders shall be so constructed that, when in the open position, the slope of the front section shall not be less than $3\frac{1}{2}$ inches and the slope of the back section not less than two inches, for each twelve-inch length of side rail.

(2) *Step spacing.* A uniform step spacing shall be employed which shall be not more than twelve inches. Steps shall be parallel and level when the ladder is in position for use.

(3) *Width and spread.* The minimum width between side rails at the top, inside to inside, shall be not less than $11\frac{1}{2}$ inches. From top to bottom, the side rails shall spread at least one inch for each foot of length of stepladder.

(4) *Step attachment.* When minimum thickness of side rails is used, steps shall be closely fitted into the grooves in the side rails $\frac{1}{8}$ inch in depth with a tolerance of $\pm 1/32$ inch, and shall be firmly secured as hereinafter described; or they shall be closely fitted into metal brackets of an equivalent strength, which in turn shall be firmly secured to the side rails. The depth of groove herein provided may be increased in proportion to the thickness of side rails as provided in 3.4(2) "b" (1), 3.4(2) "c" (1), and 3.4(2) "d" (1).

(5) *Top.* All stepladders shall have a top with wood or metal brackets or fittings (see 3.3(3)) tightly secured to the top, side rails, and back legs, to allow free swinging of the back section without excessive play or wear at the joints.

(6) *Spreader.* A metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in open position shall be a

component of each stepladder. The spreader shall have all sharp points covered or removed to protect the user. For Type III ladder, the pail shelf and spreader may be combined in one unit (the so-called shelf-lock ladder).

(7) *Length tolerance.* When measured along the front edge of the side rails, all stepladders shall measure within three inches of the specified length.

(8) *Bucket shelves.* Where bucket shelves are provided, they shall be constructed to support a load of twenty-five pounds and shall be so fastened that they can be folded up when the ladder is closed.

(9) *Metal parts.* All metal parts and fittings (see 3.3(3)) shall be securely attached by means of rivets, bolts, screws, or equivalent fasteners.

b. Type I Industrial stepladder.

(1) *Dimensions.* The minimum dimensions of the parts of the Type I stepladder shall be as shown in Table 2 when made of Group 2 or Group 3 woods.

The minimum thickness of side rails provides for the cutting of a groove of $\frac{1}{8}$ inch in depth with the tolerance indicated in 3.4(2) "a" (4) and shall be increased when grooves of greater depth are used.

(2) *Flat steps.* Steps shall be secured with at least two 6-d nails at each end, or the equivalent thereof. Each step shall be reinforced by a steel rod not less than 0.160 inch in diameter with standard commercial tolerances, which shall pass through metal washers of sufficient thickness and diameter on each end to prevent pressing into the side rails, and a truss block which shall be fitted between the rod and the center of each step; or by a metal angle brace on each end firmly secured to the steps and side rails; or by construction of equivalent strength and safety. Where the rod reinforcement construction is used, the bottom step shall be provided further with a metal angle brace on each end which shall be securely attached to the bottom step and side rails. In addition, all steps $3\frac{5}{8}$ inches wide and twenty-seven inches or more in overall length and all steps $4\frac{1}{4}$ inches wide and thirty-two inches or more in overall length shall be provided with a metal angle brace at each end securely attached to the step and side rail.

(3) *Bracing of back section.* The back section shall be braced by one of the following methods:

The back legs shall be braced with $1\frac{1}{8}$ -inch diameter rungs of Group 1 woods (see Table 1), or material of equivalent strength, having $\frac{7}{8}$ -inch diameter tenons or oval wood rungs, or rectangular wood rungs of equivalent strength, spaced not more than twelve inches apart. The back legs shall be bored with holes either extending through the legs or to within $\frac{3}{16}$ inch of the outside face of the legs, the size of the hole to be such as to insure a tight fit for the rung. The shoulder of the rung shall be forced firmly against the leg, and the tenon secured in place with a nail, or the equivalent thereof, to prevent turning of the rungs. The back legs shall be braced by a metal angle brace on each side, securely fastened to the rung and the back legs, one rung to be braced for each four feet or fraction thereof, on ladders four feet or more in length, with braces required only on the bottom rung for ladders that are four feet or shorter. Where rungs are more than twenty-eight inches in length between the back legs they shall be provided with center bearing consisting of a wood bar not less than $\frac{3}{4}$ by two inches in cross section securely nailed to each rung passing through it and long enough to include each rung longer than twenty-eight inches.

The back leg shall be braced with horizontal wood bars of Group 1, 2, or 3 woods (see Table 1) not less than $\frac{3}{4}$ by $2\frac{1}{2}$ inches in cross section, spaced not more than twelve inches apart. The ends of the bars shall fit into metal sockets of not less than twenty-gauge (Manufacturers' Standard) steel, or other material of equivalent strength, or into mortises of not less than $\frac{1}{8}$ inch (tolerance of $\pm 1/32$ inch) in depth in the back legs. A steel rod not less than 0.160 inch in diameter with standard commercial tolerance shall pass through the back legs, the bar, and at each end through metal washers of sufficient diameter and thickness to prevent pressing into the back legs. The back legs shall also be braced by a metal angle brace on each side, securely fastened to the bar and to the legs, one bar to be so braced for at least each four feet of length or fraction thereof, with braces required only on bottom bar for ladders that are four feet or shorter. Metal sockets when used shall be attached to the back legs by rivets or by means of a

rod running through the socket or equivalent thereof.

(4) *Antisplit devices.* The back legs shall be reinforced by a rivet through the depth of the leg above the hinge point, by metal plates or collars at the hinge point, or by other means suitable for preventing splitting of the back leg from the hinge pin to the top.

c. Type II commercial stepladder.

(1) *Dimensions.* The minimum dimensions of the parts of the Type II stepladder shall be as given in Table 3 when made of Group 2 or Group 3 woods.

The minimum thickness of side rails provides for the cutting of a groove of $\frac{1}{8}$ inch in depth with the tolerance indicated in 3.4(2) "a"(4) and shall be increased when grooves of greater depth are used.

(2) *Flat steps.* Steps shall be secured with at least two 6-d nails at each end, or the equivalent thereof. Each step shall be reinforced by a steel rod not less than 0.160 inch in diameter with standard commercial tolerances which shall pass through metal washers of sufficient thickness and diameter on each end to prevent pressing into the side rails, and a truss block shall be fitted between the truss rod and the center of each step; or by a metal angle brace on each end firmly secured to the steps and side rails; or by construction of equivalent strength and safety. Where the rod reinforcement construction is used, the bottom step shall be provided further with a metal angle brace on each end which shall be securely attached to the bottom step and side rails.

(3) *Bracing.* The back legs shall be braced by one of the three following methods:

With $\frac{7}{8}$ -inch diameter wood dowels of Group 1 woods (see Table 1) or material of equivalent strength having not less than $\frac{5}{8}$ -inch tenons firmly secured in the back legs and spaced not more than twelve inches apart. The back legs shall be bored with holes either extending through the legs or to within $\frac{3}{16}$ inches of the outside face of the legs, the size of the hole to be such as to insure a tight fit for the dowel. The shoulder of the dowel shall be forced firmly against the leg and the tenon secured in place with a nail, or the equivalent thereof, to prevent turning of the dowel.

A bar connecting two or more of the dowels shall be provided on all ladders of

six feet or more. The cross-sectional dimensions of the bar shall be the same as the cross-sectional dimensions of the back legs, and the dowels shall pass through holes at the center line of the bar. The bar shall be attached at the center of the length of the lower two dowels on a six-foot ladder and shall extend upward one dowel for each added two feet of length.

With wood dowels as set forth in subparagraph 3 above plus an inverted "V" bracing of $\frac{3}{4}$ - by $1\frac{1}{2}$ -inch material through which the dowels extend, the length of the "V" to extend two-thirds of the way up the back.

With horizontal bracing of Group 1, 2, 3 or 4 woods (see Table 1) not less than $\frac{3}{4}$ by two inches in cross section, the ends of which shall fit into metal sockets of not less than twenty-gauge (Manufacturers' Standard) steel, or other material of equivalent strength, or into mortises not less than $\frac{1}{8}$ inch in depth in back legs. The bars shall be reinforced by steel rods not less than 0.160 inches in diameter with standard commercial tolerances which shall pass through the back legs, the bar, and, at each end, through metal washers of sufficient diameter and thickness to prevent pressing into the back legs. The spacing of such braces shall not exceed three feet, and there shall be one brace on three- and four-foot ladders, two braces on five- and six-foot ladders, three braces on seven- and eight-foot ladders, and four braces on ten- and twelve-foot ladders. The bottom bar shall not be more than eighteen inches from the bottom of the ladder, and, where only one bar is used, it shall be braced by a metal angle brace on each end securely attached to the bar and the back leg.

d. Type III household stepladder.

(1) *Dimensions.* The minimum dimensions of the parts of the Type III stepladder shall be as follows when made of Group 2 or Group 3 woods.

	Length 3 to 6 Feet	
	Thickness (Inch)	Depth (Inches)
Side Rails	$\frac{3}{4}$	$2\frac{1}{2}$
Back Legs	$\frac{3}{4}$	$1\frac{5}{16}$
Steps	$\frac{3}{4}$	3
Top	$\frac{3}{4}$	5

The minimum thicknesses of side rails provide for the cutting of a groove $\frac{1}{8}$ inch in depth with the tolerance indicated

in 3.4(2) "a"(4) and shall be increased when grooves of greater depth are used.

(2) *Flat Steps.* Steps shall be secured with at least one 6-d nail at each end, or the equivalent thereof. Each step shall be reinforced by a steel rod not less than 0.160 inch in diameter with standard commercial tolerance which shall pass through metal washers of sufficient thickness and diameter to prevent pressing into the side rails, or by a metal brace at each end firmly secured to steps and side rails; or by construction of equivalent strength and safety. Where the rod reinforcement construction is used, the bottom step shall be provided further with a metal angle brace on each end which shall be securely attached to the bottom step and side rail.

(3) *Bracing.* Back legs shall be braced by one of the two following methods or by construction of equivalent strength and safety.

By diagonal slats of Group 1, 2, 3, or 4 wood (see Table 1) not less than 5/16 by 1 1/4 inches securely fastened to the back legs by nails, screws, or the equivalent thereof.

With horizontal bracing of Group 1, 2, 3, or 4 wood (see Table 1) not less than 5/8 by 1 5/8 inches in cross section, the ends of which shall fit into metal sockets of not less than 20-gauge (Manufacturers' Standard) steel or other material of equivalent strength or into mortises not less than 1/8 inch in depth in back legs. The bars shall be reinforced by steel rods not less than 0.160 inch in diameter with standard commercial tolerances which shall pass through the back leg, the bar, and at each end through metal washers of sufficient diameter and thickness to prevent pressing into each leg. The spacing of such bars shall not exceed three feet, and there shall be one brace on three- and four-foot ladders, two braces on five- and six-foot ladders. The bottom bar shall be not more than eighteen inches from the bottom of the ladder.

3.4(3) Portable rung ladders. Portable rung ladders as herein specified shall be of four types, as follows: single ladder; two-section extension ladder; sectional ladder; trestle and extension trestle ladder.

a. General requirements.

(1) *Base.* The base or lower portion of a ladder may have either parallel sides or flared sides in accordance with commercial practice.

(2) *Rung spacing.* Rungs shall be parallel, level, and uniformly spaced. The spacing shall be not more than twelve inches, except as hereinafter specified.

(3) *Rung joint.* All holes for wood rungs shall either extend through the side rails or be bored so as to give at least a 13/16-inch length of bearing to the rung tenon. In through-bored construction, the rungs shall extend at least flush with the outside rail surface. All holes shall be located on the center line of the wide face of the side rails and shall be of such size as to insure a tight fit for the rung. The shoulder of the rung shall be forced firmly against the side rails and the tenon secured in place with a nail or the equivalent thereof, for the sole purpose of preventing the turning of the rung and maintaining the rung position in the side rail.

(4) *Rung dimensions.* Round rungs shall be of Group 1 woods (see Table 1), shall be not less than 1 1/8 inches in diameter for lengths up to thirty-six inches between side rails and 1 1/4 inches in diameter for lengths over thirty-six up to and including seventy-two inches, and shall have not less than 7/8-inch-diameter tenons, or rungs of equivalent strength and bearing shall be provided. When rungs are twenty-eight inches or more in length between side rails, they shall, in addition, be provided with center bearing.

(5) *Oval rungs.* Oval rungs or rungs of any other cross section may be used provided they are secured by a nail at each end or the equivalent thereof, and have at least the same strength and bearing as round rungs of the same length.

(6) *Metal parts.* All metal parts and fittings (see 3.3(3)) shall be securely attached by means of rivets, bolts, screws, or equivalent fasteners.

(7) *Movable parts.* The construction and assembly of the movable parts shall be such that they shall operate freely and securely without binding or unnecessary play.

(8) *Length tolerance.* When measured along the side rails, no rung ladder or section thereof shall be more than four inches shorter than the specified length.

(9) *Nonslip bases.* Nonslip bases where required (see 3.5(2) "i") shall be securely bolted, riveted or at-

tached by equivalent construction to the side rails.

(10) *Hooks.* Hooks shall be securely bolted or riveted to the side rails or equivalent construction, and shall be of such dimensions as to withstand the loads imposed upon them.

b. Single ladder.

(1) *Length.* Single ladders longer than thirty feet shall not be supplied.

(2) *Dimensions.* The minimum dimensions of the side rails of the single ladder shall be as follows when made of Group 2 or Group 3 woods:

Length of Ladder (Feet)	Thickness (Inches)	Depth (Inches)
Up to and including 16	1 $\frac{1}{8}$	2 $\frac{1}{2}$
Over 16 up to and including 22	1 $\frac{1}{4}$	2 $\frac{3}{4}$
Over 22 up to and including 30	1 $\frac{1}{4}$	3

(3) *Reinforced rails.* Smaller side rails will be acceptable in all ladders of this type when reinforced by a steel wire, rod, or strap running the length of the side rails and adequately secured thereto. Where such reinforcement is used, the reinforced rails shall be equivalent in strength to the side rails specified in 3.4(3) "b" (2).

(4) *Width.* The width between the side rails at the base, inside to inside, shall be at least 11 $\frac{1}{2}$ inches for all ladders up to and including ten feet. Such minimum widths shall be increased at least $\frac{1}{4}$ inch for each additional two feet of length.

c. Two-section ladder.

(1) *Length.* Two-section extension ladders longer than sixty feet shall not be supplied. All ladders of this type shall consist of two sections, one to fit within the side rails of the other, and arranged in such a manner that the upper section can be raised and lowered.

(2) *Dimensions.* The minimum dimensions of the side rails of the two-section extension ladder shall be not less than specified in Table 4.

(3) *Overlap.* The minimum dimensions of side rails set forth in Table 4 are based on the maximum working length, which is the size of ladder less the minimum overlap, which shall be as follows:

Size of Ladder (Feet)	Overlap (Feet)
Up to and including 36	3
Over 36 up to and including 48	4
Over 48 up to and including 60	5

(4) *Reinforced rails.* Smaller side rails will be acceptable in all ladders of this type when reinforced by a steel wire, rod, or strap running the length of the side rails and adequately secured thereto. Where such reinforcement is used, the reinforced rails shall be equivalent in strength to the side rails specified in Table 4.

(5) *Width.* The minimum distance between the side rails of the bottom section, inside to inside, shall be 14 $\frac{1}{2}$ inches on ladders up to and including twenty-eight feet; sixteen inches on all ladders over twenty-eight feet up to and including forty feet; eighteen inches on all ladders over forty feet.

(6) *Hardware.* All locks and guide irons shall be of metal (see 3.3(3)) and shall be of such construction and strength as to develop the full strength of the side rails. All locks shall be positive in their action. The guide irons shall be securely attached and so placed as to prevent the upper section from tipping or falling out while raising, lowering, or in use.

(7) *Rope and pulley.* Ladders of this type may be equipped with a rope and pulley, which shall be securely attached to the ladder in such manner as not to weaken either the rungs or the side rails. The pulley shall be not less than 1 $\frac{1}{4}$ inches in diameter.

The rope used with the pulley shall be not less than 5/16 inch in diameter having a minimum breaking strength of 560 pounds, and shall be of sufficient length for the purpose intended.

d. Sectional ladder.

(1) *Length.* Assembled combinations of sectional ladders longer than thirty-one feet shall not be supplied.

(2) *Dimensions.* The minimum dimensions of side rails shall be as follows for Group 2 or Group 3 woods:

Assembled Length of Ladder (Feet)	Thickness (Inches)	Depth (Inches)
Up to and including 21	1 $\frac{1}{8}$	2 $\frac{3}{4}$
Over 21 up to and including 31	1 $\frac{1}{8}$	3 $\frac{1}{8}$

(3) *Width.* Ladders of this type shall have either straight sides slightly converging toward the top of each section, or shall have flaring sides at the bottom of the first (or bottom) section, with the top section having converging side rails to a width that shall be not less than four inches. Except for the top section, the minimum width between side rails shall be eleven inches.

(4) *Connecting joint.* Adjacent sections shall be joined by means of a groove in the bottom end of each rail of the upper of the two sections setting firmly over extensions, outside the side rails, of the topmost rung of the next lower section and, at the same time, a groove in the top end of each rail of the lower of the two sections setting firmly over the bottom rung, inside the side rails, of the section next above.

The distance between the two rungs (topmost rung of one section, bottom rung of the section next above) mentioned in the first paragraph above shall not be less than one foot.

The fit between rail grooves and rungs mentioned in the first paragraph above shall be such as to provide a good fit without binding or unnecessary play.

The grooved ends of the sections shall be reinforced with a metal plate (see 3.3(3) of not less than 18-gauge (Manufacturers' Standard) material properly secured thereto, and a rivet adjacent to the groove, extending through the depth of the rail, or the equivalent thereof.

e. Trestle and extension trestle ladder.

(1) *Length.* Trestle ladders, or extension sections or base sections of extension trestle ladders longer than 20 feet shall not be supplied.

(2) *Dimensions.* The minimum dimensions of the side rails of the trestle ladder, or the base sections of the extension trestle ladder, shall be as follows for Group 2 or Group 3 woods.

Size of Ladder (Feet)	Thickness (Inches)	Depth (Inches)
Up to and including 16	1 5/16	2 3/4
Over 16 up to and including 20	1 5/16	3

The minimum dimensions of the side rails of the extension section of the extension trestle ladder, which shall have

parallel sides, shall be as follows for Group 2 or Group 3 woods.

Size of Ladder (Feet)	Thickness (Inches)	Depth (Inches)
Up to and including 12	1 5/16	2 1/4
Over 12 up to and including 16	1 5/16	2 1/2
Over 16 up to and including 20	1 5/16	2 3/4

(3) *Slope.* Trestle ladders and base sections of extension trestle ladders shall be so spread that when in an open position the spread of the trestle at the bottom, inside to inside, shall be at least 5 1/2 inches per foot of the length of the ladder.

(4) *Width.* The width between the side rails at the base of the trestle ladder and base sections of the extension trestle ladder shall be at least twenty-one inches for all ladders and sections up to and including six feet. Longer lengths shall be increased at least one inch for each additional foot of length. The width between the side rails of the extension sections of the trestle ladder shall be not less than twelve inches.

(5) *Hinge joint.* The tops of the side rails of the trestle ladder and of the base section of the extension trestle ladder shall be beveled, or equivalent construction, and shall be provided further with a metal (see (3.3(3) hinge to prevent spreading.

(6) *Spreader.* A metal spreader or locking device (see 3.3(3) to hold the front and back sections in an open position, and to hold the extension section securely in the elevated position, shall be a component of all extension trestle ladders and all trestle ladders over twelve feet in length.

(7) *Rung spacing.* Rungs shall be parallel and level. On the trestle ladder, or on the base sections of the extension trestle ladder, rungs shall be spaced not less than eight inches or more than eighteen inches apart; on the extension section of the extension trestle ladder, rungs shall be spaced not less than six inches or more than twelve inches apart.

3.4(4) *Special-purpose ladders.* All special-purpose ladders shall comply with the appropriate requirements of 3.4(1), 3.4(2), and 3.4(3) except as hereinafter modified in this section.

a. *Platform stepladder.* A platform stepladder is a modification of a portable stepladder with a working platform provided near the top.

(1) Platform stepladders shall be made in accordance with the requirements for Type I stepladders (see 3.4(2) "b") or in accordance with the requirements for Type II stepladders (see 3.4(2) "c").

(2) The slope of the back section shall be such that a vertical from the back edge of the platform will strike the floor at a distance, measured toward the front section, of not less than three inches from the base of the back section.

(3) The minimum width between side rails at the platform shall be not less than fifteen inches.

(4) The back legs and side rails shall extend at least twenty-four inches above the platform and shall be connected with a top member to form a three-sided rail, or equivalent construction shall be provided.

(5) Platforms shall be so constructed as to be capable of supporting a load of 200 pounds placed at any point on the platform.

(6) A separate spreader may be omitted from platform ladders in which the height to the platform is six feet or less. If the spreader is omitted, the platform shall be so designed as to function as a spreader or locking device to hold the front and back sections securely in an open position, with the connection between side rails and back legs being through the metal parts of the platform. The wood parts of a combined wood and metal platform functioning as a spreader shall not be depended upon to contribute to the spreading or locking action.

b. *Painter's stepladder.*

(1) In accordance with this section, painter's stepladders longer than twelve feet shall not be supplied.

(2) Painter's stepladders shall be made in accordance with the requirements of Type II stepladders (see 3.4(2) "c") except for the following:

The top may be omitted.

A rope spreader may be substituted for the metal spreader required in 3.4(2) "a"(6). The rope shall not be less than No. 6 sash cord or its equivalent.

c. *Other types of special ladders.* (Other types of special ladders such as three-section extension ladders, fruit-picker's ladders, combination step and extension ladders, stockroom stepladders, aisle-way stepladders, shelf ladders, job-made ladders, and library ladders are not specifically covered by these rules.)

3.4(5) *Trolley and side-rolling ladders.*

a. *Length.* Trolley ladders and side-rolling ladders longer than twenty feet should not be supplied.

b. *Dimensions.* The dimensions of side rails shall not be less than the following for Group 2 or Group 3 woods:

Length of Side Rails (Feet)	Thickness (Inch)	Depth (Inches)
Up to and including 10	25/32	3
Over 10 up to and including 20	25/32	3¼

The minimum thicknesses of side rails provide for the cutting of a groove not over 1/8 inch in depth and shall be increased when grooves of greater depth are used.

Flat steps shall have the following minimum dimensions for Group 2 or Group 3 woods:

Length of Step (Inches)	Thickness (Inch)	Width (Inches)
Up to and including 16	25/32	3
Over 16 up to and including 20	25/32	3¼
Over 20 up to and including 24	25/32	3½
Over 24 up to and including 28	25/32	4

c. *Width.* The width between the side rails, inside to inside, shall be at least twelve inches.

d. *Step attachment.* Flat steps shall be inset in the side rails 1/8 inch and secured with at least two 6-d nails at each end or the equivalent thereof. They shall be reinforced with angle braces or a 3/16-inch steel rod.

e. *Locking device.* Locking devices should be provided on all trolley ladders.

f. *Tracks.* Tracks shall be wood, or metal (excluding cast iron), or a combination of these materials.

Tracks for the top end of ladders shall be fastened securely and shall be so con-

structed that the wheels will not jump the track. Tracks shall be so designed as to provide for all probable loads to which they will be subjected.

The supports shall be securely fastened by lag screws, machine, hook, or toggle bolts, or their equivalent.

Track for side-rolling ladders shall be supported by metal or wood brackets securely screwed or bolted to shelving or other permanent structure at not over three feet.

g. Wheel carriages. Wheel carriages shall be so designed as to provide for all loads to which they will be subjected. Two-point suspension should be used.

The wheel carriage for the top end of the ladder shall be securely fastened to the top of the ladder with metal brackets bolted either to the side rails or to the top step. When bolted to the top step, this step shall be secured to the side rails with metal braces in addition to those otherwise provided. The wheel carriage shall be so designed that a loose or broken wheel will not allow the ladder to drop or become detached from the track.

The wheel carriage for the bottom end of the ladder shall be securely fastened to the bottom of the ladder.

The wheels at the upper end of the ladder shall have minimum wheel base of eight inches.

When wheels are used at the bottom of the ladder, there shall be at least one wheel supporting each side rail.

Running gear for bottoms of both trolley and side-rolling ladders shall be so designed and constructed as to provide for any load to which they will be subjected.

3.5(88A) Care and use of ladders.

3.5(1) Care.

a. Ladders shall be maintained in good condition at all times, the joint between the steps and side rails shall be tight, all hardware and fittings securely attached, and the movable parts shall operate freely without binding or undue play.

b. Metal bearings of locks, wheels, and pulleys shall be frequently lubricated.

c. Frayed or badly worn rope shall be replaced.

d. Safety feet and other auxiliary equipment shall be kept in good condition to insure proper performance.

e. Ladders should be stored in such a manner as to provide ease of access or inspection, and to prevent danger of accident when withdrawing a ladder for use.

f. Wood ladders, when not in use, should be stored at a location where they will not be exposed to the elements, but where there is good ventilation. They shall not be stored near radiators, stoves, steam pipes, or other places subjected to excessive heat or dampness.

g. Ladders stored in a horizontal position should be supported at a sufficient number of points to avoid sagging and permanent set.

h. Ladders carried on vehicles should be adequately supported to avoid sagging and securely fastened in position to minimize chaffing and the effects of road shocks.

i. Ladders should be kept coated with a suitable transparent protective material.

j. Ladders shall be inspected frequently and those which have developed defects shall be withdrawn from service for repair or destruction and tagged or marked as "Dangerous, Do Not Use."

k. Rungs shall be kept free of excessive grease and oil.

3.5(2) Use.

a. Portable rung and cleat ladders shall, where possible, be used at such a pitch that the horizontal distance from the top support to the foot of the ladder is one-quarter of the working length of the ladder (the length along the ladder between the foot and the top support). The ladder shall be so placed as to prevent slipping, or it shall be lashed, or held in position. Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.

b. Ladders for which dimensions are specified herein should not be used by more than one man at a time nor with ladder jacks and scaffold planks where use by more than one man is anticipated. In such cases, specially designed ladders with larger dimensions of the parts should be procured.

c. Portable ladders shall be so placed that the side rails have a secure footing. The top rest for portable rung and cleat ladders shall be reasonably rigid and shall have ample strength to support the applied load.

d. Ladders shall not be placed in front of doors opening toward the ladder unless the door is blocked open, locked, or guarded.

e. Ladders shall not be placed on boxes, barrels, or other unstable bases to obtain additional height.

f. To support the top of a ladder at a window opening, a board should be attached across the back of the ladder, extending across the window and providing firm support against the building walls or window frames.

g. When ascending or descending, the user should face the ladder.

h. Ladders with broken or missing steps, rung, or cleats, broken side rails, or other faulty equipment shall not be used. Improvised repairs shall not be made.

i. Short ladders shall not be spliced together to provide long sections.

j. Ladders made by fastening cleats across a single rail shall not be used.

k. In building construction, where warranted by height of operations or traffic conditions, separate ladders shall be designated for ascent or descent.

l. Ladders shall not be used as guys, braces, or skids, or for other than their intended purposes.

m. Tops of the ordinary types of stepladders shall not be used as steps.

n. On two-section extension ladders the minimum overlap for the two sections in use shall be as follows:

Size of Ladder (Feet)	Overlap (Feet)
Up to and including 36	3
Over 36 up to and including 48	4
Over 48 up to and including 60	5

o. Portable rung ladders with reinforced rails (3.4(3) "b"(3), 3.4(3) "c"(4)) shall be used only with the metal reinforcement on the under side. Ladders of this type shall not be used near exposed electrical conductors, since the reinforcing itself is a good conductor.

p. No ladder should be used to gain access to a roof unless the top of the ladder shall extend at least three feet above the point of support, at eave, gutter, or roof line.

q. Adjustment of extension ladders should only be made by the user when standing at the base of the ladder, so that the user may observe when the locks are properly engaged. Adjustment of extension ladders from the top of the ladder (or any level over the locking device) is a dangerous practice and should not be attempted. Adjustment should not be made while the user is standing on the ladder.

r. Middle and top sections of sectional or window cleaners ladders should not be used for bottom section unless the user equips them with safety shoes.

s. Extension ladders should always be erected so that the upper section is resting on the bottom section.

t. All portable rung ladders shall be equipped with nonslip bases unless other provisions have been provided to prevent slipping on the surface on which the ladder stands. Nonslip bases are not intended as a substitute for care in safety placing, lashing, or holding a ladder that is being used upon oily metal, concrete, or slippery surfaces.

u. The bracing on the back legs of stepladders is designed solely for increasing stability and not for climbing.

v. When service conditions warrant, hooks may be attached at or near the top of portable ladders to give added security.

Table 1

Classification of Various Species of Wood Acceptable for Use in Ladders

The species are listed alphabetically within each group. The position of any species within a group therefore bears no relation to its strength or acceptability.

Where ladders are desired for use under conditions favorable to decay, it is recommended that the heartwood of decay-resistant species be used, or that the wood be given a treatment with a wood preservative. The species having the most durable heartwood are marked with an asterisk (*), and these should be preferred where resistance to decay is required.

Group 1

The allowable fiber stress in bending for the species listed herein when used for side rails shall not exceed 2150 pounds per square inch. These species may be substituted for Group 3 woods on the following basis: The dimensions may be not more than 10 percent smaller for each cross-section dimension, or the thickness may remain unchanged, in which case the width may not be more than 15 percent smaller if used edgewise (as in a rail) or 25 percent smaller if used flatwise (as in a tread).

White ash	Fraxinus americana, pennsylvanica, quadrangulata
Beech	Fagus grandifolia
Birch	Betula lenta, alleghaniensis, nigra (2)
Rock elm	Ulmus thomasii
Hickory	Carya ovata, laciniosa, tomentosa, glabra
Locust*	Robinia pseudoacacia, Gleditsia triacanthos
Hard maple	Acer nigrum, saccharum
Red maple	Acer rubrum (3)
Red oak	Quercus velutina, marilandica, kelloggii, falcata var. pagodaefolia, laurifolia, ellipsoidalis, rubra, nuttallii, palustris, coccinea, shumardii, falcata, laevis, phellos
White oak	Quercus arizonica, douglasii, macrocarpa, lobata, prinus, muehlenbergii, emoryi, gambelii, oblongifolia, virginiana, garryana, lyrata, stellata, michauxii, bicolor, alba
Pecan	Carya illinoensis, cordiformis, myristicaeformis (4), aquatica (4)
Persimmon	Diospyros virginiana

Group 2

The allowable fiber stress in bending for the species listed herein when used for side rails shall not exceed 2000 pounds per square inch. These species may be substituted for Group 3 woods on the following basis: The dimensions may be not more than 7½ percent smaller for each cross-section dimension, or the thickness may remain unchanged, in which case the width may be not more than 11 percent smaller if used edgewise (as in a rail) or 20 percent smaller if used flatwise (as in a tread).

Douglas fir (Coast region)	Pseudotsuga menziesii
Western larch	Larix occidentalis
Southern yellow pine	Pinus taeda, palustris, echinata, elliotii, rigida, virginiana

Group 3

The allowable fiber stress in bending for the species listed herein when used for side rails shall not exceed 1600 pounds per square inch.

Red alder	Alnus rubra, rhombifolia (2)
Oregon ash	Fraxinus latifolia
Pumpkin ash	Fraxinus profunda
Alaska cedar*	Chamaecyparis nootkatensis
Port Orford cedar*	Chamaecyparis lawsoniana
Cucumber	Magnolia acuminata
Cypress*	Taxodium distichum
Soft elm	Ulmus americana, rubra
Douglas fir (Rocky Mountain type)	Pseudotsuga menziesii var. glauca
Noble fir	Abies procera

Gum	Liquidambar styraciflua
West Coast hemlock	Tsuga heterophylla
Magnolia	Magnolia Grandiflora
Oregon maple	Acer macrophyllum
Norway pine	Pinus resinosa
Poplar	Liriodendron tulipifera
Redwood*	Sequoia sempervirens
Eastern spruce	Picea glauca, rubens
Sitka spruce	Picea sitchensis
Sycamore	Platanus occidentalis
Tamarack	Larix laricina
Tupelo	Nussa aquatica, sylvatica

Group 4

The allowable fiber stress in bending for the species listed herein when used for side rails shall not exceed 1375 pounds per square inch. These species may be substituted for Group 3 woods on the following basis: The dimensions shall be at least 5 percent greater for each cross-section dimension, or the thickness may remain unchanged, in which case the width shall be at least 7½ percent greater if used edgewise (as in a rail) or 15 percent greater if used flatwise (as in a tread).

Aspen	Populus tremuloides, grandidentata
Basswood	Tilia americana, heterophylla (2)
Buckeye	Aesculus octandra, glabra (2)
Butternut	Juglanscinerea
Incense cedar*	Libocedrus decurrens
Western red cedar*	Thuja plicata
Cottonwood	Populus balsamifera, deltoides, sargentii, heterophylla
White fir	Abies concolor, grandis, amabilis, lasiocarpa, magnifica
Hackberry	Celtis occidentalis, laevigata (2)
Eastern hemlock	Tsuga canadensis
Holly	Ilex Opaca
Soft maple	Acer saccharinum
Lodgepole pine	Pinus contorta
Idaho white pine	Pinus monticola
Northern white pine	Pinus strobus
Ponderosa pine	Pinus Ponderosa, pinus jeffreyi (Jeffrey pine)
Sugar pine	Pinus lambertiana
Engelmann spruce	Picea engelmannii

(Note 1: The common and scientific names of species used conform to the American Lumber Standards nomenclature and in most cases to U. S. Department of Agriculture Handbook No. 41, "Check List of Native and Naturalized Trees of the United States (including Alaska)," by Elbert L. Little. These publications can be obtained from the Superintendent of Documents, Washington, D. C. 20225.

Note 2: This species is commonly associated with others of the same genus under American Lumber Standards nomenclature, but no strength tests have been made on it at the Forest Products Laboratory.

Note 3: Included under soft maple in American Lumber Standards nomenclature.

Note 4: This species is not included under this common name in American Lumber Standards nomenclature, but strength data are available and it is accordingly included in this classification.)

Table 2
Dimensions for Type I Stepladder

	Length 12 Feet and Less		Length 14 and 16 Feet		Length 18 and 20 Feet	
	Thickness (Inches)	Depth (Inches)	Thickness (Inches)	Depth (Inches)	Thickness (Inches)	Depth (Inches)
Side Rails	25/32	3 1/4	25/32	3 1/2	1 1/16	3 1/2
Back Legs	25/32	2 1/4	25/32	2 5/8	1 1/16	2 1/4
Steps	25/32	3 5/8	25/32	4 1/4	25/32	4 1/4
Tops	25/32	5 1/2	25/32	5 1/2	25/32	5 1/2

Table 3
Dimensions for Type II Stepladder

	Length 3 to 8 Feet		Length 10 Feet		Length 12 Feet	
	Thickness (Inch)	Depth (Inches)	Thickness (Inch)	Depth (Inches)	Thickness (Inch)	Depth (Inches)
Side Rails	3/4	2 5/8	3/4	2 5/8	3/4	3
Back Legs	3/4	1 5/8	3/4	1 3/4	3/4	2
Steps	3/4	3 1/2	3/4	3 1/2	3/4	3 5/8
Top	3/4	5	3/4	5	3/4	5

Table 4
Dimensions of Side Rails for Two-Section Ladder

Size of Ladder Overall Length (Feet)	Rail		
	Thickness (Inches)		Depth (Inches)
For Group 2 Woods			
16	1 1/16	X	2
20	1 1/16	X	2 1/4
24	1 1/16	X	2 1/2
28	1 1/16	X	2 3/4
32	1 1/8	X	2 3/4
36	1 5/16	X	2 3/4
40	1 5/16	X	2 3/4
44	1 5/16	X	3
For Group 3 Woods			
16	1 1/8	X	2
20	1 1/8	X	2 1/4
24	1 1/8	X	2 1/2
28	1 1/8	X	2 3/4
32	1 5/16	X	2 3/4
36	1 5/16	X	3
40	1 3/8	X	3
44	1 3/8	X	3 1/4
48-52	1 3/8	X	3 3/4
56-60	1 5/8	X	3 3/4

Note: See 3.2(1) "c" for size designation.

(This Appendix is not a part of the Iowa Employment Safety Rule for Portable Wood Ladders but is to be used for information purposes only.)

The use of the formula in 3.4(1) "b" involves the weight of the ladder involved in the calculation. For convenience in estimating ladder weights, the average densities of the species listed in Table 1 are given in Table A1 for a moisture content of 15 percent. Involved also in the weight of an extension ladder are certain items of hardware such as locks, guide irons, and the bolts and rivets attaching these to the ladder. Other items of hardware which are attached at the ends of the ladder, such as safety feet and hooks, do not contribute to the bending of the ladder; their weight, therefore, need not be included. The practice among different manufacturers with respect to hardware varies considerably; no single value of hardware weight, therefore, can be given. For purposes of calculation, a weight in the range of four to eight pounds, with an average of about six pounds, may be used. Where it is known that specific items of hardware are to be used, so that their weights may be measured or estimated, the weights so determined should be used.

Table A1
Average Densities of Various Species of Wood for Use in Ladders

Group 1			
Species	Density (lbs./ft. ³)	Species	Density (lbs./ft. ³)
White ash	41	Hard maple	42
Beech	43	Red maple	36
Birch	44	Red oak	43
Rock elm	43	White oak	46
Hickory	50	Pecan	46
Locust	47	Persimmon	50
Group 2			
Douglas fir (Coast region)	34	Southern yellow pine	37
Western larch	38		
Group 3			
Red alder	28	West Coast hemlock	30
Oregon ash	38	Magnolia	35
Pumpkin ash	37	Oregon maple	34
Alaska cedar	31	Norway pine	31
Port Orford cedar	30	Poplar	28
Cucumber	34	Redwood	25
Cypress	32	Eastern spruce	28
Soft elm	36	Sitka spruce	28
Douglas fir (Rocky Mountain type)	30	Sycamore	35
Noble fir	27	Tamarack	37
Gum	34	Tupelo	35
Group 4			
Aspen	27	Eastern hemlock	28
Basswood	25	Holly	39
Buckeye	25	Soft maple	33
Butternut	27	Ledgepole pine	29
Incense cedar	25	Idaho white pine	28
Western red cedar	23	Northern white pine	25
Black cottonwood	24	Ponderosa pine	28
White fir	26	Sugar pine	26
Hackberry	37		

In order for an effective safety program to be developed, these rules should also serve as a basis for purchase requirements and for instruction in personnel training such as safety practices, manuals and posters.

This rule is intended to implement Chapter 88A of the Code of Iowa (as provided above).

[Effective January 22, 1969]

[Filed without approval of the Departmental Rules Review Committee or the Attorney General.]

HEALTH DEPARTMENT

Pursuant to authority of section 135.11(17) of the Code, the following rule is adopted.

[Filed July 8, 1969]

TITLE XVII CHAPTER 2 REPORTS

2.1(144) T.XVIII Reports by Funeral Directors and Embalmers. Each funeral director and embalmer licensed in the state of Iowa shall submit to the state

registrar (the commissioner of public health) on the first workday of each month a report of persons deceased in Iowa for whom said funeral director and embalmer had provided professional services during the preceding month. The report shall be made on a form supplied by the state registrar and shall include the name of the deceased and the date and place of death.

This rule is intended to implement section 144.29 of the Code.

[Effective August 7, 1969]

HEALTH DEPARTMENT

(continued)

Pursuant to the authority contained in Section 135C.14 of the Code, the rules appearing in 1966 I.D.R. 207-209 are amended as follows:

[Filed July 8, 1969]

The words and figures "DIVISION IV Custodial Homes:" found at 1966 I.D.R. 207 are hereby stricken and

"CHAPTER 4 CUSTODIAL HOMES"

is substituted in lieu thereof.

What now appears as "Section 7. Drug Storage" at 1966 I.D.R. 209 is hereby amended by striking therefrom the word "section" in the title thereof and by substituting in lieu thereof the word "Rule".

What now appears at 1966 I.D.R. 209 as "Section 7. Drug Storage" is hereby amended by adding thereto following the existing provisions, the following new provisions:

7.8 Poisons and prescription medications for external use shall be kept in a locked cabinet and separate from other medications.

7.9 Drug Labeling

a. All medications prescribed shall be labeled. The label of each patient's individual medication container shall clearly indicate the patient's full name, name of the medical practitioner, prescription number, name and strength of

drug, dosage, directions for use, and date of issue, name, address and telephone number of the pharmacy or medical practitioner issuing the drug.

b. Medication containers having soiled, damaged, illegible, or makeshift labels shall be returned to the issuing pharmacy or medical practitioner for relabeling or disposal. Medications in unlabeled containers shall be destroyed.

c. The medications of each patient shall be kept or stored in the originally received containers.

7.10 The State Board of Pharmacy Examiners, State Capitol Building, Des Moines, Iowa shall be notified for instruction concerning disposal of unused narcotics prescribed for patients who have deceased.

7.11 Bulk supplies of prescription drugs shall not be kept in a custodial home unless a licensed pharmacy is established in the custodial home under the direct supervision and control of a pharmacist.

7.12 A responsible person designated by the owner or administrator shall administer all medications. This person shall have been trained to perform this task and she shall have knowledge of the medications as to the purpose for which they are given, recommended dosage, contraindications and reactions. The work of this person shall be reviewed monthly

by a licensed nurse or medical practitioner, acting as a consultant, and a written record shall be kept of the review. The person assigned to the responsibility of medication administration must complete the procedure by personally preparing a unit dose, administering and recording the medication given. Where the unit dose is prepared by a pharmacist or under the direct supervision of a pharmacist, the medication may be administered and recorded by another person. A written record of medications administered shall be made by the person administering the medication. Said recording of medications may be transferred to the resident's permanent file by another individual, but the original shall be kept

on file for no less than thirty days. The actual act of swallowing oral medications shall be observed personally by the individual responsible for administering medications. Any unusual drug reaction shall be reported to the medical practitioner who prescribed the drug at once.

7.13 Medications not specifically limited as to time or number of doses when ordered shall be automatically stopped in accordance with a written policy developed by the custodial home and the attending medical practitioner.

These rules are intended to implement section 135C.14 of the Code.

[Effective August 7, 1969]

HIGHWAY COMMISSION

Pursuant to Chapter 285, 62nd General Assembly, and Chapter 17A of the Code, amended by Chapter 92, 62nd General Assembly, Rule 2.3(1) "g", page 11, I.D.R.

Supplement of July, 1969, is rescinded.

[Filed October 14, 1969]

[Effective November 13, 1969]

PUBLIC INSTRUCTION BOARD

Pursuant to authority conferred by section 257.10(11), Code of Iowa, and for the purpose of implementing said section, section 14.24(6) of the rules relating to certification for supervisory or monitorial services, appearing on page 42 of the January 1968 Supplement to Iowa Departmental Rules is amended by striking

therefrom the words, "The applicant shall have completed at least sixty semester hours of college preparation at a recognized institution of higher learning."

[Filed July 8, 1969]

[Effective August 7, 1969]

PUBLIC INSTRUCTION BOARD

(continued)

Pursuant to authority conferred by sections 258.2 and 258.4, Code of Iowa, and for the purpose of implementing Chapter 258, Code of Iowa, Title XIV of the Rules of the state Department of Public Instruction, which appears at pages 452 to 508 of the 1966 I.D.R., and consists of chapter 26 to 34, inclusive, is hereby rescinded and the following adopted in lieu thereof:

[Filed September 18, 1969]

TITLE XIV
VOCATIONAL EDUCATION
CHAPTER 26
VOCATIONAL EDUCATION
PROGRAMS

26.1(258) Standards for vocational education. Vocational education programs

carried on under the provisions of Chapter 258, Code of Iowa, shall be governed by and administered pursuant to the Acts of Congress accepted by said chapter, the provisions of said chapter, duly-adopted rules of the federal agencies involved and the current federal-state contracts or plans approved pursuant to said statutes and rules.

Chapters 27 to 34 *Reserved for future use.*

[Effective October 18, 1969]

PUBLIC INSTRUCTION BOARD

(continued)

Pursuant to authority conferred by section 257.10(11), Code of Iowa, and for the purpose of implementing same, section 19.17(257), Rules of the Department of Public Instruction, which appears at pages 39 and 40 of the January 1968 Supplement to 1966 I.D.R., is amended as follows:

[Filed September 18, 1969]

ITEM 1. Section 19.17(1), Rules of the Department of Public Instruction, which appears at page 39 of January 1968 Supplement to 1966 I.D.R., is amended by inserting immediately after the word "For" in line one (1) the words, "indorsement or".

Further amend said section by striking from lines five (5) and six (6) the words, "indorsed for teaching at the elementary-school level".

ITEM 2. Section 19.17(2), Rules of the Department of Public Instruction, which appears at page 40 of January 1968 Supplement to 1966 I.D.R., is amended by inserting immediately after the word "For" in line one (1) the words "indorsement or".

Further amend said section by striking from lines five (5) and six (6) the words, "indorsed for teaching at the secondary school level".

[Effective October 18, 1969]

PUBLIC INSTRUCTION BOARD

(continued)

Pursuant to authority conferred by section 257.10(11), Code of Iowa, and for the purpose of implementing said section, section 14.9(257), Rules of the Department of Public Instruction, which appears at pages 41 and 42 of the January 1968 Supplement to 1966 I.D.R., is amended as follows:

[Filed September 18, 1969]

ITEM 1. Section 14.9(5), Rules of the Department of Public Instruction, is amended by striking from lines eleven (11), twelve (12), and thirteen (13) of paragraph "f" on page 42 of the January 1968 Supplement to 1966 I.D.R., the words, "program of graduate study of thirty or more semester hours in the area of clinical reading" and inserting in lieu thereof the words, "master's degree program in clinical reading at a recognized institution".

ITEM 2. Section 14.9(5), Rules of the Department of Public Instruction, is

amended by inserting after paragraph "g" on page 42 of the January 1968 Supplement to 1966 I.D.R., the following new paragraph:

"h. *Reading specialist.* For authorization by indorsement for services as a reading specialist in kindergarten and grades one through fourteen, the applicant shall have met the requirements for a professional certificate indorsed for either elementary school teaching or secondary school teaching, secured a master's degree from a recognized institution, and have completed an approved graduate program in reading including preparation in the supervision of reading. In addition, such applicant shall present evidence of at least four years of successful teaching experience; at least one of which shall have included the teaching of reading as a significant part of his responsibility."

[Effective October 18, 1969]

PUBLIC INSTRUCTION DEPARTMENT

Pursuant to authority conferred by chapter 259A, Code 1966, and for the purpose of implementing chapter 259A, Code 1966, as amended by chapter 231 (H.F. 217), Acts of the Sixty-second General Assembly, rules appearing at 1966 I.D.R. 403, relating to High School Equivalency Certificates, are amended as follows:

[Filed September 18, 1969]

ITEM 1. Section 8.4(259A), Rules of the Department of Public Instruction, 1966 I.D.R. 403, is amended by striking from lines 4 through 6 the words "except that test results dated over one year prior to the date of application for the High School Equivalency Certificate shall not be considered".

ITEM 2. Section 8.5(259A), Date of re-test, rules of the Department of Public

Instruction, 1966 I.D.R. 403, is hereby rescinded.

[Effective October 18, 1969]

PUBLIC SAFETY DEPARTMENT

Pursuant to authority of Chapter 112, Section 11, subsection 1, Acts of the 62nd General Assembly, the following rule is adopted.

[Filed July 22, 1969]

TITLE VIII

IOWA LAW ENFORCEMENT ACADEMY

CHAPTER 2

MINIMUM BASIC RECRUIT CURRICULUM FOR APPROVED IOWA LAW ENFORCEMENT TRAINING SCHOOLS

2.1(Ch112, 62GA) Minimum Recruit Curriculum for Law Enforcement Officers. The basic recruit law enforcement course of study in an accredited law enforcement training school shall consist of no less than one hundred and sixty hours of training, which training must be completed within an eight-week period and no law enforcement training facility will be approved by the Iowa law enforcement academy council unless it meets the minimum requirements of basic recruit study as set forth in the following curriculum.

2.1(1) *Patrol and Related Subjects* 47 hours

- a. Patrol
 - (1) Mobile, foot or beat
 - (2) Patrolling techniques and their effect on crime prevention
- b. Handling of the juvenile delinquent
- c. Handling of intoxicated persons
- d. Handling of disturbed and abnormal persons
- e. Handling of domestic situations
- f. Communications—radio and teletype
- g. National Crime Information Center
- h. Police community relations
 - (1) Law enforcement and the news media
 - (2) Law enforcement and minority groups
 - (3) Creating a favorable public image
 - (4) Human relations and applied psychology

- i. Traffic and traffic arrests
 - (1) Iowa motor vehicle laws
 - (2) Traffic safety
 - (3) Directing of traffic in normal and abnormal situations
 - (4) Calculating speeds
 - (5) Licensing of drivers
 - (6) The intoxicated driver
 - (7) Implied consent law
- j. Accident investigation
 - (1) Causes of accidents
 - (2) Hit and run accidents
 - (3) Accident reports
 - (4) Use of accident records
 - (5) Financial responsibility
- k. Impounding motor vehicles

2.1(2) *Services of other agencies* 9 hours

- a. Iowa bureau of criminal investigation
- b. Iowa highway safety patrol
- c. Federal bureau of investigation
- d. U.S. Treasury department
- e. U.S. secret service
- f. Iowa department of health—Duties of medical examiner and dead body examination
- g. Iowa department of social services—Probation and parole

2.1(3) *Firearms and related subjects* 30 hours

a. Firearms

Time should be spent in the classroom discussing the safe handling, proper grip and sight alignment of firearms prior to the actual practice on the shooting range. There should be a demonstration on the range showing the proper use and handling of weapons made available to officers by their department. (Example: riot gun, gas gun, etc.) The remainder of the time (suggest sixteen hours) should be devoted to safe handling and target shooting with the officer's personal service revolver. A minimum score of sixty, out of a possible one hundred, should be attained by each student (supervised, timed, and on an appropriate target) in order to qualify and be certified in firearms training.

b. Defensive tactics, disarming methods, and the use of restraining devices

c. Handling of civil disturbances

(1) Classroom discussion of mob and riot control

(2) Field practice for control of mobs and riots

2.1(4) Principals of investigation and investigative procedures 39 hours

a. Investigative note taking

b. Report writing

c. Narcotics identification and investigation

d. Auto theft investigation

e. Arson, bombing and bomb threat investigation

f. Homicide investigation

g. Sex crime investigation

h. Burglary investigation—Should include discussion or demonstration of types of locks and safes, and how they operate

i. Surveillance

j. Development of informants

k. Fingerprints

(1) History and use in law enforcement

(2) Proper procedure for taking and classifying prints

(3) Developing and lifting latent fingerprints

l. Photography

(1) Practical use of cameras

(2) Explanation of developing and processing films and prints

(3) Document, tire tread and crime scene photography

(4) Photographing of prisoners

m. Collection, preservation and handling of evidence

n. Crime scene search—Classroom discussion, practical field problem, and critique. To include such things as sketching, diagraming and how to make a plaster cast.

2.1(5) Law, criminal procedure, courts and related subjects 31 hours

a. Constitution, Bill of Rights, and Civil Rights

b. Criminal Code of Iowa

c. Techniques and mechanics of arrest

d. Establishing probable cause

e. Procedural handling of felony and misdemeanor violations

f. Obtaining and serving arrest warrants

g. Interview, interrogation and confession

h. Search and seizure

(1) Obtaining search warrants

(2) Search of persons and property

(3) Identification and handling of seized property

i. Preparation of cases for court

j. Testifying

k. Courtroom procedures

l. Laws and rules of evidence

m. Moot court

(1) Pretrial discussion of practical problem

(2) Student's testimony and presentation of evidence

(3) Critique—with the presiding judge, defense attorneys, prosecuting attorneys, students and instructors

2.1(6) Review and examination 4 hours

2.1(7) Subjects not covered in the one hundred and sixty-hour minimum basic curriculum as outlined above, but suggested to be included in the recruit training program, are as follows:

a. Orientation and indoctrination to include introduction to the training school, explanation of the rules and regulations of the school, registration and fingerprinting of each officer

b. Classroom note taking and study habits

c. Defensive driving training

d. First-aid course

2.2(Ch112, 62GA) More extensive recruit training curriculum not prohibited. While no law enforcement training facility will be approved by the Iowa Law Enforcement Academy Council which does not meet the minimum requirements of this basic recruit curriculum, this in no way limits or restricts any law enforcement training facility in instituting a basic recruit curriculum that surpasses the curriculum established pursuant to this Act.

This rule is intended to implement Chapter 112, Acts of the 62nd General Assembly.

[Effective August 21, 1969]

PUBLIC SAFETY DEPARTMENT

(continued)

Pursuant to authority granted in Section 100.35 of the Code, Fire Safety Rules and Regulations pertaining to Schools and Colleges are amended as follows:

[Filed October 17, 1969]

FIRE MARSHAL

ITEM 1.

Section 1, subrule 1.5, page 600, is amended by adding at the end thereof the words "and before any construction of new or additional installation is undertaken, drawings and specifications thereof made to scale shall be submitted to the state fire marshal, in duplicate, for his approval. Within a reasonable time (ten days) after receipt of the drawings and specifications, the state fire marshal shall cause the same to be examined and if he finds that they conform as submitted or modified with the requirements of this division, he shall forthwith signify his approval of the application either by endorsement thereon or by attachment thereto, retain one copy for his files and return to the applicant the other copy plus any additional copies submitted by the applicant. If the drawings and specifications do not conform with applicable requirements of this division as aforesaid, he shall within the time aforesaid notify the applicant accordingly".

ITEM 2.

Section 2, page 600, is amended by adding the following new subrules:

2.10 Interior finish material. Interior finish material shall be classified in accordance with the method of tests of surface burning characteristics of building material National Fire Protection Association Standard No. 255, Test Methods, Surface Burning—Building Materials, 1969. Classification of interior finish material shall be in accordance with tests made under conditions simulating actual installations, provided that the state fire marshal may by rule establish the classification of any material on which a rating by standard test is not available. Interior finish material shall be grouped in the following classes in accordance with their flame spread and related characteristics:

Class A. Interior finish flame spread 0-25.

Class B. Interior finish flame spread 25-75.

Class C. Interior finish flame spread 75-200.

2.11 Portable classroom building. A building designed and constructed so that it can be disassembled and transported to another location, or transported to another location without disassembling.

ITEM 3.

Section 3, subrule 3.7, page 601, is amended as follows:

By striking from line 4 the words "from a classroom door", and inserting in lieu thereof the words "from any point".

By striking from line 5 the words "one hundred", and inserting in lieu thereof the words "one hundred fifty".

By striking from lines 7 and 8 the words "one hundred fifty", and inserting in lieu thereof the words "two hundred".

Section 3, subrule 3.8, page 601, is amended as follows:

By striking from lines 1 and 2 the words "one hundred", and inserting in lieu thereof the word "fifty".

By striking from line 3 the words "two thousand", and inserting in lieu thereof the words "one thousand".

Section 3, subrule 3.9, page 601, is amended by adding at the end thereof the words "In one-room classroom buildings the second exit shall be a door remote from the door used for normal entrance."

ITEM 4.

Section 4, subrule 4.7, page 601, is amended as follows:

By striking from lines 8 and 9 the words, "double-swing".

By adding at the end thereof the words "Underwriters' Laboratories listed electromagnetic holders may be used to hold these doors open provided they are hooked into the fire alarm system and a smoke detector is located at a strategic point near the doors."

ITEM 5.

Section 5, subrule 5.5, page 602, is amended by adding at the end thereof the words "Underwriters' Laboratories listed electromagnetic holders may be used to hold these doors open provided they are hooked into the fire alarm system and a smoke detector is located at a strategic point near the doors."

Section 5, subrule 5.6“a”, page 602, is amended by adding at the end thereof the words “Doors must be a minimum of one and three-fourths-inch solid core wood.”

Section 5, page 602, is further amended by adding the following new subrule:

5.9 Doors from classrooms to corridors may have closeable louvers up to twenty-four inches above the floor. No other louvers or openable transoms shall be permitted in corridor partitions.

ITEM 6.

Section 8, subrule 8.1, page 602, is amended by striking from lines 2 and 3 the word “ceiling”.

ITEM 7.

Section 9, subrule 9.1, page 603, is amended by striking from lines 2 and 3 the words “Uniform Building Code, 1964 Edition of the International Conference of Building Officials”, and inserting in lieu thereof the words “National Fire Protection Association Pamphlet No. 220, Standard Types of Building Construction, 1961.”

Section 9, subrule 9.3, page 603, is amended by striking paragraph b., and inserting in lieu thereof the following:

“b. One-room portable classroom buildings may be of lesser construction provided the interior finish of the classroom complies with subrules 8.2 and 8.3 as use requires. Only noncombustible types of insulation may be used in such instances and each building shall be a minimum of twenty feet from another building.”

Section 9, subrule 9.3, page 603, is amended by striking paragraph c., and inserting in lieu thereof the following:

“c. Two-story buildings may be constructed of fire-resistive or protected noncombustible materials throughout, or the first story may be constructed of fire-resistive or protected noncombustible materials with the second story having either heavy timber or noncombustible materials.”

Section 9, subrule 9.3, page 603, is further amended by adding the following paragraph:

“d. Buildings of more than two stories shall be fire-resistive throughout.”

Section 9, subrule 9.5, page 603, is amended by adding at the end thereof the words “except in portable one-room

classroom buildings an Underwriters’ Laboratories approved fire-retardant paint may be used”.

Section 9, subrule 9.6, page 603, is amended by striking the entire subrule and inserting in lieu thereof the following:

“9.6 Portable classroom buildings shall maintain a minimum of twenty feet distance from another building if complying with 9.3“b”. One-room portable classroom buildings located twenty feet or less between adjacent walls shall have not less than a one-hour, fire-rated separation. All portable classroom buildings with raised floors shall be skirted to the ground with material equal to the siding of the building.”

Section 9, subrule 9.7, page 603, is amended by striking the entire subrule and inserting in lieu thereof the following:

“9.7 Boiler rooms, furnace rooms or fuel rooms which have no stories located above may be constructed of fire-resistive, noncombustible, protected heavy timber or protected ordinary materials.”

Section 9, page 603, is amended by adding the following new subrule:

“9.8 Boiler rooms, furnace rooms or fuel rooms with building above shall be of two-hour, fire-resistive construction.”

ITEM 8.

Section 10, subrule 10.1, page 603, is amended as follows:

By adding after the word door in line 6, thereof the words “within the building”.

By adding at the end thereof the words “One-room classroom buildings placed in a complex of other classrooms shall be connected to the central alarm system.”

ITEM 9.

Section 14, subrule 14.2, page 604, is amended by striking from line 1 the words “NFPA Bulletin”, and inserting in lieu thereof the words “National Fire Protection Association Standard No. 10, Installation of Portable Fire Extinguishers, 1969”.

ITEM 10.

Section 15, page 604, is amended by striking the catchword “Basements”, and inserting in lieu thereof the catchwords “Basement, Underground and Windowless Educational Buildings”.

Section 15, page 604, is further amended by adding the following new subrules:

"15.3 After the effective date of this rule, in new construction only, underground or windowless educational buildings shall be provided with complete approved, automatic sprinkler systems."

"15.4 After the effective date of this rule, in new construction only, underground or windowless educational buildings shall have approved automatic smoke venting facilities in addition to automatic sprinkler protection."

"15.5 After the effective date of this rule, in new construction only, underground or windowless educational buildings for which no natural lighting is provided shall be provided with an approved type emergency exit lighting system."

"15.6 After the effective date of this rule, in new construction only, where required exit from underground structures involves upward travel, such as ascending stairs or ramp, such upward exits shall be cut off from main floor areas. If the area contains any combustible contents or combustible interior finish, it shall be provided with outside vented smoke traps or other means to prevent the exit serving as flues for smoke from any fire in the area served by the exits, thereby making the exit impassable."

"15.7 After the effective date of this rule, in new construction only, every windowless building shall be provided with outside access panels on each floor level, designed for fire department access from ladders for purposes of ventilation and rescue of trapped occupants."

ITEM 11.

Section 16, page 604, is amended by adding the following new subrules:

"16.6 *Decorative materials.*

a. No furnishings, decorations, wall coverings, paints, etc. shall be used which are of a highly flammable character or which in the amounts used will endanger egress due to rapid spread of fire or formation of heavy smoke or toxic gases."

b. Highly flammable finishes such as lacquer and shellac are not permitted.

c. Draperies, curtains, loosely attached wall coverings, cloth hangings and similar materials shall be noncombustible or flameproof in corridor exit ways and assembly occupancies. In other areas up to ten percent of the wall area may have combustible coverings and hangings."

"16.7 Spray finishing operations shall not be conducted in a school building except in a room designed for the purpose, protected with an approved automatic extinguishing system, and separated vertically and horizontally from such occupancies by construction having not less than two-hour fire resistance. National Fire Protection Association Standard No. 33, Spray Finishing, 1969, shall be applicable for construction and operation of all paint spray booths."

ITEM 12.

Section 19, subrule 19.7, page 605, is amended as follows:

By striking from line 4 the words "from a classroom door", and inserting in lieu thereof the words "from any point".

By striking from line 5 the words "one hundred", and inserting in lieu thereof the words "one hundred fifty".

By striking from lines 7 and 8 the words "one hundred fifty", and inserting in lieu thereof the words "two hundred".

Section 19, subrule 19.8, page 605, is amended as follows:

By striking from lines 1 and 2 the words "one hundred", and inserting in lieu thereof the word "fifty".

By striking from line 3 the words "two thousand", and inserting in lieu thereof the words "one thousand".

ITEM 13.

Section 20, subrule 20.6, pages 605 and 606, is amended as follows:

By striking from lines 8 and 9 the words ", double-swing".

By adding at the end thereof the words "Underwriters' Laboratories listed electromagnetic holders may be used to hold these doors open provided they are hooked into the fire alarm system and a smoke detector is located at a strategic point near the doors."

ITEM 14.

Section 21, subrule 21.3, page 606, is amended by adding at the end thereof the words "Underwriters' Laboratories listed electromagnetic holders may be used to hold these doors open provided they are hooked into the fire alarm system and a smoke detector is located at a strategic point near the doors."

Section 21, subrule 21.4 "a.", page 606, is amended by adding at the end thereof the words "Doors must be a minimum of

one and three-fourths inch solid core wood."

Section 21, page 606, is further amended by adding the following new subrule:

"21.(7) Doors from classrooms to corridors may have closeable louvers up to twenty-four inches above the floor. No other louvers or openable transoms shall be permitted in corridor partitions.

ITEM 15.

Section 23, subrule 23.1, page 606, is amended by striking from lines 2 and 3 thereof the word "ceiling".

ITEM 16.

Section 24, subrule 24.1, page 606, is amended by striking from lines 2 and 3 the words "Uniform Building Code, 1964 Edition of the International Conference of Building Officials", and inserting in lieu thereof the words "National Fire Protection Association Pamphlet No. 220, Standard Types of Building Construction, 1961."

Section 24, subrule 24.3, page 606, is amended by striking paragraph b., and inserting in lieu thereof the following:

"b. One-room portable classroom buildings may be of lesser construction provided the interior finish of the classroom complies with subrules 8.2 and 8.3 as use requires. Only noncombustible types of insulation may be used in such instances and each building shall be a minimum of twenty feet from another building."

Section 24, subrule 24.3, page 606, is amended by striking paragraph c., and inserting in lieu thereof the following:

"c. Two-story buildings may be constructed of fire-resistive or protected noncombustible materials throughout, or the first story may be constructed of fire-resistive or protected noncombustible materials with the second story having either heavy timber or noncombustible materials."

Section 24, subrule 24.3, page 606, is further amended by adding the following new paragraph:

"d. Buildings of more than two stories shall be fire-resistive throughout."

Section 24, subrule 24.5, page 606, is amended by adding at the end thereof the words "except in portable one-room classroom buildings an Underwriters' Laboratories approved fire-retardant paint may be used".

Section 24, page 606, is amended by striking subrule 24.6, and inserting in lieu thereof the following:

"24.6 Portable classroom buildings shall maintain a minimum of twenty feet distance from another building if complying with 9.3 "b." One-room portable classroom buildings located twenty feet or less between adjacent walls shall have not less than a one-hour, fire-rated separation. All portable classroom buildings with raised floors shall be skirted to the ground with material equal to the siding of the building."

Section 24, subrule 24.7, page 606, is amended by striking the entire subrule and inserting in lieu thereof the following:

"24.7 Boiler rooms, furnace rooms or fuel rooms which have no stories located above may be constructed of fire-resistive, noncombustible, protected heavy timber or protected ordinary materials."

Section 24, page 606, is further amended by adding the following new subrule:

"24.8 Boiler rooms, furnace rooms or fuel rooms with building above shall be of two-hour, fire-resistive construction."

ITEM 17.

Section 25, subrule 25.1, page 606, is amended by striking out the entire subrule and inserting in lieu thereof the following subrule:

"25.1 All schools having two or more classrooms shall be equipped with a fire alarm system. Alarm stations shall be provided on each floor and so located that the alarm station is not more than seventy-five feet from any classroom door within the building. Horns or bells that provide a distinctive sound different from other bell systems shall be provided that will give audible warning to all occupants of the building in case of a fire or other emergency. A test device shall be provided for the purpose of conducting fire drills and tests of the alarm system. One-room classroom buildings placed in a complex of other classrooms shall be connected to the central alarm system."

Section 25, page 606, is further amended by adding the following subrules:

"25.2 Underwriters' laboratory equipment and component parts shall be used in the installation of the fire alarm system. The electrical energy for the fire alarm system shall be on a separate circuit and shall be taken off the utility

service to the school building ahead of the entrance disconnect."

"25.3 Whenever the fire marshal determines it advisable, he may require that the fire alarm system be extended or designed to provide automatic fire detection devices in unsupervised areas, boiler rooms, storerooms or shop areas."

ITEM 18.

Section 29, subrule 29.2, page 607, is amended by striking from line 1 the words "NFPA Bulletin", and inserting in lieu thereof the words "National Fire Protection Association Standard No. 10, Installation of Portable Fire Extinguishers, 1969".

ITEM 19.

Section 31, page 607, is amended by adding the following new subrules:

"31.7 *Decorative materials.*

a. No furnishings, decorations, wall coverings, paints, etc. shall be used which are of a highly flammable character or which in the amounts used will endanger egress due to rapid spread of fire or formation of heavy smoke or toxic gases.

b. Highly flammable finishes such as lacquer and shellac are not permitted.

c. Draperies, curtains, loosely attached wall coverings, cloth hangings and similar materials shall be noncombustible or flameproof in corridor exit ways and assembly occupancies. In other areas up to ten percent of the wall area may have combustible coverings and hangings."

"31.8 Spray finishing operations shall not be conducted in a school building except in a room designed for the purpose, protected with an approved automatic extinguishing system, and separated vertically and horizontally from such occupancies by construction having not less than two-hour fire resistance. National Fire Protection Association Standard No. 33, Spray Finishing, 1969, shall be applicable for construction and operation of all paint spray booths."

ITEM 20.

Section 34, subrule 34.7, page 608, is amended as follows:

By striking from line 4 the words "from a classroom door", and inserting in lieu thereof the words "from any point".

By striking from line 5 the words "one hundred", and inserting in lieu thereof the words "one hundred fifty".

By striking from lines 7 and 8 the words "one hundred fifty", and inserting in lieu thereof the words "two hundred".

Section 34, subrule 34.8, page 608, is amended as follows:

By striking from lines 1 and 2 the words "one hundred", and inserting in lieu thereof the word "fifty".

By striking from line 3 the words "two thousand", and inserting in lieu thereof the words "one thousand".

ITEM 21.

Section 35, subrule 35.6, page 609, is amended as follows:

By striking from lines 8 and 9 the words ", double-swing".

By adding at the end thereof the words "Underwriters' Laboratories listed electromagnetic holders may be used to hold these doors open provided they are hooked into the fire alarm system and a smoke detector is located at a strategic point near the doors."

ITEM 22.

Section 36, subrule 36.5, page 609, is amended by adding at the end thereof the words "Underwriters' Laboratories listed electromagnetic holders may be used to hold these doors open provided they are hooked into the fire alarm system and a smoke detector is located at a strategic point near the doors."

Section 36, subrule 36.6 "a.", page 609, is amended by adding at the end thereof the words "Doors must be a minimum of one and three-fourths inch solid core wood."

Section 36, page 609, is further amended by adding the following new subrule:

"36.9 Doors from classrooms to corridors may have closeable louvers up to twenty-four inches above the floor. No other louvers or openable transoms shall be permitted in corridor partitions."

ITEM 23.

Section 39, subrule 39.1, page 610, is amended by striking from line 3 the word "ceiling".

ITEM 24.

Section 41, page 610, is amended by striking out subrules 41.1 and 41.2 and inserting in lieu thereof the following subrules:

"41.1 All schools having two or more classrooms shall be equipped with a fire

alarm system. Alarm stations shall be provided on each floor and so located that the alarm station is not more than seventy-five feet from any classroom door within the building. Horns or bells that provide a distinctive sound different from other bell systems shall be provided that will give audible warning to all occupants of the building in case of a fire or other emergency. A test device shall be provided for the purpose of conducting fire drills and tests of the alarm system. One-room classroom buildings placed in a complex of other classrooms shall be connected to the central alarm system.

41.2 Underwriters' laboratory equipment and component parts shall be used in the installation of the fire alarm system. The electrical energy for the fire alarm system shall be on a separate circuit and shall be taken off the utility service to the school building ahead of the entrance disconnect.

41.3 Whenever the fire marshal determines it advisable, he may require that the fire alarm system be extended or designed to provide automatic fire detection devices in unsupervised areas, boiler rooms, storerooms or shop areas."

ITEM 25.

Section 45, subrule 45.2, page 610, is amended by striking from line 1 the words "NFPA Bulletin", and inserting in lieu thereof the words "National Fire Protection Association Standard No. 10, Installation of Portable Fire Extinguishers, 1969".

ITEM 26.

Section 30, page 607, is amended as follows:

By striking the catchword "*Basements*", and inserting in lieu thereof the catchwords "*Basement, Underground and Windowless Educational Buildings*".

By adding the following new subrules:

"30.2 Underground or windowless educational buildings shall be provided with complete approved, automatic sprinkler systems.

30.3 Underground or windowless educational buildings shall have approved automatic smoke venting facilities in addition to automatic sprinkler protection.

30.4 Underground or windowless educational buildings for which no natural lighting is provided shall be provided with an approved type emergency exit lighting system.

30.5 Where required exit from underground structures involves upward travel, such as ascending stairs or ramp, such upward exits shall be cut off from main floor areas. If the area contains any combustible contents or combustible interior finish, it shall be provided with outside vented smoke traps or other means to prevent the exit serving as flues for smoke from any fire in the area served by the exits, thereby making the exit impassable.

30.6 Every windowless building shall be provided with outside access panels on each floor level, designed for fire department access from ladders for purposes of ventilation and rescue of trapped occupants."

ITEM 27.

Section 47, page 611, is amended by adding the following new subrules:

"47.7 *Decorative materials.*

a. No furnishings, decorations, wall coverings, paints, etc. shall be used which are of a highly flammable character or which in amounts used will endanger egress due to rapid spread of fire or formation of heavy smoke or toxic gases.

b. Highly flammable finishes such as lacquer and shellac are not permitted.

c. Draperies, curtains, loosely attached wall coverings, cloth hangings and similar materials shall be noncombustible or flameproof in corridor exit ways and assembly occupancies. In other areas up to ten percent of the wall area may have combustible coverings and hangings.

47.8 Spray finishing operations shall not be conducted in a school building except in a room designed for the purpose, protected with an approved automatic extinguishing system, and separated vertically and horizontally from such occupancies by construction having not less than two-hour fire resistance. National Fire Protection Association Standard No. 33, Spray Finishing, 1969, shall be applicable for construction and operation of all paint spray booths."

[Effective October 17, 1969]

PUBLIC SAFETY DEPARTMENT

(continued)

Pursuant to authority vested in this department by Section 321.4, Code of Iowa, rules and regulations appearing at 1958 I.D.R. 294-295, pertaining to procedures and regulations for motor vehicle equipment approvals, are hereby rescinded. [Filed June 14, 1961]

Pursuant to authority vested in this department by Section 321.4, Code of Iowa, the following rules and regulations pertaining to motor vehicle equipment approvals are hereby adopted:

ADMINISTRATIVE DIVISION

TITLE I

CHAPTER 1

RULES, REGULATIONS, AND SPECIFICATIONS CONCERNING APPROVALS OF MOTOR VEHICLE LIGHTING DEVICES AND OTHER SAFETY EQUIPMENT

[Filed June 30, 1961]

1.1(321)T.1 Submittal procedure and requirements. The following procedures shall be followed when any equipment or device is submitted for approval.

1.1(1) Original equipment.

a. The vehicle manufacturer, * * * 1966 IDR 519 of the lamp or device.

b. With the request the following shall be supplied:

(1) Identification * * * 1966 IDR 519 is designed.

(2) A test report, * * * 1966 IDR 519 issuance of the certificate.

1.1(2) "After-market" equipment.

a. The manufacturer * * * 1966 IDR 519 lamp or device.

b. The following items shall be supplied with the request for approval:

(1) A test report * * * 1966 IDR 519 specified herein.

(2) A set of installation or mounting instructions when applicable.

(3) A set of aiming instructions when applicable.

1.1(3) Safety glass. Requests for * * * 1966 IDR 519 be installed.

1.1(4) Listing of approved motor vehicle equipment. Items of equipment * * * 1966 IDR 519 current specifications.

1.1(5) Specifications for lamps and devices.

a. General

(1) All lamps * * * 1966 IDR 519 statutory requirements.

(2) The interstate * * * 1966 IDR 519 saddle mounts.

(3) The current American Standards Association specifications for safety glass.

(4) Additional specifications * * * 1966 IDR 519 particular device.

b. Model Designation. Each individual * * * 1966 IDR 520 model designations.

c. Identification.

(1) The device or equipment * * * 1966 IDR 520 American Standards Association.

(2) No raised or indented * * * 1966 IDR 520 seal is desirable.

1.1(6) The commissioner may * * * 1966 IDR 520 been requested.

1966 IDR 621

CHAPTER 2

EMERGENCY EQUIPMENT ON PRIVATELY OWNED MOTOR VEHICLES AND THE ISSUANCE OF PERMITS FOR THE USE THEREOF

Pursuant to authority vested in this department by section 321.4, Code of Iowa, the following rules * * * 1966 IDR 622 adopted.

[Filed and indexed November 13, 1962]

2.1(321)T.1 Definitions.

2.1(1) Authorized emergency vehicle defined by section 321.1(26), Code of Iowa.

2.1(2) Ambulance. A vehicle which * * * 1966 IDR 622 public safety.

2.1(3) Rescue vehicle. A vehicle used * * * 1966 IDR 622 bodily welfare.

2.1(4) Disaster vehicle. Same as rescue vehicle.

2.1(5) Emergency equipment. Warning lights, * * * 1966 IDR 622 so equipped.

2.2(321)T.1 Flashing lights. The use of * * * 1966 IDR 622 enumerated vehicles:

2.2(1) Authorized emergency vehicles.

2.2(2) Rural mail carriers * * * 1966 IDR 622 rural mail carrier.

2.2(3) Volunteer firemen * * * 1966 IDR 622 display or use is authorized.

2.3(321)T.I Red lights in the front of motor vehicles. No person shall * * * 1966 I.D.R. 622 emergency vehicles.

2.4(321)T.I Government-owned motor vehicles. All motor vehicles * * * 1966 IDR 622 such vehicles.

2.5(321)T.I Privately owned motor vehicles. All motor vehicles * * * 1966 IDR 622 emergency equipment.

2.5(1) The commissioner is authorized * * * 1966 IDR 622 such designation.

2.5(2) The commissioner may * * * 1966 IDR 622 abuse thereof.

APPROVED BY: _____ ON: _____
Application for Designation of Vehicle as "Authorized Emergency Vehicle"
(Complete in Duplicate)
* * * 1966 IDR 623

2.6(321)T.I Authorization to sheriffs and their deputies. Sheriffs and their authorized * * * 1966 IDR 622 disaster vehicles.

2.7(321)T.I Authorization to chiefs of police and town marshals. Chiefs of police, town * * * 1966 IDR 622 the applicant resides.

2.8(321)T.I Applications which will be considered. Only those vehicles * * * 1966 IDR 622 will be issued.

2.9(321)T.I Types of emergency * * * 1966 IDR 622 lighting devices.

2.10(321) T.I Application form. An application * * * 1966 IDR 622 commissioner's office.

Mayor of _____, Iowa

TITLE II
DEALERS LICENSE DIVISION
CHAPTER 1

"Place of business" shall include the following requirements:

1.1(322)T.II "Designated location" means * * * 1966 IDR 520 reasonable times.

1.2(322)T.II "Adequate facilities shall be * * * 1966 IDR 520 equipment or machinery, etc.

1.3(322)T.II "Reconditioning and repairing" * * * 1966 IDR 520 making these repairs.

1.4(322)T.II "New and used dealer plates." Whenever an Iowa dealer operates a motor vehicle * * * 1966 IDR 520 of new motor vehicles.

1.5(322)T.II "Identification sticker." Whenever an Iowa dealer * * * 1966 IDR 520 provided by law. [Filed December 19, 1956]

1.6(322)T.II Salesmen.

1.6(1) No motor vehicle dealer * * * 1966 IDR 520 vehicle dealer.

1.6(2) No unlicensed person * * * 1966 IDR 520 vehicle dealer. [Filed November 26, 1963; effective December 26, 1963]

(This rule is intended to implement section 322.3, subsection 3.) [Filed with-

out approval or disapproval of the Departmental Rules Review Committee]

TITLE III
DIVISION OF FIRE PROTECTION

The following rules, regulations * * * 1966 IDR 520 provisions of chapter 103, Code of Iowa, 1946, 1950.

CHAPTER 1

CLASS "A" ESCAPES

1.1(103)T.III Metal spiral and tubular slide type and enclosed fireproof stairways. Spiral * * * 1966 IDR 520 is fabricated.

Enclosed * * * 1966 IDR 521 fire marshal.

CHAPTER 2

CLASS "B" ESCAPES

2.1(103)T.III Iron stairway fire escapes—balconies.

2.1(1) Frames. All frames * * * 1966 IDR 521 in stairways.

2.1(2) Posts. All railings * * * 1966 IDR 521 inches above balcony frame.

2.1(3) Rails. Rails of balconies * * * 1966 IDR 521 four inches.

2.1(4) Filling-in bars or wire mesh. The standard * * * 1966 IDR 521 and stairways.

CHAPTER 3
CLASS "C" ESCAPES

2.1(5) *Brackets—balconies.* Bracket * * * 1966 IDR 521 shall be same as for ladder escapes.

2.2(103)T.III Stairways.

2.2(1) *Stairway clearance.* No stairway * * * 1966 IDR 521 any portion of walls of building.

2.2(2) *Stringers.* Stringers for stairs * * * 1966 IDR 521 half-inch bolts.

2.2(3) *Steps.* Steps to be made * * * 1966 IDR 521 twenty-two inches long.

2.2(4) *Rise.* Steps to be spaced * * * 1966 IDR 521 members of stringers.

2.2(5) *Posts.* Angle iron posts * * * 1966 IDR 521 stringers of stairway.

2.2(6) *Rail.* Railings for stairways to * * * 1966 IDR 521 for outside of stairways.

2.2(7) *Double width stairs.* Where double * * * 1966 IDR 521 ground direct.

2.2(8) *Stair bracket.* Where any flight of * * * 1966 IDR 521 * * * 1966 IDR 522 as near midway of the flight as possible.

2.2(9) *Intermediate platform.* Whenever * * * 1966 IDR 522 escape shall be provided.

2.2(10) *Terminal balcony.* In all cases * * * 1966 IDR 522 than thirty inches in length.

2.2(11) *Exits.* Fire escapes erected on * * * 1966 IDR 522 tubular fire escape.

2.2(12) *Counterbalanced stair.* Counter- * * * 1966 IDR 522 prevent the successful operation of same.

2.3(103)T.III Counterweight construction.

2.3(1) *Brackets.* Top bracket to be * * * 1966 IDR 522 in diameter.

2.3(2) *Guides for counterweight.* Guides * * * 1966 IDR 522 upper and lower brackets, with two nuts on bolts.

2.3(3) *Sheaves.* Not less than two sheaves * * * 1966 IDR 522 shall be not less than eight inches.

2.3(4) *Housing.* Housing for sheaves shall * * * 1966 IDR 522 their full depth.

2.3(5) *Cables.* Cables shall be not less * * * 1966 IDR 522 cable.

2.3(6) *Counterweights.* Counterweights * * * 1966 IDR 522 freely in guides under any weather conditions.

2.3(7) *Bails.* Bails shall be constructed * * * 1966 IDR 522 seven feet at all times.

3.1(103)T.III Iron ladder fire escapes—balconies.

3.1(1) *Material.* All balconies for ladder * * * 1966 IDR 522 twenty-eight inches deep and six feet long.

3.1(2) *Frame.* The balcony frame shall be * * * 1966 IDR 522 T-iron lengthwise through the balcony.

3.1(3) *Posts.* Said balconies to have a * * * 1966 IDR 522 post every three feet, bolted to the balcony.

3.1(4) *Rails.* Balconies to be equipped * * * 1966 IDR 522 stairway escapes may be used.

3.2(103)T.III Brackets for balconies of ladder escapes.

3.2(1) *Material.* There shall be not less * * * 1966 IDR 522 * * * 1966 IDR 523 escapes may be used.

3.2(2) *Fastenings.* Top bar of said bracket * * * 1966 IDR 523 length of balcony.

3.2(3) *Angle.* The angle of brackets to be * * * 1966 IDR 523 wall at least four inches at bottom.

3.3(103)T.III Ladders.

3.3(1) *Material.* Rungs of ladders to be * * * 1966 IDR 523 inch iron.

3.3(2) *Location.* All such ladders, when * * * 1966 IDR 523 ladders shall not exceed twelve feet.

3.4(103)T.III General requirements.

3.4(1) *Use of other materials.* Materials * * * 1966 IDR 523 fortieth of the span.

Dated at Des Moines, Iowa, this second day of November, 1955. [Filed November 25, 1955]

3.4(2) *Rivets and bolts.* All rivets and * * * 1966 IDR 523 clearance will permit.

3.4(3) *Material.* The use of second-hand * * * 1966 IDR 523 condemned if found in fire escape construction.

3.4(4) *Fittings.* No cast iron fittings shall be used.

3.4(5) *Roof ladder.* All fire escapes to * * * 1966 IDR 523 fire-fighting purposes.

3.4(6) *Holes in masonry.* All holes in * * * 1966 IDR 523 cement mortar.

3.4(7) *Painting.* All work must be painted * * * 1966 IDR 523 field coat to be different color than shop coat.

3.4(8) *Factor of safety.* Balconies and * * * 1966 IDR 523 safety of not less than four.

3.4(9) Approval of plans. Duplicate sets * * * 1966 IDR 523 files of the state fire marshal.

3.4(10) Maintenance and painting. Steel * * * 1966 IDR 523 such wires are inclosed in rigid conduit.

CHAPTER 4

RULES AND REGULATIONS PERTAINING TO EXITS IN BUILDINGS, FOYERS, AISLES AND RAMPS IN THEATERS, ETC., AND MEANS OF ESCAPE FROM BUILDINGS

1966 IDR 523

4.1(103)T.III Doors.

4.1(1) *Doors to open outward.* The * * * 1966 IDR 524 fire marshal.

4.1(2) *Emergency exits.* Emergency exit * * * 1966 IDR 524 building is open to the public.

4.1(3) *Foyers.* Foyers, corridors, * * * 1966 IDR 524 to the ratio fixed by law.

4.1(4) *Ramps.* Ramps shall be provided in * * * 1966 IDR 524 special permission of the state fire marshal.

4.1(5) *Seats.* Seats in auditoriums, * * * 1966 IDR 524 clear for exit.

CHAPTER 5

STORAGE AND HANDLING OF LIQUEFIED PETROLEUM GASES

Promulgated under authority of Chapter 101 of the Code

[Filed August 21, 1957]

5.1(101)T.III Definitions. For the * * * 1966 IDR 527 respectively assigned to them:

5.1(1) Authority having jurisdiction * * * 1966 IDR 527 state of Iowa.

5.1(2) The term "liquefied petroleum * * * 1966 IDR 527 butane), or butylenes.

5.1(3) The term "approved" as used in * * * 1966 IDR 527 installation and usc.

5.1(4) The term "shall" as used in these * * * 1966 IDR 527 requirements.

5.2(101)T.III Application of rules.

5.2(1) The following standards are intended * * * 1966 IDR 527 by these standards.

5.2(2) "Basic rules" apply to all divisions * * * 1966 IDR 527 rules."

5.2(3) Division I—"bottled gas"—applies * * * 1966 IDR 527 commission specifications.

5.2(4) Division II applies to installations * * * 1966 IDR 527 commission specifications.

5.2(5) Division III applies to containers * * * 1966 IDR 527 of liquefied petroleum gases.

5.2(6) Division IV applies to fuel containers * * * 1966 IDR 527 * * * 1966 IDR 528 semimobile units; etc.)

5.2(7) Division V applies to the storage of * * * 1966 IDR 528 utilization point.

5.2(8) Division VI applies to cylinder * * * 1966 IDR 528 on highway mobile vehicles.

5.2(9) Division VII applies to liquefied * * * 1966 IDR 528 provisions of Division IV.

5.2(10) Division VIII applies to liquefied * * * 1966 IDR 528 gas appliances in buildings.

5.2(11) When reference is made to gas in * * * 1966 IDR 528 gaseous state.

5.2(12) The term "containers" includes all * * * 1966 IDR 528 petroleum gases.

5.2(13) The term "container assembly" as * * * 1966 IDR 528 and protective housings.

5.2(14) The term "systems" as used in these * * * 1966 IDR 528 etc., and piping connecting such parts.

5.2(15) The abbreviations "p.s.i.g." and * * * 1966 IDR 528 per square inch absolute, respectively.

5.2(16) The abbreviation ICC refers to interstate commerce commission.

5.3(101)T.III Nonretroactivity. Liquefied * * * 1966 IDR 528 adjoining property.

5.4(101)T.III Modification. The state fire * * * 1966 IDR 528 hazard to life or adjoining property.

5.5(101)T.III Submittal of plans. For * * * 1966 IDR 528 shall be controlling.

5.6(101)T.III Odorizing gases.

5.6(1) All liquefied petroleum gases shall * * * 1966 IDR 528 further processing.

5.6(2) The odorization requirement of * * * 1966 IDR 528 that meet the odorization requirement of 5.6(1).

5.7(101)T.III Approval of equipment and systems.

5.7(1) Each system utilizing ICC containers * * * 1966 IDR 528 hoods or cabinets if desired):

a. Tested and listed by Underwriters' Laboratories, Inc., or

b. Tested and listed by a nationally recognized testing laboratory, or

c. Inspected and approved by the state fire marshal.

5.7(2) Each system for domestic or * * * 1966 IDR 528 or regulators, shall be individually:

a. Tested and listed by Underwriters' Laboratories, Inc., or

b. Tested and listed by a nationally recognized testing laboratory, or

c. Inspected and approved by the state fire marshal.

5.7(3) In systems utilizing containers of * * * 1966 IDR 529 terminated by:

a. Testing and listing by Underwriters' Laboratories, Inc., or

b. Testing and listing by a nationally recognized testing laboratory, or

c. Inspected and approved by the state fire marshal.

5.8(101)T.III Requirement for construction and original test of containers.

5.8(1) Containers used with systems embodied in Divisions II, III, IV, VI and VII, except as provided in 9.2(3) and 11.1(1) shall be * * * 1966 IDR 529 Code or the API-ASME Code.

a. Containers constructed according to * * * 1966 IDR 529 earlier editions are not authorized.

b. Containers constructed according to * * * 1966 IDR 529 editions do not apply.

5.8(2) The provisions of paragraph 5.8(101) T.III shall * * * 1966 IDR 529 at the time of fabrication.

5.8(3) Containers used with systems embodied in division I in 9.2(3) of division IV, and in division VI, except as provided in 11.1(2), * * * 1966 IDR 529 manufacture.

5.9(101)T.III Welding on containers.

5.9(1) Welding to the shell, head, or any * * * 1966 IDR 529 tank manufacturer.

5.9(2) Where repair or modification * * * 1966 IDR 529 pliance with ICC regulations.

5.10(101)T.III Markings on containers.

5.10(1) Each container or system covered in Divisions II, III, and IV, except as provided in 9.2(3) and VII shall be marked as specified in the following:

a. With a marking identifying compliance * * * 1966 IDR 529 Boiler and Pressure Vessel Inspectors.

Underground: Container and system nameplate.

Aboveground: Container.

b. With notation as to whether system is * * * 1966 IDR 529 stallation.

Underground and aboveground: System nameplate.

c. With the name and address of the supplier of the system, or the trade name of the system.

Underground and aboveground: System nameplate.

d. With the water capacity of the container in pounds or gallons, U.S. Standard.

Underground: Container and system nameplate.

Aboveground: Container.

e. With the working pressure in pounds per sq. in. for which the container is designed.

Underground: Container and system nameplate.

Aboveground: Container.

f. With the wording "This container shall * * * 1966 IDR 529 F." See 5.20(6).

Underground and aboveground: System nameplate or tag on filler connection.

g. With the tare weight in pounds or * * * 1966 IDR 529 a water capacity of three hundred lbs. or less.

Underground: No requirement.

Aboveground: Container.

h. With marking indicating the maximum * * * 1966 IDR 529 not more than twenty degrees F.

Aboveground and underground: System nameplate or on liquid level gauging device.

i. With the overall length and outside diameter of the container in inches.

Underground: System nameplate.

Aboveground: No requirement.

5.10(2) Markings specified on "container" shall * * * 1966 IDR 530 in such a manner as to be readily visible.

5.11(101)T.III Location of containers and regulating equipment.

5.11(1) Containers and first stage * * * 1966 IDR 530 indoors under the following conditions:

a. If temporarily used for demonstration * * * 1966 IDR 530 water capacity of twelve pounds.

b. If used with a completely self-con- * * * 1966 IDR 530 two and one-half pounds.

c. As provided in division V.

5.11(2) Each individual container shall be * * * 1966 IDR 530 for human habitation or occupancy. [Amended January 15, 1960]

TABLE INSERT HERE

Provided, however, the above distance re- * * * 1966 IDR 530 the distance table above. [Amended January 15, 1960]

5.11(3) No containers while installed for use shall be stacked one above the other.

5.11(4) In cases of bulk storage in heavily * * * 1966 IDR 530 on and other reasonable protective methods.

5.11(5) In industrial installations involving * * * 1966 IDR 530 practice.

5.11(6) In the case of buildings devoted * * * 1966 IDR 530 manufacturing and distributing buildings.

5.11(7) Any container used in domestic or * * * 1966 IDR 530 except as provided in 11.12(101)T.III.

5.11(8) Readily ignitable material such as * * * 1966 IDR 530 ten feet of any container.

5.11(9) The minimum separation between * * * 1966 IDR 530 seventy-five gallons or less capacity.

5.11(10) Suitable means shall be taken to * * * 1966 IDR 530 such as by diking, diversion curbs or grading.

5.11(11) When dikes are used with flammable * * * 1966 IDR 530 containers shall be located within the diked area.

5.11(12) Containers connected for service * * * 1966 IDR 530 or thoroughfare in any city, town or village. [Amended January 15, 1960]

5.12(101)T.III Container valves and accessories.

5.12(1) All valves, fittings and accessories * * * 1966 IDR 530 malleable or nodular iron.

5.12(2) All connections to containers, * * * 1966 IDR 530 as practicable (except as provided in 5.12(5)).

5.12(3) Excess flow valves where required * * * 1966 IDR 530 * * * 1966 IDR 531 flow valve.

5.12(4) Liquid level gauging devices which * * * 1966 IDR 531 excess flow valves.

5.12(5) Openings from tank or through fittings * * * 1966 IDR 531 than No. 54 drill size opening.

5.12(6) Excess flow and back pressure check * * * 1966 IDR 531 such valve. (See Div. III for tank truck requirements.)

5.12(7) Excess flow valves shall be * * * 1966 IDR 531 pressures.

5.13(101)T.III Piping, tubing, and fittings.

5.13(1) Piping, except as provided in Division IV, 9.5(1) and Division VI, 11.9(3), * * * 1966 IDR 531 or plaster walls or insulation.

5.13(2) In systems where the gas in liquid form without pressure reduction enters the building (see 5.19(1)) * * * 1966 IDR 531 industrial vaporizer buildings.

5.13(3) Pipe joints may be screwed, flanged, * * * 1966 IDR 531 melting point exceeding one thousand degrees F.

5.13(4) For operating pressures of one * * * 1966 IDR 531 fifty p.s.i.g.

5.13(5) The use of threaded cast iron pipe * * * 1966 IDR 531 and unions is prohibited.

5.13(6) Strainers, regulators, meters, * * * 1966 IDR 531 gray iron for such equipment.

5.13(7) All material such as valve seats, * * * 1966 IDR 531 to which they are subjected.

5.13(8) Approved flexible hose may be used on the low pressure side of the system as follows:

a. Only appliances which are necessarily * * * 1966 IDR 531 is exempt from this provision.

b. Only approved hose of proper design and * * * 1966 IDR 531 securely attached to each end.

c. The key of the shutoff on an independent * * * 1966 IDR 531 shutoff will be lessened.

d. Where flexible hose is used, a shutoff * * * 1966 IDR 531 other position where it may be turned on by accident.

e. A wall outlet to which an appliance is * * * 1966 IDR 531 is prohibited.

f. Where an appliance, such as a gas iron * * * 1966 IDR 531 and separated, in preference to a rubber slip end.

g. Where the hose is likely to be subjected * * * 1966 IDR 531 up of non-combustible material shall be used.

5.13(9) All piping, tubing, or hose shall be * * * 1966 IDR 531 * * * 1966 IDR 532 Test shall not be made with a flame.

5.13(10) Provision shall be made for * * * 1966 IDR 532 flexible connections.

5.13(11) Piping outside buildings may be * * * 1966 IDR 532 the condensate.

5.14(101)T.III Hose specifications.

5.14(1) Hose shall be fabricated of materials * * * 1966 IDR 532 foot intervals. [Filed June 22, 1962]

5.14(2) Hose subject to container pressure * * * 1966 IDR 532 the container is designed.

5.14(3) Hose and hose connections located * * * 1966 IDR 532 when connected.

5.14(4) Where hose is to be used for trans- * * * 1966 IDR 532 excessive hydrostatic pressure in the hose.

5.14(5) Hose subject to container pressure * * * 1966 IDR 532 listed in basic rule 5.7(101)T.III.

5.14(6) The appliances connected with hose * * * 1966 IDR 532 of the wrong valve.

5.14(7) Hose shall not extend from one * * * 1966 IDR 532 from view or used in concealed locations. [Filed June 22, 1962]

5.15(101)T.III Safety devices.

5.15(1) Every container except those constructed in accordance with ICC specifications and every vaporizer (except motor fuel vaporizers and except vaporizers described in 5.16(2)b. and 7.3(4)a.) whether * * * 1966 IDR 532 below such discharge.

5.15(2) Container and vaporizer safety * * * 1966 IDR 532 working pressure of the containers:

Containers	Minimum	Maximum
* * * 1966 IDR 532		

..As approved by Bureau of Explosives

5.15(3) Safety relief devices used with * * * 1966 IDR 532 not less than the rates shown in Appendix A.

5.15(4) In certain locations sufficiently * * * 1966 IDR 532 spraying, by shading or other effective means.

5.15(5) Safety relief valves shall be so * * * 1966 IDR 532 vided with approved means for sealing adjustment.

5.15(6) No shutoff valves shall be * * * 1966 IDR 532 flow through the relief valves.

5.15(7) Safety relief valves shall have * * * 1966 IDR 532 container.

5.15(8) Each container safety relief valve used with systems covered by Divisions II, III, IV, VI, and VII except as provided in 9.2(3) and 11.1(1) shall be * * * 1966 IDR 532 * * * 1966 IDR 533 manufacturer's name and catalogue number.

5.15(9) Safety relief valve assemblies, * * * 1966 IDR 533 for the container on which they are installed.

5.15(10) A safety relief valve shall be * * * 1966 IDR 533 four hundred p.s.i.g.

5.15(11) Discharge from safety relief device * * * 1966 IDR 533 covered by 5.11(1) "a", "b" and "c"; nor beneath any building.

5.16(101)T.III Vaporizer and housing.

5.16(1) Indirect fired vaporizers utilizing * * * 1966 IDR 533 constructed and installed as follows:

a. Vaporizers shall be constructed in * * * 1966 IDR 533

With the name or symbol of the manufacturer.

b. Vaporizers having an inside diameter of * * * 1966 IDR 533 permanently marked.

c. Heating or cooling coils shall not be installed inside a storage container.

d. Vaporizers may be installed in buildings, * * * 1955 IDR 533 floor line and roof.

e. Vaporizers shall have at or near the * * * 1966 IDR 533 except as provided in section 7.3(4) "a".

f. Vaporizers shall be provided with * * * 1966 IDR 533 from the vaporizers to the gas discharge piping.

g. The device that supplies the necessary * * * 1966 IDR 533 supply heat for a vaporizer in a domestic system.

h. Gas-fired heating systems supplying * * * 1966 IDR 533 pilot light should fail.

i. Vaporizers may be an integral part of * * * 1966 IDR 533 the liquid section or gas section or both.

j. Vaporizers shall not be equipped with fusible plugs.

k. Vaporizer houses shall not have unprotected drains to sewers or sump pits.

5.16(2) Atmospheric vaporizers employing * * * 1966 IDR 533 be installed as follows:

- a. Buried underground, or
- b. Located inside building close to a * * * 1966 IDR 533 vided capacity of unit does not exceed one quart.
- c. Vaporizers of less than one quart * * * 1966 IDR 533 listed in 5.7(101)T.III demonstrate that the assembly is safe without safety relief valves.
- d. Vaporizers designed primarily for * * * 1966 IDR 533 tampering and physical damage.

5.16(3) Direct gas-fired vaporizers shall * * * 1966 IDR 533 follows:

a. With the requirements of the ASME * * * 1966 IDR 533 is designed. (See 5.8(101)T.III)

b. With the name of the manufacturer; * * * 1966 IDR 533 gallons per hour.

5.16(4) Vaporizers may be connected to the * * * 1966 IDR 533 from container to vaporizer.

5.16(5) Vaporizers with capacity not exceeding * * * 1966 IDR 534 shutoff valves.

5.16(6) Vaporizers may be installed in * * * 1966 IDR 534 See section 5.15(1) for venting of relief valves.

5.16(7) Vaporizers shall have at or near the * * * 1966 IDR 534 excess of one hundred forty degrees F.

5.16(8) Vaporizers shall be provided with * * * 1966 IDR 534 of the vaporizer.

5.16(9) Vaporizers shall be provided with * * * 1966 IDR 534 main burner and pilot.

5.16(10) Vaporizers shall be equipped with * * * 1966 IDR 534 pilot flame be extinguished.

5.16(11) Pressure regulating and pressure * * * 1966 IDR 534 noncombustible partition or partitions.

5.16(12) Except as provided in section 5.18(3) * * * 1966 IDR 534 built upon:

- a. Ten feet for vaporizers having a * * * 1966 IDR 534 vaporizing capacity.
- b. Twenty-five feet for vaporizers having * * * 1966 IDR 534 gallons per hour.
- c. Fifty feet for vaporizers having a * * * 1966 IDR 534 gallons per hour.

5.16(13) No direct fired vaporizer shall * * * 1966 IDR 534 in section 7.1(1).

5.16(14) No direct fired vaporizer shall be * * * 1966 IDR 534 hourly capacity of the vaporizer in gallons.

5.16(15) Vaporizers shall not be provided with fusible plugs.

5.16(16) Vaporizer shall not have unprotected drains to sewers or sump pits.

5.17(101)T.III Direct gas-fired tank heaters shall be constructed and installed as follows:

5.17(1) Direct gas-fired tank heaters, and * * * 1966 IDR 534 installed above ground.

5.17(2) Tank heaters shall be permanently * * * 1966 IDR 534 gallons per hour.

5.17(3) Tank heaters may be an integral * * * 1966 IDR 534 or both.

5.17(4) Tank heaters shall be provided with * * * 1966 IDR 534 main burner and pilot.

5.17(5) Tank heaters shall be equipped with * * * 1966 IDR 534 flame be extinguished.

5.17(6) Pressure regulating and pressure * * * 1966 IDR 534 noncombustible partition.

5.17(7) The following minimum distances * * * 1966 IDR 534 may be built upon:

a. Ten feet for storage containers of less than five hundred gallons capacity.

b. Twenty-five feet for storage containers of five hundred to twelve hundred gallons capacity.

c. Fifty feet for storage containers of over twelve hundred gallons capacity.

5.17(8) No direct fired tank heater shall * * * 1966 IDR 534 column of the table of section 7.1(1).

5.17(9) No direct fired tank heater shall * * * 1966 IDR 534 in gallons.

5.18(101)T.III The vaporizer section of * * * 1966 IDR 534 shall be constructed and installed as follows:

5.18(1) Vaporizer-burners shall have a minimum * * * 1966 IDR 534 a factor of safety of five.

5.18(2) Manually operated positive shut- * * * 1966 IDR 534 to shut off all flow to the vaporizer-burners.

5.18(3) Minimum distances between storage * * * 1966 IDR 534
* * * 1966 IDR 535

Over 2,000 gallons 50 feet

5.18(4) The vaporizer section of vaporizer-burners shall be protected by a

hydrostatic relief valve. (See 5.15(10).)
* * * 1966 IDR 535 operating personnel.

5.18(5) Vaporizer-burners shall be provided * * * 1966 IDR 535 the main burner and pilot.

5.18(6) Vaporizer-burners shall be equipped * * * 1966 IDR 535 event the pilot is extinguished.

5.18(7) Pressure regulating and control * * * 1966 IDR 535 by a noncombustible partition.

5.18(8) Pressure regulating and control * * * 1966 IDR 535 discharge temperature of the vapor.

5.18(9) The vaporizer section of vaporizer-burners shall not be provided with fusible plugs.

5.18(10) Vaporizer coils or jackets shall * * * 1966 IDR 535 alloys.

5.18(11) Equipment utilizing vaporizer- * * * 1966 IDR 535 air flow. [Filed June 22, 1962]

5.19(101)T.III Filling densities.

5.19(1) The "filling density" is defined as * * * 1966 IDR 535 filling densities.

MAXIMUM PERMITTED FILLING DENSITY

	* * *	1966 IDR 535	
.627-634	57	60	61

5.19(2) The maximum liquid volume in per- * * * 1966 IDR 535 by using the formula shown in Appendix C.

5.19(3) The maximum liquid volume in percent * * * 1966 IDR 535 preceding Table 5.19(1) to determine the maximum quantity that may be placed in a container.

5.19(4) Any container including mobile * * * 1966 IDR 535 fixed length dip tube type.

5.20(101)T.III Liquid inside building.

5.20(1) No gas in the liquid phase shall * * * 1966 IDR 535 except:

a. Buildings devoted exclusively to housing * * * 1966 IDR 535 gas mixing, gas manufacturing or distribution.

b. Buildings housing internal combustion engines.

c. In domestic installations no liquid or * * * 1966 IDR 535 authority having jurisdiction.

d. Buildings, or in separate fire divisions * * * 1966 IDR 535 experimental laboratories.

5.21(101)T.III Transfer of liquids.

5.21(1) At least one attendant shall remain * * * 1966 IDR 535 the transfer of product.

5.21(2) Containers shall be filled or used only upon authorization of the owner.

5.21(3) Portable containers for domestic * * * 1966 IDR 535 in a passenger vehicle. [Amended January 15, 1960]

5.21(4) Containers manufactured in accordance * * * 1966 IDR 535 * * * 1966 IDR 536 reused in LP-Gas service.

5.21(4) Gas or liquid shall not be vented * * * 1966 IDR 536 another [except as provided in 9.4(3).]

5.21(5) Fuel supply containers shall be * * * 1966 IDR 536 buildings especially provided for that purpose.

5.21(6) The maximum vapor pressure of the * * * 1966 IDR 536 accordance with section 7.1(101)T.III, 8.1(101)T.III, and 9.2(101)T.III (for ICC containers use ICC requirements.)

5.21(7) Marketers and users shall exercise * * * 1966 IDR 536 with regard to pressures.

5.21(8) Pumps or compressors shall be * * * 1966 IDR 536 medium to the container being emptied.

5.21(9) Portable liquefied petroleum gas * * * 1966 IDR 536 thereon by tank truck.

5.21(10) Portable containers containing * * * 1966 IDR 536 movement, tipping over or physical damage. [Amended January 15, 1960]

5.21(11) Air moving equipment including crop * * * 1966 IDR 536 located fifty feet or more from the container.

5.21(12) Agricultural equipment having open * * * 1966 IDR 536 during refueling. [Amended June 22, 1962]

5.22(101)T.III Tank car or transport truck unloading points and operations.

5.22(1) The track of tank car siding shall be relatively level.

5.22(2) A "TANK CAR CONNECTED" sign, as * * * 1966 IDR 536 car is connected for unloading.

5.22(3) While cars are on sidetrack for * * * 1966 IDR 536 blocked on the rails.

5.22(4) A man shall be in attendance at * * * 1966 IDR 536 being unloaded.

5.22(5) The pipe line to which the unloading * * * 1966 IDR 536 in case of line hose and fittings rupture.

5.22(6) The tank car or transport truck * * * 1966 IDR 536 sideration of the following:

a. Proximity to railroads and highway traffic.

b. The distance of such unloading point from adjacent property.

c. With respect to buildings on installer's property.

d. Nature of occupancy.

e. Topography.

f. Type of construction of buildings.

g. Number of tank cars or transport trucks that may be safely unloaded at one time.

h. Frequency of unloading.

5.22(7) Where practical, the distance of the unloading point should conform to the distances in 5.11(2), except * * * 1966 IDR 536 jurisdiction.

5.23(101)T.III Instructions. Personnel * * * 1966 IDR 536 in such function.

5.24(101)T.III Electrical connections and open flames.

5.24(1) All electrical equipment in vaporizer * * * 1966 IDR 536 Hazardous Locations of the National Electrical Code.

5.24(2) Open flames or other sources of * * * 1966 IDR 536 cylinder-filling rooms.

5.25(101)T.III Liquid level gauging device.

5.25(1) Containers, including ICC cylinders, * * * 1966 IDR 536 covered by division IV.

5.25(2) Each container, except containers * * * 1966 IDR 536 containers as required in 5.18(101)T.III.

5.25(3) All gauging devices shall be arranged * * * 1966 IDR 536 * * * 1966 IDR 537 The gallonage capacity (5.18(101)T.III) whether for cylindrical * * * 1966 IDR 537 system nameplate and part on the gauging device.

5.25(4) Gauging devices that require bleeding * * * 1966 IDR 537 provided with excess flow valve.

5.25(5) Gauging devices shall have a * * * 1966 IDR 537 fifty pounds per square inch gauge.

5.25(6) Length of fixed tube device shall * * * 1966 IDR 537 tube shall be designed.

5.25(7) When a fixed tubed device is used on * * * 1966 IDR 537 and on the container.

5.25(8) Gauge glasses of the columnar * * * 1966 IDR 537 industrial installations.

5.25(9) Gauging devices of the float, * * * 1966 IDR 537 damage and breakage.

5.26(101)T.III Use of approved appliances.

5.26(1) New domestic and commercial gas * * * 1966 IDR 537 the following:

a. Determined by a nationally recognized * * * 1966 IDR 537 provisions of this section.

b. Approval by the state fire marshal.

5.26(2) Any appliance that was originally * * * 1966 IDR 537 is placed in use.

5.27(101)T.III One hundred percent automatic shutoff required.

5.27(1) All liquefied petroleum gas fired * * * 1966 IDR 537 automatic safety shutoff.

5.27(2) All unattended agricultural heating * * * 1966 IDR 537 automatic shutoff. [Amended June 22, 1962]

CHAPTER 6

DIVISION I

CYLINDER SYSTEMS

(Sometimes called Bottled Gas.)

Division I applies specifically to systems utilizing containers constructed in accordance with the interstate commerce commission specifications. All basic rules apply to this division unless otherwise noted in the basic rules.

6.1(101)T.III Marking of containers.

6.1(1) All containers shall be marked * * * 1966 IDR 537 commission regulations may be used.

6.1(2) Except as provided in 6.1(3) each * * * 1966 IDR 537 unit of weight.

6.1(3) If a container is filled and main- * * * 1966 IDR 537 with 6.1(3) is not required.

6.1(4) Each container shall be marked with * * * 1966 IDR 537 fittings but not the cap.

6.2(101)T.III Description of a division I system. A division I system shall include the * * * 1966 IDR 537 regulators and relief valves.

6.3(101)T.III Location of containers and regulating equipment.

6.3(1) Containers shall not be buried below * * * 1966 IDR 538 Except as provided in 5.15(10) and in 6.7, the discharge * * * 1966 IDR 538 well ventilated to the outside.

6.3(2) Containers shall be set upon firm * * * 1966 IDR 538 or special fitting.

6.4(101)T.III Container valves and accessories.

6.4(1) Valves in the assembly of multiple * * * 1966 IDR 538 automatic changeover device is not required.

6.4(2) Regulators and low pressure relief * * * 1966 IDR 538 will not affect their operation.

6.4(3) Valves and connections to the * * * 1966 IDR 538 utilization, as follows:

a. By setting into recess of container * * * 1966 IDR 538 if container is dropped upon a flat surface, or,

b. By ventilated cap or collar, fastened * * * 1966 IDR 538 to valve or other connection.

6.4(4) When containers are not connected to * * * 1966 IDR 538 tainers are considered empty.

6.4(5) Containers which are recharged at the * * * 1966 IDR 538 of the filling or equalizing connections.

6.5(101)T.III Safety devices.

6.5(1) Containers shall be provided with * * * 1966 IDR 538 commerce commission regulations.

6.5(2) When the delivery pressure from the * * * 1966 IDR 538 tubing specified in 5.13(2). When a regulator * * * 1966 IDR 538 (see 5.11(1)), the relief valve and the space * * * 1966 IDR 538 nor to 6.7(101)T.III and 5.15(11). In buildings * * * 1966 IDR 538 vented to the outside.)

6.6(101)T.III Reinstallation of containers. * * * 1966 IDR 538 effective regulations of the ICC.

6.7(101)T.III Use of gas for industrial application where oxygen is not required.

6.7(1) Where portability of containers * * * 1966 IDR 538 additional rules:

a. The regulator employed may be connected * * * 1966 IDR 538 for use with liquefied petroleum gas.

b. The aggregate capacity of the * * * 1966 IDR 538 unless separated by at least fifty feet.

c. Manifolds and fittings connecting * * * 1966 IDR 538 rupture at least five hundred p.s.i. gauge.

d. Containers, regulating equipment and * * * 1966 IDR 538 unauthorized persons.

6.8(101)T.III Permissible product. A * * * 1966 IDR 539 at one hundred thirty degrees F.

CHAPTER 7

DIVISION II

SYSTEMS UTILIZING CONTAINERS OTHER THAN ICC

Division II applies specifically to systems * * * 1966 IDR 539 noted in the basic rules.

7.1(101)T.III Design working pressure and classification of storage containers.

7.1(1) Storage containers shall be designed and classified as follows:

* * * 1966 IDR 539

200	215	200	250
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7.1(2) The shell or head thickness of any container shall not be less than three-sixteenths inch.

7.2(101)T.III Container valves and accessories, filler pipes and discharge pipes.

7.2(1) The filling pipe inlet terminal * * * 1966 IDR 539 see 5.11(2), and preferably not less than five * * * 1966 IDR 539 a protective housing built for the purpose.

7.2(2) The filling connection shall be fitted with one of the following:

a. Combination back-pressure check valves and excess flow valve;

b. One double or two single back-pressure check valves;

c. A positive shutoff valve, in conjunction with either,

(1) An internal back-pressure valve, or

(2) An internal excess flow valve.

7.2(3) All openings in a container shall be equipped with approved automatic excess flow valves except in the following: Filling connections as provided in 7.2(2); safety relief connections, liquid level gauging devices as provided in 5.12(4), 5.24(4) and 5.24(9); pressure gauge connections as provided in 5.12(5), as provided in 7.2(4), 7.2(5) and 7.2(6).

7.2(4) No excess flow valve is required in * * * 1966 IDR 539 following are complied with:

a. Such systems' total water capacity does not exceed two thousand U.S. gallons.

b. The discharge from the service outlet * * * 1966 IDR 539 shutoff valve:

(1) threaded directly into the service outlet of the container; or

(2) is an integral part of a sub- * * * 1966 IDR 539 outlet of the container, or

(3) threaded directly into a substantial * * * 1966 IDR 539 of the container.

c. The shutoff valve is equipped with an attached handwheel or equivalent.

d. The controlling orifice between the * * * 1966 IDR 539 for liquid withdrawal systems.

e. An approved pressure-reducing regulator * * * 1966 IDR 539 properly protected on or at the tank (see 7.8(101)T.III.

7.2(5) All inlet and outlet connections * * * 1966 IDR 539 Labels may be on valves.

7.2(6) In lieu of an excess flow valve; * * * 1966 IDR 539 in case of fire.

7.2(7) Not more than two plugged openings * * * 1966 IDR 539 thousand gallons or less water capacity.

7.3(101)T.III Safety devices.

7.3(1) General: All safety devices shall comply with the following:

a. All container safety relief devices * * * 1966 IDR 539 of the container.

b. In industrial and gas manufacturing * * * 1966 IDR 539 to a point outside a building.

c. Safety relief device discharge * * * 1966 IDR 540 shall not be permitted.

d. If desired, discharge lines from two * * * 1966 IDR 540 relief valves are the same.

e. Each storage container of two thousand * * * 1966 IDR 540 with a suitable pressure gauge.

f. When the delivery pressure from the * * * 1966 IDR 540 systems utilizing tubing specified in 5.13(2). * * * 1966 IDR 540 to the outside.)

g. Discharge from any safety relief * * * 1966 IDR 540 ventilated to the outside.

7.3(2) Aboveground containers: Safety * * * 1966 IDR 540 be provided as follows:

a. Containers of twelve hundred gallons * * * 1966 IDR 540 percent of the required rate of discharge.

b. The fusible metal of the fuse plugs * * * 1966 IDR 540 with the vapor space of the container.

c. On a container having a water capacity * * * 1966 IDR 540 accumulate in the discharge pipe. (See 5.15(10).)

d. On containers of one hundred twenty- * * * 1966 IDR 540 such discharge.

e. On a container having a water capacity * * * 1966 IDR 540 escaping from the drain. (See 5.15(10).)

7.3(3) Underground containers: On all * * * 1966 IDR 540 charge requirement of the relief valves.

a. On underground containers of more * * * 1966 IDR 540 at least seven feet above the ground.

b. Where there is a probability of the man- * * * 1966 IDR 540 manhole housing.

7.3(4) Vaporizers: Safety devices for vaporizers shall be provided as follows:

a. Vaporizers of less than one quart * * * 1966 IDR 541 5.7(101)T.III, demonstrate that the assembly is safe without safety relief valves.

b. No vaporizer shall be equipped with fusible plugs.

c. In industrial and gas manufacturing * * * 1966 IDR 541 the buildings and be discharged upward.

7.4(101)T.III Reinstallation of containers. Containers installed underground may be rein- * * * 1966 IDR 541 (See 7.6(6), see also 7.3(101)T.III for relief valve requirements.)

7.5(101)T.III Capacity of liquid containers. * * * 1966 IDR 541 thousand standard U.S. gallons capacity.

7.6(101)T.III Installation of storage containers.

7.6(1) Containers installed aboveground except as provided in 7.6(7) shall * * * 1966 IDR 541 structural supports on firm masonry foundation.

7.6(2) Aboveground containers shall be supported as follows:

a. Horizontal containers shall be mounted * * * 1966 IDR 541 foundations or saddles.

b. Containers of twelve hundred gallons * * * 1966 IDR 541 twenty-four inches.

7.6(3) Any container may be installed with * * * 1966 IDR 541 the authority having jurisdiction.

7.6(4) Containers buried underground shall * * * 1966 IDR 541 traffic or other causes, then it shall be:

- a. Placed not less than two feet below grade, or
- b. Otherwise protected against such physical damage. * * * 1966 IDR 541 or weighted.

7.6(5) Containers may be partially buried providing the following requirements are met:

- a. The portion of the container below * * * 1966 IDR 541 corrosion as required for fully buried containers. (See 7.6(6).)
- b. Spacing requirements shall be as specified for underground tanks in 5.11(2).
- c. Relief valve capacity shall be as required for aboveground containers.
- d. Container is located so as not to be * * * 1966 IDR 541 protected against such damage.

7.6(6) Underground containers shall be * * * 1966 IDR 541 to the coating.

7.6(7) Containers with foundations attached * * * 1966 IDR 541 provisions: (See also 8.16(101) T.III).

- a. If they are to be used at a given * * * 1966 IDR 541 adequate ferrous metal supports.
- b. They shall not be located with the out- * * * 1966 IDR 541 fire-resisting supports are provided.
- c. The bottom of the skids shall not be * * * 1966 IDR 541 below the outside bottom of the container shell.
- d. Flanges, nozzles, valves, fittings and * * * 1966 IDR 541 physical damage.
- e. When not permanently located on fire- * * * 1966 IDR 541 * * * 1966 IDR 542 otherwise displaced.
- f. Skids, or lugs for attachment of skids, * * * 1966 IDR 542 the maximum permissible loaded weight.

7.6(8) Field welding where necessary shall * * * 1966 IDR 542 are applied by manufacturer of tank.

7.6(9) For aboveground containers secure * * * 1966 IDR 542 wherever sufficiently high flood water might occur.

7.6(10) When permanently installed con- * * * 1966 IDR 542 interconnecting such containers.

7.7(101) T.III Dikes and embankments.

7.7(1) Because of the pronounced volatility * * * 1966 IDR 542 the storage containers makes failure unlikely.

7.7(2) When in the opinion of the state * * * 1966 IDR 542 as may be considered necessary.

7.8(101) T.III Protection of tank accessories, grounding.

7.8(1) Valves, regulating, gauging and * * * 1966 IDR 542 gas controls in case of emergency.

7.8(2) All connections to underground * * * 1966 IDR 542 protected by a substantial cover.

7.8(3) Aboveground containers exceeding two * * * 1966 IDR 542 (See NFPA Pamphlet on Static Electricity, NFPA No. 77.)

7.9(101) T.III Drips for condensed gas. Where * * * 1966 IDR 542 be provided for revaporization of the condensate.

7.10(101) T.III Instructions. For installations * * * 1966 IDR 542 responsible for the operation of the system.

7.11(101) T.III Damage from vehicles. When * * * 1966 IDR 542 against such damage shall be taken.

7.12(101) T.III Pits and drains. Every * * * 1966 IDR 542 to sewer systems used for other purposes.

7.13(101) T.III General provisions applicable to bulk plants and to systems in industrial plants.

7.13(1) Where standard watch service is * * * 1966 IDR 542 installations and personnel properly trained.

7.13(2) Adequate lights shall be provided * * * 1966 IDR 542 valves and other equipment.

7.13(3) Suitable roadways or means of access * * * 1966 IDR 542 shall be provided.

7.13(4) The container storage area shall * * * 1966 IDR 542 through the fencing shall be provided.

7.14(101) T.III Container filling plants.

7.14(1) The container charging rooms shall be located not less than:

a. Ten feet from bulk storage containers.

b. Twenty-five feet from line of adjoining property which may be built upon.

7.14(2) Tank truck filling station outlets shall be located not less than:

a. Twenty-five feet from line of adjoining property which may be built upon.

b. Ten feet from pumps and compressors if housed in one or more separate buildings.

7.14(3) The pumps and compressors may be * * * 1966 IDR 542 buildings they shall be located not less than:

- a. Ten feet from bulk storage tanks.
- b. Twenty-five feet from line of adjoining property which may be built upon.
- c. Twenty-five feet from sources of ignition.

7.14(4) Where a part of the container filling * * * 1966 IDR 542 * * * 1966 IDR 543 manner to effect a permanent gas tight joint.

7.15(101)T.III Fire protection.

7.15(1) In industrial installations involving * * * 1966 IDR 543 the hose and its conveyor from the weather.

7.15(2) If in the opinion of the state * * * 1966 IDR 543 be at the discretion of the state fire marshal.

7.16(101)T.III **Painting.** Aboveground containers shall be kept properly painted.

7.17(101)T.III **Lighting.** At the discretion of the state fire marshal industrial installations shall be illuminated.

7.18(101)T.III **Vaporizers for internal combustion engines.** The provisions of 9.7(101)T.III shall apply.

7.19(101)T.III **Gas regulating and mixing equipment for internal combustion engines.** The provisions of section 9.8(101)T.III shall apply.

**CHAPTER 8
DIVISION III**

TANK TRUCKS, SEMITRAILERS AND TRAILERS FOR TRANSPORTATION OF LIQUEFIED PETROLEUM GASES

Division III applies specifically to contain- * * * 1966 IDR 543 regulatory body which may apply.

8.1(101)T.III **Design working pressure and classification of containers.**

8.1(1) Containers shall be designed and classified as follows:

	Minimum Design		
	* * * 1966 IDR 543		
200	215	200	250

8.1(2) The shell or head thickness of any container shall not be less than three-sixteenths inch.

8.2(101)T.III **Container valves and accessories.**

8.2(1) All valves shall be safeguarded against physical damage due to collision, overturning or other emergency.

8.2(2) Filling connections shall be provided * * * 1966 IDR 543 closing internal valves as specified in 8.2(3), * * * 1966 IDR 543 operated shutoff valve.

8.2(3) All other connections to containers, * * * 1966 IDR 543 valve to close automatically in case of fire.

8.2(4) All container inlets and outlets, * * * 1966 IDR 543 Labels may be on valves.

8.2(5) Each container shall be equipped with a suitable pressure gauge.

8.3(101)T.III Piping and fittings.

8.3(1) All piping, tubing and fittings shall be securely mounted and protected against damage and breakage.

8.3(2) All ferrous threaded fittings and * * * 1966 IDR 543

8.4(101)T.III Safety devices.

8.4(1) The discharge from safety relief * * * 1966 IDR 544 accumulate in the discharge pipe.

8.4(2) Any portion of piping between * * * 1966 IDR 544 pressure developing.

8.4(3) If tank filling connections are * * * 1966 IDR 544 connection failure beyond the pump.

8.5(101)T.III **Tank truck fuel systems.** In * * * 1966 IDR 544 installed in accordance with Division IV.

8.6(101)T.III Transfer of liquids.

8.6(1) Truck, trailer, and semitrailer * * * 1966 IDR 544 gauging device (see 5.24(101)T.III.)

8.6(2) Pumps or compressors shall be * * * 1966 IDR 544 setting of the by-pass valve.

8.7(101)T.III **Mounting containers on truck, semitrailer or trailer vehicle.**

8.7(1) A suitable "stop" or "stops" shall * * * 1966 IDR 544 slippage shall also be prevented by proper methods.

8.7(2) A suitable "hold down" device shall * * * 1966 IDR 544 frame so as to minimize loosening due to vibration.

8.8(101)T.III **Electrical equipment and lighting.** Tank trucks, tank trailers, and tank * * * 1966 IDR 544 against physical damage.

8.9(101)T.III Trailers and semitrailers.

8.9(1) All trailers shall be firmly and * * * 1966 IDR 544 safety chains.

8.9(2) Every trailer or semitrailer shall * * * 1966 IDR 544 the vehicle drawing the trailer.

8.9(3) Every trailer or semitrailer shall be provided with side lights and a taillight.

8.9(4) Four-wheeled trailers shall be of * * * 1966 IDR 544 vehicle.

8.9(5) Where a fifth wheel is employed, it * * * 1966 IDR 544 two units, except by manual release.

8.9(6) Any loaded trailer or semitrailer * * * 1966 IDR 544 communicate with the vapor space.

8.10(101)T.III **Metallic connections.** Tank, chassis, axles and springs shall be metallically connected.

8.11(101)T.III **Exhaust systems.**

8.11(1) The exhaust system, including muffler * * * 1966 IDR 544 pumps or piping.

8.11(2) Muffler cutout shall not be used.

8.12(101)T.III **Extinguishers required.** * * * 1966 IDR 544 content of not less than fifteen pounds.

8.13(101)T.III **Smoking prohibited.** Tank * * * 1966 IDR 544 tank truck or tank trailer.

8.14(101)T.III **Protection against collision.** * * * 1966 IDR 545 in case of collision.

8.15(101)T.III **Chock blocks.** Each * * * 1966 IDR 545 loading and unloading.

8.16(101)T.III **Skid tanks.** Skid tanks * * * 1966 IDR 545 requirements of this division and with section 7.6(7).

8.17(101)T.III **Truck transportation of LP-Gas containers.**

8.17(1) Portable containers containing * * * 1966 IDR 545 product in it is being transported.

8.17(2) Containers not considered portable * * * 1966 IDR 545 is being transported.

8.18(101)T.III **Movable fuel storage tenders and farm carts.**

8.18(1) Applicable basic rules shall apply to these units.

8.18(2) Valves, piping, fittings and * * * 1966 IDR 545 collision or upset.

8.18(3) Threaded piping shall not be less * * * 1966 IDR 545 two hundred fifty p.s.i.g.

8.18(4) These units shall not be refilled on a public road or highway. [Filed June 22, 1962]

8.19(101)T.III **Parking and garaging LP-Gas tank vehicles.**

8.19(1) Except in an emergency, tank vehicles * * * 1966 IDR 545 lighted at point of parking.

8.19(2) Tank vehicles containing LP-Gas shall * * * 1966 IDR 545 or is designed for such use.

8.19(3) LP-Gas tank vehicles garaged for service on the chassis or engine shall observe the following rules:

a. All primary shutoff valves shall be * * * 1966 IDR 545 the vehicle into the building.

b. The system shall be checked for any * * * 1966 IDR 545 moved inside the building.

c. The cargo container shall be gauged * * * 1966 IDR 545 capacity according to 5.19(1). If overfilled, it shall be corrected before the vehicle is moved inside the building.

d. The vehicle shall not be parked * * * 1966 IDR 545 a blower type heater.

e. Unless the product is removed from * * * 1966 IDR 545 to tamper with the tank valves or fittings.

8.19(4) The provisions of 8.19(1) shall * * * 1966 IDR 545 gas containers.

8.19(5) Repair work shall not be done on * * * 1966 IDR 545 container contains product. [Filed June 22, 1962]

CHAPTER 9

DIVISION IV

LIQUEFIED PETROLEUM GAS AS A MOTOR FUEL

Division IV applies to internal combustion * * * 1966 IDR 545 wise noted in the basic rules.

9.1(101)T.III **General.**

9.1(1) Fuel may be used from the cargo * * * 1966 IDR 545 viding wheels are securely blocked.

9.1(2) Passenger carrying vehicles shall not be fueled with passengers aboard.

9.1(3) Industrial tractors and lift trucks * * * 1966 IDR 545 shall comply with the provisions of division VII.

9.1(4) Agricultural vehicles and mobile * * * 1966 IDR 545 down during refueling operations. [Amended June 22, 1962]

9.2(101)T.III **Design working pressure and classification of fuel containers.**

9.2(1) Fuel containers for use on other than * * * 1966 IDR 546

200 215 200 250

9.2(2) Fuel containers for use in industrial * * * 1966 IDR 546 p.s.i.g. or minimum container type 250.

9.2(3) All container inlets and outlets * * * 1966 IDR 546 Labels may be on valves.

9.2(4) Containers manufactured and main- * * * 1966 IDR 546 and marking requirements.

9.3(101)T.III Location of fuel supply containers.

9.3(1) Containers shall be located in a * * * 1966 IDR 546 be shielded against direct heat radiation.

9.3(2) Containers shall be installed with * * * 1966 IDR 546 tainer or housing, whichever is lower.

9.3(3) Fuel containers for engine on buses, * * * 1966 IDR 546 jarring loose, slipping, or rotating of cylinders.

9.3(4) Containers shall be secured in place * * * 1966 IDR 546 by the tank manufacturer.

9.3(5) Containers from which vapor only is * * * 1966 IDR 546 accidental withdrawal of liquid.

9.4(101)T.III Valves and accessories.

9.4(1) Container valves and accessories * * * 1966 IDR 546 fied petroleum gas service.

9.4(2) The filling connection shall be * * * 1966 IDR 546 readily accessible.

9.4(3) With the exceptions of 9.4(4) "c" * * * 1966 IDR 546 by any of the authorities listed in 5.7(101)T.III.

9.4(4) Liquid level gauging devices:

a. Variable liquid level gauges which * * * 1966 IDR 546 dustrial tractors and lift trucks.

b. Permanently mounted fuel containers shall be equipped with a fixed length dip tube gauge, in accordance with Appendix E.

c. In the case of containers used solely * * * 1966 IDR 546 size of the opening.

9.4(5) All valves and connections on containers * * * 1966 IDR 546 be permanently attached to the container.

9.4(6) Exchange of removable fuel containers * * * 1966 IDR 547 methods:

a. Using an approved automatic quick- * * * 1966 IDR 547 directions when uncoupled) in the fuel line, or

b. Closing the valve at the fuel container * * * 1966 IDR 547 in the line is consumed.

9.5(101)T.III Piping, tubing and fittings.

9.5(1) All piping from fuel container to * * * 1966 IDR 547 Approved flexible connections (see 5.14(101)T.III) * * * 1966 IDR 547 listed in 5.7(1). The use of aluminum * * * 1966 IDR 547 and the fuel line.

9.5(2) All piping shall be installed, * * * 1966 IDR 547 strains or wear.

9.6(101)T.III Safety devices. Refer also to 5.15(101)T.III)

9.6(1) Spring-loaded internal type safety * * * 1966 IDR 547 containers.

9.6(2) The discharge outlet from safety * * * 1966 IDR 547 Loose fitting rain caps shall be used.

9.6(3) When a discharge line from the * * * 1966 IDR 547 valve is in the full open position.

9.7(101)T.III Vaporizers.

9.7(1) Vaporizers and any part thereof and * * * 1966 IDR 547 of at least two hundred fifty pounds p.s.i.g.

9.7(2) Each vaporizer shall have a valve * * * 1966 IDR 547 or other heating medium.

9.7(3) Vaporizers shall be securely fastened * * * 1966 IDR 547 loosened.

9.7(4) Each vaporizer shall be permanently marked at a visible point as follows:

a. With design working pressure of the * * * 1966 IDR 547 inch gauge.

b. With the water capacity of the fuel containing portion of the vaporizer in pounds.

9.7(5) Devices to supply heat directly to * * * 1966 IDR 547 the fuel container.

9.7(6) Exhaust gases shall not be used as a direct means of heat supply for vaporization of fuel.

9.7(7) Vaporizers shall not be equipped with fusible plugs.

9.8(101)T.III Gas regulating and mixing equipment.

9.8(1) Approved automatic pressure reducing * * * 1966 IDR 547 of the fuel delivered to the gas-air mixer.

9.8(2) An approved automatic shut-off * * * 1966 IDR 547 engine installations.

9.8(3) The source of the air for combustion * * * 1966 IDR 547 ditioning system.

9.9(101)T.III Capacity of containers. No * * * 1966 IDR 547 provided in 9.1(1).

9.10(101)T.III Stationary or portable engines in buildings.

9.10(1) All engine rooms shall be well ventilated at the floor level.

9.10(2) When engines are installed below * * * 1966 IDR 547 * * * 1966 IDR 548 engine the room shall be ventilated.

9.10(3) Automatic fire doors shall be * * * 1966 IDR 548 open into other sections of the building.

9.10(4) Exhaust gases shall be discharged * * * 1966 IDR 548 create a fire or any other hazard.

9.10(5) Regulators and pressure relief * * * 1966 IDR 548 off valve required in 9.8(2) is installed immediately ahead of such devices.

9.10(6) An approved flexible hose connection * * * 1966 IDR 548 damage from vibration.

CHAPTER 10

DIVISION V

STORAGE OF CONTAINERS NOT INSTALLED FOR USE AT FINAL UTILIZATION POINT

Containers stored or in the process of * * * 1966 IDR 548 not covered by the provisions of this division.

10.1(101)T.III Storage on premises of user.

10.1(1) Containers on the premises of users * * * 1966 IDR 548 to containers connected for use in 5.11(101)T. * * * 1966 IDR 548 follows:

a. Cylinders, stored inside a building * * * 1966 IDR 548 room or compartment or in a special building.

b. Containers carried as a part of * * * 1966 IDR 548 capacity in "a"; when such vehicles are stored * * * 1968 IDR 548 tainer valves shall be closed.

c. Cylinders may be stored in the open * * * 1966 IDR 548 storage and when shipped.

d. Storage rooms or compartments. Where * * * 1966 IDR 548 cap in place.

10.2(101)T.III Storage for resale.

10.2(1) If containers other than ICC * * * 1966 IDR 548 when connected for use in section 5.11(101)T.III.

10.2(2) ICC containers may be stored in a * * * 1966 IDR 548 of public gathering.

10.2(3) Containers may be stored in the * * * 1966 IDR 549 caps shall be deemed adequate.

10.2(4) Where the storage exceeds ten * * * 1966 IDR 549 busy main thoroughfares.

10.2(5) Readily combustible material shall * * * 1966 IDR 549 fire away, shall be conspicuously posted.

10.2(6) Containers of LP-Gas shall not be * * * 1966 IDR 549 be limited to a total of twenty-four such units.

10.3(101)T.III General.

10.3(1) Containers in storage shall have valves closed even though they may be empty.

10.3(2) Containers which require valve * * * 1966 IDR 549 hand tight while in storage.

CHAPTER 11

DIVISION VI

Division VI applies specifically to systems * * * 1966 IDR 549 the basic rules.

11.1(101)T.III Construction of containers.

11.1(1) Containers shall be constructed * * * 1966 IDR 549 provided in 11.1(2).

11.1(2) Cylinders fabricated and marked * * * 1966 IDR 549 forth in this division.

11.2(101)T.III Marking of containers. * * * 1966 IDR 549 commerce commission regulations may be used.

11.3(101)T.III Description of a division VI * * * 1966 IDR 549 relief valves.

11.4(101)T.III Location of containers and regulating equipment.

11.4(1) No container shall be installed, * * * 1966 IDR 549 fire marshal.

11.4(2) Containers, control valves, and * * * 1966 IDR 549 hitch as practicable.

11.4(3) Systems may be installed in a recess * * * 1966 IDR 549 and accessible from and vented to the outside.

11.4(4) There shall be no fuel connection between vehicle units such as a tractor and trailer.

11.4(5) Container or container carrier shall * * * 1966 IDR 549 weight of the container.

11.5(101)T.III Container valves and accessories.

11.5(1) Valves in the assembly of a two- * * * 1966 IDR 549 matic change-over device is not required.

11.5(2) Shutoff valves on the containers * * * 1966 IDR 549 follows:

a. By setting into recess of container * * * 1966 IDR 549 container is dropped upon a flat surface, or

b. By ventilated cap or collar fastened * * * 1966 IDR 549 to valve.

11.6(101)T.III Safety devices.

11.6(1) ICC containers shall be provided * * * 1966 IDR 549 commission.

11.6(2) Containers constructed in accordance * * * 1966 IDR 549 by 5.15(101)T.III hereof.

11.6(3) The delivery side of the gas * * * 1966 IDR 549 the regulator.

11.6(4) Whenever equipment, such as a * * * 1966 IDR 549 * * * 1966 IDR 550 specifications of 5.12(3).

11.7(101)T.III System design and service line pressure.

11.7(1) Systems shall be of the vapor-withdrawal type.

11.7(2) Vapor, at a pressure not over * * * 1966 IDR 550 the appliances.

11.8(101)T.III System inclosure and mounting.

11.8(1) Housings or inclosure shall be designed to provide proper ventilation.

11.8(2) Hoods, domes, or portions of * * * 1966 IDR 550 from working loose during transit.

11.8(3) Provisions shall be incorporated in * * * 1966 IDR 550 transit.

11.8(4) Containers shall be mounted on a * * * 1966 IDR 550 vehicle chassis.

11.8(5) Road clearance shall be as follows:

a. In the case of trailer coaches, when * * * 1966 IDR 550 provide sufficient road clearance.

b. In the case of a commercial vehicle, * * * 1966 IDR 550 maximum spring deflection.

11.9(101)T.III Piping and fittings.

11.9(1) Regulators shall be of lightweight * * * 1966 IDR 550 flexible connection.

11.9(2) An expansion loop in the gas service * * * 1966 IDR 550 piping shall be used.

11.9(3) Piping, tubing and fittings shall meet the specifications in 5.13(1) and 5.13(3) * * * 1966 IDR 550 0.032 inch, shall be used for gas service lines.

11.9(4) Approved gas tubing fittings shall be employed for making tubing connections.

11.9(5) The fuel line shall be firmly * * * 1966 IDR 550 chafing.

11.9(6) The fuel line shall be installed * * * 1966 IDR 550 the floor and outside the vehicle.

11.9(7) All parts of the system assembly * * * 1966 IDR 550 such parts working loose during transit.

11.10(101)T.III Appliances.

11.10(1) All gas consuming appliances shall * * * 1966 IDR 550 coach or cargo heating certified as follows:

a. Determined by a nationally recognized * * * 1966 IDR 550 provisions of this section, or

b. Approval by the state fire marshal.

11.10(2) In the case of trailer coaches, * * * 1966 IDR 550 products of combustion to the outside.

11.10(3) Provisions shall be made to insure an adequate supply of air for combustion.

11.10(4) All gas-fired space heaters and * * * 1966 IDR 550 the pilot flame is extinguished.

11.10(5) Gas-fired appliances installed in * * * 1966 IDR 550 readily accessible.

11.10(6) Appliances shall be constructed * * * 1966 IDR 550 cargo shifting or handling.

11.10(7) Appliances shall be located inside * * * 1966 IDR 551 block all egress of persons from the vehicle.

11.11(101)T.III General precautions.

11.11(1) Containers, except those covered in 11.6(2) shall be marked, maintained and * * * 1966 IDR 551 the interstate commerce commission.

11.11(2) No container shall be charged with * * * 1966 IDR 551 tare weight of the container in pounds.

11.11(3) No ICC container shall be refilled * * * 1966 IDR 551 Regulations.

11.11(4) No ASME or API-ASME container * * * 1966 IDR 551 service.

11.11(5) No container shall be filled without the consent of the owner thereof.

11.11(6) A permanent caution plate shall * * * 1966 IDR 551 items.

Warning

a. Be sure all appliance valves are closed before opening container valve.

b. Connections at the appliances, regu- * * * 1966 IDR 551 for leaks with soapy water or its equivalent.

c. Never use a match or flame when checking for leaks.

d. Container shutoff valves of trailer-coach systems shall be closed when vehicle is in transit.

11.12(101)T.III Filling of containers.

11.12(1) Containers shall be filled in accordance with 5.25(1) and one of the following:

- a. At a properly equipped container * * * 1966 IDR 551 unattended.
- b. At a trailer coach location directly * * * 1966 IDR 551 as public streets or highways.

CHAPTER 12**DIVISION VII****LIQUEFIED PETROLEUM GAS
SERVICE STATIONS**

Division VII applies to storage containers, * * * 1966 IDR 551 constructed.

12.1(101)T.III Design working pressure and classification of storage containers.

12.1(1) Storage containers shall be designed and classified as follows:

* * * 1966 IDR 551

12.2(101)T.III Container valves and accessories.

12.2(1) A filling connection on the container shall be fitted with one of the following:

- a. A combination back-pressure check and excess flow valve.
- b. One double or two single back-pressure valves.
- c. A positive shutoff valve, in conjunction with either:
 - (1) An internal back-pressure valve, or
 - (2) An internal excess flow valve.

In lieu of an excess flow valve, filling * * * 1966 IDR 551 exceed 220°F.

12.2(2) A filling pipe inlet terminal not * * * 1966 IDR 551 flow check valve.

12.2(3) All openings in the container except * * * 1966 IDR 551 excess flow check valves:

- a. Filling connections as provided in 12.2(1).
- b. Safety relief connections as provided in 5.12(2).
- c. Liquid level gauging devices as provided in 5.12(4), 5.25(4) and 5.25(9).
- d. Pressure gauge connections as provided in 5.12(5).

12.2(4) All container inlets and outlets * * * 1966 IDR 551 or liquid (labels may be on valves):

- a. Safety relief valves.
- b. Liquid level gauging devices.
- c. Pressure gauges.

12.2(5) Each storage container shall be provided with a suitable pressure gauge.

12.3(101)T.III Safety relief valves.

12.3(1) All safety relief devices shall be installed as follows:

- a. On the container and directly connected with the vapor space.
- b. Safety relief valves and discharge * * * 1966 IDR 552 restrictions in the discharge piping.
- c. The discharge from two or more safety * * * 1966 IDR 552 area of the individual discharges.
- d. Discharge from any safety relief device shall not terminate in any building nor beneath any building.

12.3(2) Aboveground containers shall be provided with safety relief valves as follows:

- a. The rate of discharge, which may be * * * 1966 IDR 552 less than that specified in Appendix A.
- b. The discharge from safety relief * * * 1966 IDR 552 product escaping from the drain. (See 5.15(9).)

12.3(3) Underground containers shall be provided with safety relief valves as follows:

- a. The discharge from safety relief * * * 1966 IDR 552 physical damage.
- b. Where there is a probability of the * * * 1966 IDR 552 the highest probable water level.
- c. If no liquid is put into a container * * * 1966 IDR 552 uncovered until emptied of liquid fuel.

12.4(101)T.III Capacity of liquid containers. * * * 1966 IDR 552 exceed 30,000 gallons water capacity.

12.5(101)T.III Installation of storage containers.**12.5(1) General.**

- a. Each storage container used exclusively * * * 1966 IDR 552 of other than wood frame construction.
- b. In heavily populated or congested * * * 1966 IDR 552 other reasonable protective methods.
- c. Readily ignitable material including * * * 1966 IDR 552 within ten feet of containers.
- d. The minimum separation between LP-Gas * * * 1966 IDR 552 dike shall be ten feet.
- e. LP-Gas containers located near flammable * * * 1966 IDR 552 diking, diversion curbs, or grading.
- f. LP-Gas containers shall not be located * * * 1966 IDR 552 tainers.
- g. Field welding is permitted only on * * * 1966 IDR 552 by the container manufacturer.

h. When permanently installed containers * * * 1966 IDR 552 interconnecting such containers.

i. Where high water table or flood con- * * * 1966 IDR 552 container flotation shall be provided.

12.5(2) Aboveground containers.

a. Containers may be installed horizontally or vertically.

b. Containers shall be protected by * * * 1966 IDR 552

c. Container foundations shall be of sub- * * * 1966 IDR 553 hundred gallons or less.

12.5(3) *Underground containers.*

a. Containers shall be given a protective * * * 1966 IDR 553 backfilling.

b. Containers shall be set on a firm * * * 1966 IDR 553 abrasive materials.

c. A minimum of two feet of earth cover * * * 1966 IDR 553 loads on the container shell.

12.6(101)T.III *Protection of container* * * * 1966 IDR 553 controls in case of emergency.

12.7(101)T.III *Transport truck unloading point.*

12.7(1) During unloading, the transport truck shall be parked clear of public thoroughfares (see 5.22(101) T.III) and at least twenty feet from storage container.

12.7(2) The filling pipe inlet terminal * * * 1966 IDR 553 It shall be protected against physical damage.

12.8(101)T.III *Piping, valves and fittings.*

12.8(1) Piping may be underground, above- * * * 1966 IDR 553 damage and corrosion.

12.8(2) Piping laid beneath drive- ways shall * * * 1966 IDR 553 vehicles.

12.8(3) Piping shall be wrought iron or * * * 1966 IDR 553 welded.

12.8(4) All shutoff valves (liquid or gas) * * * 1966 IDR 553 at least two hundred fifty p.s.i.g.

12.8(5) All materials used for valve seats, * * * 1966 IDR 553 resistant to the action of LP-Gas.

12.8(6) Fittings shall be steel, malle- able * * * 1966 IDR 553 not be used.

12.8(7) All piping shall be tested after * * * 1966 IDR 553 than normal operating pressures.

12.8(8) Provision shall be made for * * * 1966 IDR 553 flexible connections.

12.9(101)T.III *Pumps and accessories.* All * * * 1966 IDR 553 charge to storage container or pump suction.

12.10(101)T.III *Dispensing devices.*

12.10(1) Meters, vapor separators, valves, * * * 1966 IDR 553 fifty p.s.i.g.

12.10(2) Pumps used to transfer LP- Gas shall * * * 1966 IDR 553 fire or accident.

12.10(3) A manual shutoff valve and an * * * 1966 IDR 553 inlet.

12.10(4) *Dispensing hose.*

a. Hose shall be resistant to the action * * * 1966 IDR 553 hundred fifty p.s.i.g.

b. An excess flow check valve or automatic * * * 1966 IDR 553 the dispensing hose.

12.10(5) *Location.*

a. LP-Gas dispensing devices shall be * * * 1966 IDR 553 * * * 1966 IDR 554 systems used for other purposes.

b. LP-Gas dispensing devices shall be * * * 1966 IDR 554 adequately protected from physical damage.

c. LP-Gas dispensing devices shall not be * * * 1966 IDR 554 ventilated.

12.10(6) The dispensing of LP-Gas into the * * * 1966 IDR 554 operation.

12.11(101)T.III *Safety rules.* There shall * * * 1966 IDR 554 shut off during the fueling operations.

12.12(101)T.III *Electrical.* Electrical * * * 1966 IDR 554 Code or its equivalent.

CHAPTER 13

DIVISION VIII

INSTALLATION OF LIQUEFIED PETROLEUM GAS PIPING AND LIQUEFIED PETROLEUM GAS APPLIANCES IN BUILDINGS

13.1(101)T.III *General.*

13.1(1) No person, unless in the employ * * * 1966 IDR 554 system.

13.1(2) Installation of all gas piping or * * * 1966 IDR 554 off to eliminate hazards from escape of gas.

13.1(3) The service line from containers shall enter the building above the grade level. [Amended January 15, 1960]

13.2(101)T.III *Piping, tubing and fittings.*

13.2(1) Piping shall be wrought iron or * * * 1966 IDR 554 walls or insulation.

13.2(2) Pipe joints may be screwed, flanged, * * * 1966 IDR 554 exceeding 1000° F.

13.2(3) Gas appliances may be connected * * * 1966 IDR 554 of these rules:

a. End fittings shall be screw type or union type permanently attached.

b. The method of attaching tubing * * * 1966 IDR 554 appliance shall conform with paragraph 2^b.

13.2(4) After installation, the piping and * * * 1966 IDR 554 be made with a flame.

13.3(101)T.III Installation of piping and tubing.

13.3(1) Provision shall be made for expansion, * * * 1966 IDR 554 connections.

13.3(2) Piping or tubing shall be well supported and protected against physical damage.

13.3(3) Where condensation may occur, the * * * 1966 IDR 554 of the condensate.

13.3(4) Compounds used in making up joints shall be resistant to the action of LP-Gas.

13.3(5) Tubing shall not be run inside walls * * * 1966 IDR 554 which is run through walls or partitions.

13.3(6) Gas piping shall not be used as * * * 1966 IDR 554 electrical wiring.

13.3(7) Piping shall be of such size and * * * 1966 IDR 554 pipe depends upon the following factors:

a. Allowable loss in pressure from source to appliance.

b. Maximum gas consumption to be provided for.

c. Length of pipe and number of fittings.

d. Specific gravity of the gas.

13.3(8) Piping or tubing should be free * * * 1966 IDR 555 material at the time of appliance installation.

13.3(9) Defective pipe or tubing or fittings * * * 1966 IDR 555 shall be replaced.

13.3(10) Pipe, fittings, valves, etc., * * * 1966 IDR 555 suitable for the service.

13.3(11) Pipe with threads which are * * * 1966 IDR 555 of the pipe shall not be used.

13.3(12) Gas pipe or tubing inside any * * * 1966 IDR 555 proper ducts for the purpose.

13.3(13) Each outlet, including a valve or * * * 1966 IDR 555 plugs, corks, etc.

13.3(14) No device shall be placed inside * * * 1966 IDR 555 free flow of gas.

13.3(15) Before turning gas under pressure * * * 1966 IDR 555 can escape shall be closed.

13.3(16) Piping in floors: Gas piping in * * * 1966 IDR 555 damage to the building. [Amended January 15, 1960]

13.4(101)T.III Use of approved appliances.

13.4(1) New domestic and commercial gas- * * * 1966 IDR 555 following:

a. Determined by a nationally recognized * * * 1966 IDR 555 compliance with the provisions of this section.

b. Approval by the state fire marshal.

13.4(2) Any appliance that was originally * * * 1966 IDR 555 with LP-Gas before the appliance is placed in use.

13.4(3) Any automatically controlled * * * 1966 IDR 555 shall also be so equipped.

13.5(101)T.III Appliance installation requirements.

13.5(1) Air for combustion.

a. Appliances shall be installed in a * * * 1966 IDR 555 construction:

(1) In buildings of conventional frame, * * * 1966 IDR 555 draft hood dilution.

(2) Where appliances are installed in * * * 1966 IDR 555 of 13.5(1) "a"(3). If necessary, continuous * * * 1966 IDR 555 not less than three inches.

(3) Where appliances are installed in * * * 1966 IDR 555 * * * 1966 IDR 556 opening must be horizontal or pitched upward.

(4) Where appliances are installed * * * 1966 IDR 556 three inches.

(5) Operation of exhaust fans, kitchen * * * 1966 IDR 556 unsatisfactory appliance operation.

13.5(2) Gas appliances shall not be installed * * * 1966 IDR 556 possible ignition of the flammable vapors.

13.5(3) Every appliance shall be located * * * 1966 IDR 556 operation and servicing.

13.5(4) Gas appliances shall be adequately * * * 1966 IDR 556 to exert undue strain on the connections.

13.5(5) No device or attachment shall be * * * 1966 IDR 556 way impair the combustion of gas.

13.5(6) Any combination of appliances, * * * 1966 IDR 556 apply to the individual appliance.

13.5(7) Where air or oxygen under pressure * * * 1966 IDR 556 or oxygen from passing back into the gas piping.

13.5(8) Nonportable appliances shall be * * * 1966 IDR 556 thereof as set out in 13.2(1).

13.5(9) Only appliances which are fully * * * 1966 IDR 556 connectors of flexible metal tubing and fittings.

13.5(10) Only listed gas hose shall be used. * * * 1966 IDR 556 to excessive temperatures (above 125°F.)

13.5(11) Where gas hose connection is made, * * * 1966 IDR 556 except as provided by 13.5(9). A gas shutoff * * * 1966 IDR 556 the burner of the appliance.

13.5(12) Gas hose shall be of adequate capacity, * * * 1966 IDR 556 made and separated.

13.5(13) Where gas hose is used, it shall * * * 1966 IDR 556 location.

13.5(14) No devices employing or depending * * * 1966 IDR 556 pressure or the escape of gas.

13.5(15) The gas piping shall not be used * * * 1966 IDR 556 as part of the appliance.

13.5(16) The electrical circuit employed * * * 1966 IDR 556 appliance.

13.5(17) All gas appliances using electrical * * * 1966 IDR 556 * * * 1966 IDR 557 electrical circuit.

13.5(18) A room temperature thermostat * * * 1966 IDR 557 controlling the room temperature.

13.5(19) Any hole in the plaster or panel * * * 1966 IDR 557 prevent drafts from affecting the thermostat.

13.6(101)T.III Domestic ranges.

13.6(1) The location of a domestic gas range shall be such as not to constitute a hazard to persons or property. In the application of this requirement, appropriate consideration shall be given to the design and construction of the range and the combustibility of the floor, wall or partition. Listed domestic gas ranges (except bungalow and dual oven type combination gas ranges, for which see 13.6(3)) when installed on combustible floors shall be set on their own bases or legs and shall be installed with clearances not less than shown in Table 1. In no case shall the clearance be such as to interfere with the requirements for combustion air and accessibility. See 13.5(1) and 13.5(3). Unlisted domestic gas ranges shall be installed with at least a six-inch clearance from back and sides. Combustible floors under unlisted ranges shall be protected.

TABLE 1—MINIMUM CLEARANCE FOR LISTED DOMESTIC GAS RANGES Distance from Combustible Construction * * * 1966 IDR 557.

13.6(2) Where a flue or vent connector is attached * * * 1966 IDR 557 construction from excessive temperatures. (See 13.26(7).) By combustible construction is meant * * * 1966 IDR 557 sition or of wooden studding and wood lath and plaster.

13.6(3) Domestic gas ranges shall have a verti- * * * 1966 IDR 557 range.

13.6(4) All gas ranges shall be installed so that the cooking top and oven racks are level.

13.6(5) Bungalow type domestic gas ranges or * * * 1966 IDR 557 to the supplementary fuel section of the range.

13.7(101)T.III Water heaters.

13.7(1) Water heaters shall not be installed * * * 1966 IDR 557 with 13.27(101)T.III.

13.7(2) Water heaters shall be located as close * * * 1966 IDR 557 fixtures.

13.7(3) Listed gas-fired water heaters shall * * * 1966 IDR 557 accessibility. See paragraphs 13.5(1) and 13.5(3). * * * 1966 IDR 557 be protected.

TABLE 2

MINIMUM CLEARANCES FOR LISTED GAS-FIRED WATER HEATERS

Distance from Combustible Construction—Inches * * * 1966 IDR 557.

and tested for installation flush to wall.

13.7(4) Water heaters shall be connected in a * * * 1966 IDR 558 servicing.

13.7(5) No water heater shall be installed in * * * 1966 IDR 558 water pressure relief valve is provided.

13.7(6) The installation and adjustment of tem- * * * 1966 IDR 558 devices.

13.7(7) The water supply to any automatic * * * 1966 IDR 558 the top floor.

13.7(8) The method of connecting the circulating * * * 1966 IDR 558 tank.

13.7(9) The size of the water circulating piping, * * * 1966 IDR 558 water connections of the heater.

13.7(10) A suitable water valve or cock, * * * 1966 IDR 558 the tank.

13.7(11) Means acceptable to the proper administra- * * * 1966 IDR 558 near the top is commonly accepted for this purpose.

13.8(101)T.III Room or space heaters.

13.8(1) A room or space heater shall be placed * * * 1966 IDR 558 combustion

air and accessibility. (See 13.5(1) and 13.5(3).)

13.8(2) Unlisted room or space heaters shall be * * * 1966 IDR 558 struction not less than the following:

a. *Circulating Type.* Room heaters having an * * * 1966 IDR 558 of not less than twelve inches.

b. *Radiating Type.* Room heaters other than * * * 1966 IDR 558 twelve inches at rear.

TABLE 3

MINIMUM CLEARANCES FOR LISTED GAS-FIRED ROOM HEATERS

Distance from Combustible Construction * * * 1966 IDR 558

Water Radiators	6	2
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c. Combustible floors under unlisted room or space heaters shall be protected.

13.9(101)T.III Wall type room heaters.

13.9(1) Wall type room or space heaters shall * * * 1966 IDR 558 unless approved for such installations.

13.9(2) Room or space heaters shall be vented as specified by 13.23(101)T.III. It is recommended * * * 1966 IDR 558 matic pilot.

13.10(101)T.III Central heating boilers and furnaces.

13.10(1) Where a complete shutoff type automatic * * * 1966 IDR 558 the manual pilot gas valve.

13.10(2) Where a complete shutoff type auto- * * * 1966 IDR 558 pilot gas.

13.10(3) A union connection shall be provided * * * 1966 IDR 558 permit removal of the controls.

13.10(4) Listed central heating boilers and * * * 1966 IDR 558 bility. See 13.5(1) and 13.10(6). Unlisted central * * * 1966 IDR 558 inches for appliances of the following types:

a. Mechanical warm air furnaces which are * * * 1966 IDR 558 * * * 1966 IDR 559 be set higher than two hundred fifty degrees F.

b. Hot water and steam boilers operating * * * 1966 IDR 559 masonry or other satisfactory insulating material.

13.10(5) A central heating boiler or furnace * * * 1966 IDR 559 in an approved manner.

13.10(6) The installation of central heating * * * 1966 IDR 559 such attention.

TABLE 4

MINIMUM CLEARANCES FOR LISTED CENTRAL HEATING BOILERS AND FURNACES

Distance from Combustible Construction —Inches

* * * 1966 IDR 559

A vertical clearance of six inches may be used with * * * 1966 IDR 559 hundred fifty degrees F.

13.10(7) The method of connecting the flow and * * * 1966 IDR 559 facilitate a rapid circulation of steam or water.

13.10(8) A steam or hot water boiler shall be * * * 1966 IDR 559 drained, also shall be provided.

13.10(9) Steam and hot water boilers shall be * * * 1966 IDR 559 water boiler.

13.10(10) A plenum chamber when not a part of * * * 1966 IDR 559 proper circulation of air.

13.11(101)T.III Recessed heaters.

13.11(1) Listed recessed heaters may be installed * * * 1966 IDR 559 instructions.

13.11(2) Recessed heaters shall be located so as * * * 1966 IDR 559 building.

13.11(3) A manual main shutoff valve shall be * * * 1966 IDR 559 pilot gas valve.

13.11(4) The installation of recessed heaters * * * 1966 IDR 559 to the building construction.

13.11(5) Adequate combustion and circulating air shall be provided. (See 13.5(1).)

13.12(101)T.III Floor furnaces.

13.12(1) Listed floor furnaces may be installed * * * 1966 IDR 559 shall not be installed in combustible floors.

13.12(2) A separate manual main shutoff valve * * * 1966 IDR 559 floor furnace.

13.12(3) Fixed ventilation by means of a duct * * * 1966 IDR 559 as to insure proper combustion.

13.12(4) The following are requirements that * * * 1966 IDR 559 furnaces to serve one story:

a. No floor furnace shall be installed in * * * 1966 IDR 559 any exit way from any such room or space.

b. *Walls and Corners:* With the exception * * * 1966 IDR 559 than six inches to a corner.

c. *Draperies:* The furnace shall be so placed * * * 1966 IDR 559 register of the furnace.

d. Central Locations: Generally speaking, * * * 1966 IDR 559 winds.

13.12(5) The floor around the furnace shall be * * * 1966 IDR 559 lighter than the joists.

13.12(6) Means shall be provided to support the furnace when the floor grille is removed.

13.12(7) The lowest portion of the floor furnace * * * 1966 IDR 560 have an eighteen-inch clearance.

13.12(8) Provision shall be made for access to * * * 1966 IDR 560 four inches wide.

13.12(9) Whenever the excavation exceeds twelve * * * 1966 IDR 560 service access.

13.12(10) Floor furnaces shall be protected, where necessary, against severe wind conditions.

13.12(11) Listed gas floor furnaces may be * * * 1966 IDR 560 of 13.12(3) with access facilities for servicing on * * * 1966 IDR 560 on metal lath or material of equal fire resistance.

13.13(101)T.III Duct furnaces.

13.13(1) Listed gas-fired duct furnaces shall * * * 1966 IDR 560 (See 13.5(1).) Unlisted duct furnaces shall * * * 1966 IDR 560 for central heating furnaces and boilers, 13.13(4). Combustible floors under unlisted duct furnaces shall be protected.

13.13(2) A duct furnace shall be erected and * * * 1966 IDR 560 instructions.

13.13(3) The installation of duct furnaces shall * * * 1966 IDR 560 such attention.

13.13(4) The ducts connected to or inclosing * * * 1966 IDR 560 both upstream and downstream sides of the furnace.

13.13(5) The controls and draft hoods for duct * * * 1966 IDR 560 from which combustion air is taken.

13.13(6) Circulating air shall not be taken * * * 1966 IDR 560 located.

13.13(7) Duct furnaces when used in conjunction * * * 1966 IDR 560 downstream from the evaporator coil.

13.14(101)T.III Conversion burners. Installation * * * 1966 IDR 560 Gas Conversion Burners or its equivalent.

13.15(101)T.III Gas-fired unit heaters.

13.15(1) Suspended type gas-fired unit heaters * * * 1966 IDR 560 characteristics.

13.15(2) Listed gas-fired unit heaters shall * * * 1966 IDR 560 mounted unit heaters shall be protected.

13.15(3) The location of any unit heater or the * * * 1966 IDR 560 in which the unit heater is located.

13.15(4) A unit heater shall not be attached to * * * 1966 IDR 560 installation.

13.15(5) Unit heaters installed in garages * * * 1966 IDR 560 be installed at least eight feet above the floor.

13.16(101)T.III Clothes dryers.

13.16(1) Listed clothes dryers shall be installed * * * 1966 IDR 561 under unlisted clothes dryers shall be protected.

13.16(2) Gas-fired clothes dryers installed for * * * 1966 IDR 561 automatic pilots.

13.16(3) *Exhaust Moisture.* When gas-fired * * * 1966 IDR 561 and Air Conditioning Systems or its equivalent.

13.17(101)T.III Gas-fired incinerators.

13.17(1) Listed gas-fired incinerators shall be * * * 1966 IDR 561 floors unless the floor under the appliance is protected.

13.17(2) No draft hood shall be connected into * * * 1966 IDR 561 connected to a separate chimney flue. (See 13.27(7).)

13.17(3) Smoke pipes shall have at least * * * 1966 IDR 561 unless guarded at the point of passage, as specified in 13.26(8) "a".

13.17(4) The smoke pipe from an incinerator to * * * 1966 IDR 561 shall be secured by sheet metal screws.

13.18(101)T.III Gas refrigerators. Gas refrigerators * * * 1966 IDR 561 least a twelve-inch clearance above the top.

13.19(101)T.III Hot plates and laundry stoves.

13.19(1) Listed domestic hot plates and * * * 1966 IDR 561 laundry stoves shall be protected.

13.19(2) The vertical distance between tops * * * 1966 IDR 561 thirty-six inches.

13.20(101)T.III Hotel and restaurant ranges, deep-fat fryers and unit broilers.

13.20(1) Listed hotel and restaurant ranges, * * * 1966 IDR 561 use only in fireproof locations."

13.20(2) Hotel and restaurant ranges, deep-fat fryers * * * 1966 IDR 561 administrative authority.

a. Where the appliance is set on legs which * * * 1966 IDR 561 burner and the floor.

b. Where the appliance is set on legs * * * 1966 IDR 561 sides.

c. Where the appliance is set on legs * * * 1966 IDR 561 * * * 1966 IDR 562 obstruction.

d. Where the appliance does not have legs * * * 1966 IDR 562 wall or obstruction.

13.20(3) Listed hotel and restaurant ranges, * * * 1966 IDR 562 elsewhere.

13.20(4) Unlisted hotel and restaurant * * * 1966 IDR 562 circulation of air.

13.20(5) Any portion of combustible construction * * * 1966 IDR 562 of the cooking top.

13.20(6) All hotel and restaurant ranges, * * * 1966 IDR 562 installed level on a firm foundation.

13.20(7) Adequate means shall be provided to * * * 1966 IDR 562 operation of the equipment.

13.21(101)T.III Gas counter appliances.

13.21(1) A vertical distance of not less than * * * 1966 IDR 562 combustible construction.

13.21(2) Listed gas counter appliances, such * * * 1966 IDR 562 six inches from combustible construction.

13.21(3) Unlisted commercial hot plates and * * * 1966 IDR 562 appliances shall be protected.

13.22(101)T.III Portable gas baking and * * * 1966 IDR 562 baking and roasting ovens shall be protected.

13.23(101)T.III Venting of appliances.

13.23(1) Room heaters in sleeping quarters * * * 1966 IDR 562 of combustion.

13.23(2) *Requirements for Venting.* Gas * * * 1966 IDR 562 ject to limitations.

a. *Appliances required to be vented:* Appliances of the following types shall be flue * * * 1966 IDR 562 atmosphere:

(1) Central heating appliances including steam and hot water boilers, warm air furnaces, floor furnaces and vented recessed heaters,

(2) Unit heaters and duct furnaces,

(3) Gas-fired incinerators,

(4) Water heaters with inputs over five thousand B.t.u. per hour (see 13.23(2) "c" (1) for exceptions),

(5) Room heaters listed for vented use only. (See 13.23(1) covering installations in * * * 1966 IDR 563 gas ranges,

(6) Appliances equipped with gas conversion burners,

(7) Appliances which have draft hoods * * * 1966 IDR 563 see 13.23(1) covering installations in sleeping quarters and in institutions—and water heaters; see 13.23(2) "c" (1) for exceptions), and

(8) Unlisted appliances.

b. *Appliances not required to be vented—no limitations:*

(1) Listed gas ranges,

(2) Listed hot plates and laundry stoves, and

(3) Listed domestic clothes dryers (see 13.16(3) covering installation requirements of clothes dryers).

c. *Appliances not required to be vented—subject to limitations.*

(1) Listed automatic storage type * * * 1966 IDR 563 ments outlined in paragraphs below:

(2) Listed gas refrigerators,

(3) Counter appliances,

(4) Room heaters listed for unvented use (see 13.23(2) prohibiting installations in sleeping quarters and in institutions), and

(5) Other appliances listed for unvented use and not provided with flue collars.

The appliances named in 13.23(2) "c" may * * * 1966 IDR 563 adjacent room or space may be included in the calculations.

13.24(101)T.III Draft hoods.

13.24(1) Every vented appliance, except * * * 1966 IDR 563 the appliance flue collar.

13.24(2) Where the draft hood is a part of * * * 1966 IDR 563 combustion air supply.

13.24(3) A draft hood shall be installed in * * * 1966 IDR 563 adjacent construction.

13.24(4) Where the installer must supply a * * * 1966 IDR 563 use should be secured.

13.25(101)T.III Types of flues or vents.

13.25(1) Type A flues or vents shall be employed for venting:

a. All incinerators.

b. All appliances which may be converted readily to the use of solid or liquid fuels.

c. All boilers and warm-air furnaces * * * 1966 IDR 563 approve the use of Type B gas flues or vents.

13.25(2) Type B gas flues or vents shall * * * 1966 IDR 563 by 13.25(1) to be vented to Type A flues or vents.

13.25(3) For the purpose of this provision * * * 1966 IDR 563 the draft hood.

13.25(4) Type C gas flues or vents shall be * * * 1966 IDR 563 comply with provisions of 13.26(7) and 13.26(8).

13.26(10)T.III Flue or vent connectors.

13.26(1) The material used for the flue or * * * 1966 IDR 563 fire marshal shall be consulted.

13.26(2) The flue or vent connector shall be * * * 1966 IDR 563 excessive resistant to the flow of flue gases.

13.26(3) The flue or vent connector shall * * * 1966 IDR 563 run shall be free from any dips or sags.

13.26(4) Wherever sufficient head-room is * * * 1966 IDR 564 degree elbows be used.

13.26(5) The horizontal run of the connector * * * 1966 IDR 564 the degree elbows be used.

13.26(6) Flue or vent connectors shall be securely supported.

13.26(7) Where flue or vent connectors pass * * * 1966 IDR 564 be eighteen inches.

TABLE 5

FLUE OR VENT CONNECTOR CLEARANCES FOR LISTED APPLIANCES

* * * 1966 IDR 564

Incinerator	18 inches	Not permitted
-------------	-----------	---------------

13.26(8) Flue or vent connectors, other than * * * 1966 IDR 564 not smaller than the following:

a. For listed appliances, except floor * * * 1966 IDR 564 than the flue or vent connector.

b. For listed floor furnaces and all * * * 1966 IDR 564 connector.

c. For incinerators—twelve inches larger in diameter than the flue or vent connector.

13.26(9) The flue or vent connector shall * * * 1966 IDR 564 flue or vent.

TABLE 6

CLEARANCES WITH SPECIFIED FORMS OF PROTECTION

spaced out 1 in. with noncombustible spacers	2 inches	4 inches	9 inches
--	----------	----------	----------

13.26(10) No manually operated damper shall * * * 1966 IDR 564 as dampers.

13.26(11) A flue or vent connector shall not * * * 1966 IDR 564 opening unless the opening is permanently sealed.

13.27(10)T.III Flues or vents (natural draft venting).

13.27(1) Before connecting a flue or vent * * * 1966 IDR 564 to the outer air.

13.27(2) The flue or vent to which the flue * * * 1966 IDR 564 capacity of round pipe for which it is substituted.

13.27(3) The flue or vent shall extend high * * * 1966 IDR 564 horizontal.

13.27(4) In entering a chimney flue, the * * * 1966 IDR 564 nector for cleaning.

13.27(5) Cleanouts shall be of such construction * * * 1966 IDR 564 in use.

13.27(6) An automatically controlled gas * * * 1966 IDR 564 into one flue they shall be at different levels.

13.28(10)T.III Outside flues or vents. When * * * 1966 IDR 565 of the riser.

13.29(10)T.III Gas meter installation.

13.29(1) Location.

a. Gas meters shall be installed as near * * * 1966 IDR 565 and replacement.

b. The gas meter shall not be installed in small, unventilated or confined space.

c. A gas meter shall not be placed where * * * 1966 IDR 565 corrosion.

d. Gas meters shall be located at a safe * * * 1966 IDR 565 perature.

e. All piping from the point where the * * * 1966 IDR 565 be exposed and accessible.

13.29(2) Gas meter supports.

a. Gas meters shall be adequately supported * * * 1966 IDR 565 undue strain on the connection.

13.29(3) Capacity of meter.

a. The demand of common domestic appliances * * * 1966 IDR 565 water column drop in pressure through the meter.

APPENDIX A

Minimum required rate of discharge in cubic * * * 1966 IDR 565 the following formulas:

(1) Cylindrical container with hemispherical heads. Area=Overall length x outside diameter x 3.1416.

(2) Cylindrical container with semi-ellipsoidal heads. Area=(Overall length + .3 outside diameter) x outside diameter x 3.1416.

(3) Spherical container. Area=Outside diameter squared x 3.1416.

Flow Rate-CFM Air = Required flow capacity in * * * 1966 IDR 565
165 3530 550 9470

The rate of discharge may be interpolated for * * * 1966 IDR 565 of air for use in present Appendix A.

Air Conversion Factors Container Type				
100	125	150	175	200
1.162	1.142	1.113	1.078	1.010

APPENDIX B

MINIMUM REQUIRED RATE OF DISCHARGE FOR SAFETY RELIEF VALVES FOR LIQUEFIED PETROLEUM GAS VAPORIZERS (STEAM HEATED, WATER HEATED AND DIRECT FIRED.)

* * * 1966 IDR 565 directly in contact with LP-Gas.

2. Obtain the minimum required rate of discharge * * * 1966 IDR 566 total surface area.

APPENDIX C

METHOD OF CALCULATING MAXIMUM LIQUID VOLUME WHICH CAN BE PLACED IN A CONTAINER AT ANY LIQUID TEMPERATURE

The quantity of LP-Gas which may be placed * * * 1966 IDR 566 determined as follows:

$$V = \frac{D}{G \times F}$$

* * * 1966 IDR 566 the water capacity of the container by $\frac{V}{100}$.

APPENDIX E

METHOD OF CALCULATING MAXIMUM VOLUME OF LP-GAS WHICH CAN BE PLACED IN A CONTAINER FOR WHICH LENGTH OF FIXED DIP TUBE IS SET

1. It is impossible to set out in a table * * * 1966 IDR 566 by the following formula:

2. Formula for determining maximum volume of Liquefied Petroleum gas for which a fixed length of dip tube shall be set. * * * 1966 IDR 566

.590 1.020 1.010

3. The maximum volume of liquefied petroleum * * * 1966 IDR 566 container is calculated by the following formula:

$$\frac{\text{Maximum Vol. of LP-Gas (From Formula in (2) above)} \times 100}{\text{Total water content of container in gallons}} = \text{Per Cent of LP-Gas}$$

4. The maximum weight of liquefied petroleum * * * 1966 IDR 566
N. Butane..... 4.97 4.92

[Filed August 21, 1957]

CHAPTER 14

FLAMMABLE LIQUIDS CODE

Promulgated under authority of chapter 101 of the Code.

[Filed October 8, 1957]

14.1(101)T.III Definitions.

14.1(1) "Approved" is defined as being acceptable * * * 1966 IDR 566 * * * 1966 IDR 567 fire marshal.

14.1(2) "Barrel" shall mean a volume of forty-two U. S. gallons.

14.1(3) "Crude Petroleum" shall mean * * * 1966 IDR 567 not been processed in a refinery.

14.1(4) "Flammable Liquid" shall mean any * * * 1966 IDR 567 when they are so heated.

14.1(5) "Flash Point" shall mean the minimum * * * 1966 IDR 567 (A.S.T.M. D93-52).

14.1(6) "NFPA" means the National Fire Protection Association.

14.1(7) "Vapor Pressure" shall mean the * * * 1966 IDR 567 Association (A.S.A. Z11.44-1955).

14.1(8) "Container" shall mean any can, * * * 1966 IDR 567 stationary tanks, tank vehicles, and tank cars. [Amended January 15, 1960]

14.1(9) "Important Building" shall mean * * * 1966 IDR 567 occupancy. [Amended January 15, 1960]

14.1(10) *Modifications.* Modifications of * * * 1966 IDR 567 condition.

CHAPTER 15

STORAGE, HANDLING AND USE OF FLAMMABLE LIQUIDS

GENERAL PROVISIONS

15.1(101)T.III Application and scope.

15.1(1) *Application:* These regulations shall * * * 1966 IDR 567 are stored, handled, or used.

15.1(2) *Scope:* The regulations in this Chapter 15 shall apply to flammable liquids as * * * 1966 IDR 567 the interstate commerce commission.

15.1(3) *Retroactivity.* Insofar as the regulations in this chapter 15 cover operational * * * 1966 IDR 567 * * * 1966 IDR 568 as of the effective date thereof,

a. With respect to the location or arrangement * * * 1966 IDR 568 continue;

b. With respect to vents or pressure relief * * * 1966 IDR 568 be corrected or eliminated;

c. Otherwise than as covered in "a" or "b" * * * 1966 IDR 568 subsection 15.1(4) before any order for the elimination thereof is issued.

At any plant, station or establishment * * * 1966 IDR 568 conformity with these regulations.

15.1(4) Where under the regulations in this * * * 1966 IDR 568 need or hazard.

15.1(5) *Correction or elimination of existing* * * * 1966 IDR 568 setting forth supporting facts.

15.2(101)T.III Approval of plans for installation for storage, handling or use of flammable liquids.

15.2(1) Except as otherwise provided in 15.2(1) and 15.2(1)"a" before any construction * * * 1966 IDR 568 chapter, as written or as modified pursuant to 14.1(10) shall forthwith signify his approval of * * * 1966 IDR 568 accordingly.

a. If proposed construction or installation * * * 1966 IDR 568 pursuant to 14.1(10). In the event of dispute as to whether * * * 1966 IDR 568 decision in the matter shall be controlling.

15.2(2) Drawings shall show the name of the * * * 1966 IDR 568 streets or highways.

15.2(3) In the case of bulk plants the drawings shall show, in addition to any applicable features required under 15.2(5) and 15.2(6) of * * * 1966 IDR 568 devices therefor, if any.

15.2(4) In the case of service stations, the * * * 1966 IDR 568 required under paragraphs 15.2(5) and 15.2(6) of * * * 1966 IDR 568 * * * 1966 IDR 569 device.

15.2(5) In the case of aboveground storage, * * * 1966 IDR 569 supports; the clearances as covered in 16.2(101)T.III and 16.3(101)T.III; the type of venting * * * 1966 IDR 569 on each tank, as covered in 16.8(101)T.III; the tank control valves as covered in 16.9(101)T.III; and the location of the pumps and other * * * 1966 IDR 569 withdrawn from the tanks.

15.2(6) In the case of underground storage, * * * 1966 IDR 569 requirements covered in 17.1(101)T.III; and the location of fill, gauge and vent pipes and openings as covered in 17.5(101)T.III.

15.2(7) In the case of an installation for * * * 1966 IDR 569 whether applicable requirements are to be met.

15.3(101)T.III Definitions.

15.3(1) "Aircraft Service Station" shall * * * 1966 IDR 569 all facilities essential thereto.

15.3(2) "Automotive Service Station" shall * * * 1966 IDR 569 tanks of motor vehicles.

15.3(3) "Bulk Plant" shall mean that portion * * * 1966 IDR 569 a refinery.

15.3(4) "Closed Container" shall mean a * * * 1966 IDR 569 vapor will escape from it at ordinary temperatures.

15.3(5) "Commercial or Industrial Establish- * * * 1966 IDR 569 process.

15.3(6) "Container" shall mean any can, * * * 1966 IDR 569 stationary tanks, tank vehicles, and tank cars.

15.3(7) "Marine Service Station" shall mean * * * 1966 IDR 569 therewith.

15.3(8) "Processing Plant" shall mean that * * * 1966 IDR 569 sources.

15.3(9) "Safety Can" shall mean an approved * * * 1966 IDR 569 and spout cover.

CHAPTER 16

STORAGE ABOVEGROUND (Outside of Buildings)

16.1(101)T.III Restricted location. Any * * * 1966 IDR 569 restricted fire district regulations.

16.2(101)T.III Location with respect to * * * 1966 IDR 569 following:

MINIMUM DISTANCE OF OUTSIDE ABOVEGROUND

30,001 to 50,000 gals. I, II, and III 25 feet

Tanks with capacities in excess of 50,000 gallons * * * 1966 IDR 569 provisions:

Group A Tanks. Any all-steel, gas-tight tank * * * 1966 IDR 569 distance need not exceed one hundred twenty feet.

Group B Tanks. Any all-steel, gas-tight tank * * * 1966 IDR 570 five feet.

Group C Tanks. Any all-steel, gas-tight tank * * * 1966 IDR 570 one hundred seventy-five feet.

Group D Tanks. Any all-steel, gas-tight tank * * * 1966 IDR 570 need not exceed three hundred fifty feet.

16.2(1) If any adjoining property is used for * * * 1966 IDR 570 conform to 16.3(101)T.III.

16.3(101)T.III Spacing between tanks.

16.3(1) The location of a tank for the * * * 1966 IDR 570 three feet.

16.3(2) For tanks above 50,000 gallons * * * 1966 IDR diameter of the smaller tank.

16.3(3) In producing areas, for tanks storing * * * 1966 IDR 570 the smaller tank.

16.3(4) The minimum separation between an LP- * * * 1966 IDR 570 seventy-five gallons or less capacity.

16.4(101)T.III Foundations and supports. * * * 1966 IDR 570 two hours.

16.4(1) *Anchorage*: Where a tank is to be * * * 1966 IDR 570 ments of this subsection.

16.5(101)T.III Stairs, platforms and walkways. * * * 1966 IDR 570 concrete or wood.

16.6(101)T.III Dikes and walls.

16.6(1) *Crude petroleum*: Tanks or groups of * * * 1966 IDR 570 by the inclosure.

16.6(2) *Flammable liquids other than crude* * * * 1966 IDR 570 the inclosure.

16.6(3) *Dike construction*: Except where pro- * * * 1966 IDR 570 * * * 1966 IDR 571 floating roof tanks.

16.6(4) *Drainage*: Where provision is made * * * 1966 IDR 571 would constitute a hazard.

16.6(5) No loose combustible material * * * 1966 IDR 571 within the diked area.

16.7(101)T.III Design and construction of * * * 1966 IDR 571 minutes without leakage or permanent deformation.

16.7(1) *Field erected vertical tank*: Vertical * * * 1966 IDR 571 requirements of this section.

16.7(2) *Small shop built vertical tanks*: * * * 1966 IDR 571 561-1,100 12 gauge

16.7(3) *Large shop built vertical tank*: * * * 1966 IDR 571 no unprotected openings.

16.7(4) *Production tanks*: Vertical tanks not * * * 1966 IDR 571 Welded Production Tanks."

16.7(5) *Shop built horizontal tanks*: Hori- * * * 1966 IDR 571 be dished, stayed, braced, or reinforced.

a. *Small shop built horizontal tanks*: * * * 1966 IDR 571 551 to 1,100 10 gauge

b. *Large shop built horizontal tanks*: * * * 1966 IDR 571 greater nominal thickness.

16.8(101)T.III Vents.

16.8(1) *Normal breathing*: Tanks shall have * * * 1966 IDR 572 areas may have open vents.

16.8(2) *Emergency relief*: Every aboveground * * * 1966 IDR 572 in diameter, if built in accordance with 16.7(1), shall be deemed to be a weakened seam for this purpose. Where entire dependence for such additional relief is placed upon some device other than a weak roof seam or joint, the total venting capacity of both normal and emergency vents shall be enough to prevent rupture of the shell or bottom of the tank if vertical, or of the shell or heads if horizontal. Such device may be a self-closing manhole cover, or one using long bolts that permits the cover to lift under internal pressure, or an additional or larger relief valve or valves. For the purpose of computing the number and area of such vents and emergency relief devices, reference may be made to the table, Required Total Pressure Relief Capacity of Vents.

16.8(3) The outlet of all vents and vent drains on tanks designed for fifteen pounds per square inch or greater pressure shall be arranged to discharge in such a way as to prevent localized overheating of any part of the tank, in the event vapors from such vents are ignited.

REQUIRED TOTAL PRESSURE RELIEF CAPACITY OF VENTS

	Capacity of Tank		
735,000	17,500	648,000	
Unlimited		648,000	
Approximate Diameter in Inches of Free Circular Opening for Various Pressures			
20	11½	9¼	7¾

16.9(101)T.III Tank valves.

16.9(1) *External valves*: Each connection * * * 1966 IDR 572 regulations shall be of steel.

16.9(2) *Emergency internal check valves*: * * * 1966 IDR 572 in case of fire.

CHAPTER 17

STORAGE UNDERGROUND OR IN BUILDINGS

17.1(101)T.III Underground; outside of or under buildings.

17.1(1) *Location*: A flammable liquids * * * 1966 IDR 572 than three feet.

17.1(2) *Depth and cover*: Excavation for * * * 1966 IDR 572 * * * 1966 IDR 573 beyond the outline of the tank in all directions.

17.1(3) *Anchorage*: Where a tank may become * * * 1966 IDR 573 subsection.

17.2(101)T.III *Inside of buildings, Class I or II liquids*. Tanks for storage of Class I and * * * 1966 IDR 573 tank complying with section 17.1(101)T.III.

17.3(101)T.III *Inside of buildings, Class III liquids*.

17.3(1) Uninclosed tanks shall not be * * * 1966 IDR 573 fire or flame.

17.3(2) Tanks larger than sixty gallons * * * 1966 IDR 573 required by the process.

17.3(3) Tanks exceeding five hundred fifty * * * 1966 IDR 573 repairs to tanks.

17.3(4) In buildings of ordinary construction * * * 1966 IDR 573 gallons.

17.4(101)T.III *Design and construction of tanks*.

17.4(1) *Underground tanks or inclosed tanks inside of buildings*: Tanks shall be * * * 1966 IDR 573 be built of one-fourth-inch plate.

17.4(2) *Uninclosed tanks inside of buildings*: * * * 1966 IDR 573
181 to 275 No. 14 3.125

17.5(101)T.III *Support of tanks in buildings*. Inside storage tanks shall be securely supported to prevent settling, sliding or lifting.

17.6(101)T.III *Tank connections for tanks underground or in buildings*.

17.6(1) *Vents*:

a. *Location and arrangement of vents—Class I or II*: Vent pipes from tanks storing * * * 1966 IDR 573 * * * 1966 IDR 574 outlet end of the vent line.

b. *Location and arrangement of vents—Class III*: Vent pipes from tanks storing Class * * * 1966 IDR 574 foreign material.

c. *Size of vents*: Each tank shall be * * * 1966 IDR 574 nominal inside diameter.

d. *Vent piping*: Vent pipes shall be so * * * 1966 IDR 574 and shall not extend into the tank more than one inch.

17.6(2) *Fill and discharge piping*: Filling * * * 1966 IDR 574 top and shall be graded toward the tank.

17.6(3) *Fill openings*: The fill pipe opening * * * 1966 IDR 574 identified by a definite color scheme or other means.

17.6(4) *Gauge openings*: Gauge openings, if * * * 1966 IDR 574 loaded check valve or other approved device.

17.6(5) *Drainage of tanks in buildings*: * * * 1966 IDR 574 or sediment can be drained readily.

17.7(101)T.III *Testing*. Before being * * * 1966 IDR 574 state fire marshal.

CHAPTER 18

STORAGE IN CLOSED CONTAINERS INSIDE BUILDINGS

18.1(101)T.III *Scope*. Chapter 18 applies * * * 1966 IDR 574 21, 22, 25 and 26.

18.2(101)T.III *Design and construction of inside storage rooms*.

18.2(1) Inside storage rooms shall comply * * * 1966 IDR 574 * * * 1966 IDR 575 approved for Class I hazardous locations.

18.2(2) Electrical devices located in inside * * * 1966 IDR 575 the section.

18.2(3) Rooms or portions of buildings, * * * 1966 IDR 575 nation, create a greater fire hazard.

18.2(4) Storage rooms shall be located to minimize damage in the event of an explosion.

18.2(5) It is recommended that roofs of de- * * * 1966 IDR 575 heat will be dissipated to the out-of-doors.

18.3(101)T.III *Storage cabinets*.

18.3(1) Storage cabinets may be used where it * * * 1966 IDR 575 fifty gallons shall be stored in any one cabinet.

18.3(2) Storage cabinets shall be constructed * * * 1966 IDR 575 letters "FLAMMABLE—KEEP FIRE AWAY".

18.4(101)T.III *Manner of storage and limitations*.

18.4(1) Flammable liquids shall not be stored (including stock for sale), near exits, stairways or areas normally used for the safe egress of people.

18.4(2) The storage of flammable liquids in * * * 1966 IDR 575 reduce the hazard.

a. In a mixed occupancy, where any * * * 1966 IDR 575 hour fire-resistive construction.

b. *One, two and three family dwellings and* * * * 1966 IDR 575 closed containers or safety cans.

c. *Public assemblies, apartments, hotels*. * * * 1966 IDR 575 the public.

d. *Schools, hospitals and institutional* * * * 1966 IDR 575 in safety cans or in storage cabinets.

e. *Retail stores and department stores*: * * * 1966 IDR 575 requirements of section 218.

f. General purpose and public warehouses: * * * 1966 IDR 575 in the same area.

g. Flammable liquid warehouses or storage buildings: Storage shall be in accordance with paragraph 18.4(2) "h". Maximum allowable storage is * * * 1966 IDR 575 * * * 1966 IDR 576 manner on the otherwise blank walls.

h. Flammable liquid containers shall be * * * 1966 IDR 576
(12) (2) (1)

*Basement means a story of a building or structure * * * 1966 IDR 576 is unduly restricted.

The figures in the column, Total Gallons, represent * * * 1966 IDR 576 end that will produce this size pile.

Nothing in the foregoing table or the provisions * * * 1966 IDR 576 adjoining occupancy no substantial exposure hazard exists.

18.5(101)T.III Fire control.

18.5(1) Suitable fire-control devices, such as * * * 1966 IDR 576 to occur.

18.5(2) When sprinkler or equivalent protection * * * 1966 IDR 576 evidence of compliance with the section.

18.5(3) Open flames, smoking and other sources of ignition shall not be permitted in flammable liquid storage rooms.

18.5(4) Materials which will react with water to produce flammable vapors shall not be stored in the same room with flammable liquids.

CHAPTER 19

STORAGE IN CLOSED CONTAINERS OUTSIDE BUILDINGS

19.1(101)T.III *Scope.* This chapter applies to * * * 1966 IDR 576 occupancies detailed in chapters 21, 22, 25 and 26.

19.2(101)T.III Basic safeguards.

19.2(1) Drums constructed in accordance with ICC Specifications or containers of equivalent construction may be stored out-of-doors.

19.2(2) Drums shall not be stored outside on * * * 1966 IDR 576 one building to another.

19.2(3) Storage of over one hundred drums of * * * 1966 IDR 576 away from exposures are provided.

19.2(4) The drum storage shall be located to * * * 1966 IDR 576 shall be posted prohibiting open flames and smoking.

CHAPTER 20

PIPING, VALVES AND FITTINGS

20.1(101)T.III *Materials and design.* Piping, * * * 1966 IDR 576 * * * 1966 IDR 577 piping compound.

20.2(101)T.III *Protection against corrosion.* * * * 1966 IDR 577 corrosion, shall be painted or otherwise protected.

20.3(101)T.III *Supports.* Pipe systems shall be * * * 1966 IDR 577 settlement, vibration, expansion or contraction.

20.4(101)T.III *Valves.* Pipe system shall * * * 1966 IDR 577 against back-flow.

20.5(101)T.III Pumps and piping.

20.5(1) In intra-plant systems, pump or piping * * * 1966 IDR 577 liquids.

20.5(2) The piping shall have a definite * * * 1966 IDR 577 being carried by each line.

20.5(3) Pumps delivering to or taking supply from tanks or tank car shall be provided with valves on both suction and discharge of pump.

20.5(4) Subrules 20.5(1), 20.5(2) and 20.5(3) of 20.5(101)T.III do not apply to pipe-line systems operating * * * 1966 IDR 577 storage adjunctive thereto.

CHAPTER 21

BULK PLANTS

21.1(101)T.III Location of plants.

21.1(1) Any approval of plans by the state * * * 1966 IDR 577 regulations.

21.2(101)T.III Storage.

21.2(1) *Storage—Class I or II:* Class * * * 1966 IDR 577 ground outside of buildings, or underground. (See chapter 16.)

21.2(2) *Storage—Class III:* Class III flammable * * * 1966 IDR 577 of buildings, or underground. (See Chapter 16.)

21.2(3) *Storage of containers:* Containers * * * 1966 IDR 577 of containers.

21.3(101)T.III Filling and emptying containers.

21.3(1) Containers of Class I or Class II * * * 1966 IDR 577 vapors in hazardous concentrations.

21.3(2) Except when packaged in the original * * * 1966 IDR 577 the word "FLAMMABLE".

21.4(101)T.III *Ventilation.* Ventilation * * * 1966 IDR 577 evidence of compliance with this section.

21.5(101)T.III Buildings.

21.5(1) General construction: Buildings * * * 1966 IDR 577 * * * 1966 IDR 578 flammable vapors therein.

21.5(2) Exits: Rooms storing flammable * * * 1966 IDR 578 the event of fire.

21.5(3) Heating: Rooms in which Class I * * * 1966 IDR 578 flammable vapors.

21.6(101)T.III Loading and unloading facilities.**21.6(1) Truck loading racks:**

a. Location: Truck loading racks * * * 1966 IDR 578 15.1(3), in no case shall a truck loading rack * * * 1966 IDR 578 may be part of the loading rack.

b. Static protection: The following types * * * 1966 IDR 578 cargo tank.

c. Tank car racks: Class I and Class * * * 1966 IDR 578 with this section.

(1) **No unloading by gravity:** The withdrawal of Class I or Class II liquids from tank cars through bottom outlets shall not be permitted.

(2) The use of compressed air to discharge * * * 1966 IDR 578 for this purpose.

(3) **No unloading to portable containers:** Unloading from tank cars to tank trucks or to any other portable containers shall not be permitted.

(4) Tank cars shall not be left connected * * * 1966 IDR 578 man shall be present and in charge.

d. Container filling facilities: Class I * * * 1966 IDR 578 deemed to have been complied with.

e. Drainage and waste disposal: Provision * * * 1966 IDR 578 building until removed from the premises.

21.7(101)T.III Electrical equipment. All * * * 1966 IDR 578 compliance with this section.

21.8(101)T.III Sources of ignition. Class I * * * 1966 IDR 578 present.

21.9(101)T.III Fire control. Suitable * * * 1966 IDR 579 where fires are likely to occur.

21.10(101)T.III Care and attendance of property. * * * 1966 IDR 579 and orderly throughout.

CHAPTER 22**SERVICE STATIONS**

22.1(101)T.III Location, construction, heating. * * * 1966 IDR 579 area in which bulk operations are conducted.

22.1(1) General construction: Buildings shall * * * 1966 IDR 579 vapors therein.

22.1(2) Building:

a. No basement or excavation shall hereafter * * * 1966 IDR 579 to garages.

b. Floor shall preferably be of concrete or other fire resisting materials.

22.1(3) Service pits:

a. Except as otherwise provided in 22.1(3) "c", * * * 1966 IDR 579 a service pit.

b. Service pits existing as of the effective date of these regulations shall comply with the following:

(1) No sewer connection shall be permitted * * * 1966 IDR 579 and oils, and prevent their entry into the sewer.

(2) If service pits are electrically lighted, lights and switches shall be of explosion proof construction and wiring in conduit.

c. In an establishment where greasing or other * * * 1966 IDR 579 following requirements:

(1) Each pit must be constructed of poured concrete.

(2) All electric wiring and electric * * * 1966 IDR 579 shall bear the underwriters' laboratories label.

(3) Each pit must be equipped with a * * * 1966 IDR 579 in full operation when pit lights are lighted.

(4) The discharge from the exhaust system * * * 1966 IDR 579 re-enter the building.

(5) No sewer connection shall be permitted * * * 1966 IDR 579 sewer.

22.1(4) Heating and lighting:

a. Except as otherwise provided in this * * * 1966 IDR 579 vehicles are greased, serviced or stored.

b. Except as hereinafter provided, service * * * 1966 IDR 579 from outside of building.

c. The following types of heating installations * * * 1966 IDR 579 heater room.

(1) Oil or gas fired warm air furnaces * * * 1966 IDR 580 forty-eight inches; flue pipe eighteen inches.

(2) Gas-fired unit heaters which have their * * * 1966 IDR 580 inches; above six inches; flue pipe nine inches.

(3) Electrical unit heaters constructed * * * 1966 IDR 580 "Standard for Electric Heating Appliances".

Heating Units permitted in sections 22.1(4) "c"(1) and 22.1(4) "c"(3) hereof shall be approved by Underwriters' Laboratories, Incorporated.

d. Service stations which do not have room * * * 1966 IDR 580 vehicles, may be heated in any conventional manner.

e. All electric lighting appliances and * * * 1966 IDR 580 Electrical Code.

22.2(101)T.III Storage and handling.

22.2(1) *General provisions:* Class I and * * * 1966 IDR 580 section 22.2(2) of this chapter. Aboveground * * * 1966 IDR 580 station underground tanks.

22.2(2) *Special inclosures:* When installation * * * 1966 IDR 580 should leakage occur.

22.2(3) *Storage inside buildings:* No Class I * * * 1966 IDR 580 hundred twenty gallons capacity each.

22.2(4) Except when sold in the original * * * 1966 IDR 580 and with the word "FLAMMABLE."

a. No kerosene, fuel oil or similar liquid shall be filled into any portable container colored red.

22.2(5) *Dispensing containers:* No delivery * * * 1966 IDR 580 to a fuel line.

22.2(6) *Bulk sales prohibited:* No motor fuels * * * 1966 IDR 580 * * * 1966 IDR 581 containers meeting the requirements of sections 22.2(4) and 22.2(5).

22.3(101)T.III Dispensing devices.

22.3(1) *Design and construction:* Class I and * * * 1966 IDR 581 pressure be used for this purpose.

22.3(2) *Automatic dispensing devices:* The * * * 1966 IDR 581 nozzle as provided in section 22.3(2)"a".

a. *Automatic nozzles with latch-open devices:* * * * 1966 IDR 581 vehicle being filled by such an approved nozzle.

b. *No self-service permitted:* No person * * * 1966 IDR 581 fuel dispensing equipment at any service station.

c. *Location:* Dispensing devices at * * * 1966 IDR 581 be on private property.

d. *Inside garages:* Where an outside * * * 1966 IDR 581 the pump supplying it shall be provided.

22.4(101)T.III Remote pumping systems.

22.4(1) *Scope:* This subrule shall apply to * * * 1966 IDR 581 at the dispensers.

22.4(2) *Pumps:* Pumps shall be designed or * * * 1966 IDR 581 garages as provided for dispensers in 22.3(2)"d", * * * 1966 IDR 581 described in section 43.10 NFPA except that approved * * *

1966 IDR 581 22.4(3) of this subrule. Pumps shall be substantially * * * 1966 IDR 581 vehicles.

22.4(3) *Pits:* Pits for subsurface pumps or * * * 1966 IDR 581 provided with a close fitting cover.

22.4(4) *Testing:* After the completion of the * * * 1966 IDR 581 maximum pump pressure.

22.4(5) Controls:

a. A control shall be provided that * * * 1966 IDR 582 returned to their brackets.

b. There shall be a means, visible from the operating area, to indicate when the pump motor is running.

c. A readily accessible, clearly identified * * * 1966 IDR 582 fire or physical damage to the dispensing unit.

22.5(101)T.III Marine service station.

22.5(1) Pumps supplying flammable liquids at * * * 1966 IDR 582 or on a pier of solid-fill type, where practicable.

22.5(2) Class I or II flammable liquids shall * * * 1966 IDR 582 open by manual control while making a delivery.

22.5(3) Pipe lines at marine service stations, * * * 1966 IDR 582 whereby supply from shore may be shut off.

22.5(4) Flammable liquids may be dispensed * * * 1966 IDR 582 approved safety cans.

22.6(101)T.III Drainage and waste disposal. * * * 1966 IDR 582 until removed from the premises.

22.7(101)T.III Safety rules. There shall be * * * 1966 IDR 582 fueling operation.

22.7(1) No open lights or flames shall be * * * 1966 IDR 582 heating devices and for necessary maintenance.

22.7(2) Premises shall be kept neat and clean, and free from rubbish or trash.

22.7(3) Cleaning with gasoline, naphtha, or other highly flammable liquids of Classes I and II shall not be permitted in or around the service station.

22.8(101)T.III First-aid Fire Appliances. * * * 1966 IDR 582 to occur.

CHAPTER 23

COMMERCIAL AND INDUSTRIAL ESTABLISHMENTS

23.1(101)T.III Manner of Storage.

23.1(1) Flammable liquids shall be stored in tanks, closed containers or approved safety cans.

23.1(2) Flammable liquids stored in tanks * * * 1966 IDR 582 Chapter 16 or 17.

23.1(3) Flammable liquids stored in drums * * * 1966 IDR 582 applicable requirements of Chapter 18 or 19.

23.1(4) Flammable liquids used, mixed or handled in tanks, drums or other containers shall conform to the applicable requirements of 23.2(101)T.III.

23.2(101)T.III Use of Flammable Liquids.

23.2(1) Location: Flammable liquids in * * * 1966 IDR 582 rooms.

23.2(2) Design and Construction of Inside Mixing and Handling Rooms: Rooms shall have * * * 1966 IDR 582 prima-facie evidence of compliance with this section.

23.2(3) Storage Limits for Inside Mixing and Handling Rooms:

a. An inside mixing and handling room not * * * 1966 IDR 583 extinguishing system shall contain not more than

(1) Eleven hundred gallons total of Classes I, II and III flammable liquids of which not more than,

(2) Five hundred fifty gallons may be of * * * 1966 IDR 583 more than,

(3) Two hundred seventy-five gallons may be of Class I flammable liquid.

b. An inside mixing and handling room protected * * * 1966 IDR 583 shall not contain more than

(1) Eleven thousand gallons total of * * * 1966 IDR 583 more than,

(2) Twenty-seven hundred fifty gallons may * * * 1966 IDR 583 not more than,

(3) Five hundred fifty gallons may be of Class I flammable liquid.

(4) These amounts may be increased to not * * * 1966 IDR 583 exceeds the above limits.

23.2(4) Where applicable, installations made in * * * 1966 IDR 583 compliance with this section.

23.3(101)T.III Dispensing.

23.3(1) Class I or Class II flammable liquids * * * 1966 IDR 583 handling room.

23.3(2) Class I or Class II flammable liquids * * * 1966 IDR 583 one day's operation.

23.3(3) Class I or Class II flammable liquids shall * * * 1966 IDR 583 of the self-closing type.

23.3(4) Container Filling Facilities: Classes I * * * 1966 IDR 583 to have been complied with.

23.3(5) Exits: Exit facilities shall be provided to prevent occupants being trapped in the event of fire.

23.4(101)T.III Ventilation.

23.4(1) Buildings, or rooms or other inclosures * * * 1966 IDR 583 prima-facie evidence of the violation of this section.

23.4(2) Design of ventilating systems shall * * * 1966 IDR 583 of compliance with this section.

23.5(101)T.III Sources of Ignition. Open flames, * * * 1966 IDR 583 that effect shall be displayed.

23.6(101)T.III Fire Control.

23.6(1) Inside mixing and handling rooms may * * * 1966 IDR 583 * * * 1966 IDR 584 of compliance with this section.

23.6(2) Wherever flammable liquids are stored * * * 1966 IDR 584 or make tight.

23.6(3) Access shall be provided by * * * 1966 IDR 584 flammable liquids storage.

23.6(4) In buildings, rooms or other confined * * * 1966 IDR 584 to accumulate, except in closed metal containers.

23.6(5) Crankcase drainings and flammable * * * 1966 IDR 584 of any building until removed from the premises.

23.6(6) Cleaning with gasoline, naphtha, or other * * * 1966 IDR 584 not be permitted.

CHAPTER 24

PROCESSING PLANTS

24.1(101)T.III Manner of Storage.

24.1(1) Flammable liquids shall be stored in tanks, closed containers or approved safety cans.

24.1(2) Flammable liquids stored in tanks shall conform to the applicable requirements of Chapter 16 or 17.

24.1(3) Flammable liquids stored in drums or * * * 1966 IDR 584 requirements of Chapter 18 or 19.

24.1(4) Storage of flammable liquids within * * * 1966 IDR 584 of Chapter 16 shall not be limited in accordance with the following subsections:

a. Within wood frame buildings, storage * * * 1966 IDR 584 constructed in accordance with Chapter 16.

b. In other than wood frame buildings, * * * 1966 IDR 584 twenty gallons.

24.2(101)T.III Blending and Mixing.

24.2(1) Mixing or blending rooms or buildings shall meet the design standards of 23.2(2). Mixing or blending * * * 1966 IDR 584 compliance with this section.

24.2(2) Vessels used for mixing or blending of * * * 1966 IDR 584 other fire-extinguishing devices shall be used.

24.2(3) Open flames and other sources of * * * 1966 IDR 584 or blended in open containers.

24.2(4) Vessels shall be electrically connected * * * 1966 IDR 584 created by accumulation of static-electrical charges.

24.3(101)T.III Dispensing from Containers Within Buildings.

24.3(1) Class I or Class II flammable liquids * * * 1966 IDR 584 travel.

24.3(2) Class III flammable liquids may be dispensed * * * 1966 IDR 584 suction through the top of the container.

24.4(101)T.III Sources of Ignition. Open flames, * * * 1966 IDR 584 * * * 1966 IDR 585 evidence of compliance with this section.

24.5(101)T.III Housekeeping.

24.5(1) Wherever flammable liquids are stored in * * * 1966 IDR 585 tight container.

24.5(2) Access shall be provided by unobstructed * * * 1966 IDR 584 liquids storage.

24.5(3) In buildings, rooms or other confined spaces * * * 1966 IDR 585 closed metal containers.

24.5(4) Crankcase drainings and flammable * * * 1966 IDR 585 building until removed from the premises.

24.5(5) Cleaning with gasoline, naphtha, or other highly flammable liquids of Classes I and II shall not be permitted.

24.6(101)T.III First-aid Fire Control. * * * 1966 IDR 585 with this section.

CHAPTER 25**OIL BURNING EQUIPMENT**

25.1(101)T.III Oil Burners. Heating and * * * 1966 IDR 585 the installation requirements of this section.

25.2(101)T.III Fuel Oil. The grade of fuel oil * * * 1966 IDR 585 not be used. [Amended August 1, 1960]

CHAPTER 26**FARM STORAGE OF FLAMMABLE LIQUIDS**

26.1(101)T.III Scope. The standards are intended * * * 1966 IDR 585 which is covered by Chapter 25 of this division.

26.2(101)T.III Types of Approved Storage. * * * 1966 IDR 585 ways:

26.2(1) Underground storage as provided in Chapter 17 of this division.

26.2(2) Aboveground storage in tanks the capacity * * * 1966 IDR 585 in Chapter 16 of this division and located at least forty feet from any building.

26.2(3) Containers of sixty gallons or less capacity each, in accordance with applicable standards set forth in this chapter.

26.2(4) Containers of sixty to five hundred fifty * * * 1966 IDR 585 standards set forth in this chapter.

26.3(101)T.III Individual Containers of Sixty Gallons or Less Capacity Each. Flammable liquids in * * * 1966 IDR 585 floor level.

26.4(101)T.III Containers of Sixty to Five Hundred Fifty Gallons Capacity Each.

26.4(1) Flammable liquids in above-ground * * * 1966 IDR 585 construction.

26.4(2) A fill opening shall be provided and shall be equipped with a closure designed so that it may be locked.

26.4(3) A vent shall be provided to relieve such vacuum * * * 1966 IDR 585 of one and one-half inch diameter.

26.4(4) Containers as provided in this * * * 1966 IDR 586 closer than forty feet to any building.

26.4(5) Containers as above may be of either of the following types:

a. *Containers With Top Opening Only.* * * * 1966 IDR 586 discharge devices are prohibited.

b. *Containers Elevated for Gravity Discharge:* * * * 1966 IDR 586 that can be padlocked to its hanger to prevent tampering.

26.5(101)T.III Marking of Containers. Containers * * * 1966 IDR 586 shall be placed in a red container.

CHAPTER 27**TRANSPORTATION AND DELIVERY OF FLAMMABLE LIQUIDS BY TANK VEHICLES**

27.1(101)T.III Scope. This chapter applies to * * * 1966 IDR 586 commerce commission regulations.

27.2(101)T.III Definitions.

27.2(1) *Tank Truck:* Any single self-propelled * * * 1966 IDR 586 liquids.

27.2(2) *Tank Full Trailer:* Any vehicle with or * * * 1966 IDR 586 Not permitted under Iowa law)

27.2(3) *Tank Semitrailer*: Any vehicle with or * * * 1966 IDR 586 vehicle.

27.2(4) *Tank Vehicle*: Any tank truck, tank full trailer, or tractor and tank semitrailer combination.

27.2(5) *Cargo Tank*: Any container having a * * * 1966 IDR 586 mounted.

27.2(6) *Baffle*: A non-liquid-tight transverse partition in a cargo tank.

27.2(7) *Compartment*: A liquid-tight division in a cargo tank.

27.2(8) *Head and Bulkhead*: A liquid-tight * * * 1966 IDR 587 between compartments of a cargo tank.

27.3(101) T.III Cargo Tanks, Piping and Connections.

27.3(1) *Cargo Tanks Constructed of Mild Steel*:

a. *Material*: All sheets for such cargo tanks * * * 1966 IDR 587 twenty percent.

b. *Thickness of Sheets*: The minimum thicknesses * * * 1966 IDR 587 of shell curvature in case of shell sheets; as follows:

MINIMUM THICKNESS OF HEAD, BULKHEAD AND BAFFLE SHEETS					
Over 18 gallons	10	0.1345	9	0.1495	8 0.1685

27.3(2) *Cargo Tanks Constructed of Low Alloy Low Carbon (High Tensile) Steel*.

a. *Material*: All sheets for such cargo tanks * * * 1966 IDR 588 twenty percent.

b. *Thickness of Sheets*: The minimum thickness * * * 1966 IDR 588 of shell curvature in the case of shell sheets; as follows:

LOW ALLOY LOW CARBON (HIGH TENSILE) STEEL					
MINIMUM THICKNESS OF HEAD, BULKHEAD AND BAFFLE SHEETS					
Over 18 gallons	11	0.1196	10	0.1345	9 0.1495

27.3(3) *Cargo Tanks Constructed of Aluminum Alloys for High Strength Welded Construction*.

a. *Material*: All sheets for shell,

heads * * * 1966 IDR 589 is additionally permitted.

b. *Thickness of Sheets*: The minimum nominal * * * 1966 IDR 589 shell sheets as follows:

MINIMUM THICKNESS OF HEAD, BULKHEAD AND BAFFLE SHEETS					
ALUMINUM ALLOYS GR20A, GR40A, AND GM40A					
Over 18 gallons		.173		.194	.216

27.3(4) *Joints*.

a. *Joints* shall be made in accordance with * * * 1966 IDR 590 however, shall be joined by fusion welding.

b. *Mild steel and low alloy low carbon steel* * * * 1966 IDR 590 for that section of the tank.

c. In cargo tanks constructed of aluminum alloys, * * * 1966 IDR 590 Welding Society Specification No. A5, 10-54T).

27.3(5) *Test*. At the time of manufacture every * * * 1966 IDR 590 requirements of this specification.

27.3(6) *Tank Outlets*. Outlets shall be substantially made and so attached to the tank:

27.3(7) *Bulkheads and Baffles*.

a. Every cargo tank having a total capacity * * * 1966 IDR 590 for capacities of individual compartments or tanks. [Amended January 15, 1960]

b. Except as provided in 27.3(7) "a", bulkheads or * * * 1966 IDR 590 are in effect.

c. Every cargo tank, and every compartment * * * 1966 IDR 590 nearest it, shall in no case exceed sixty inches.

d. The cross sectional area of each baffle shall * * * 1966 IDR 590 of the cargo tank in which installed.

e. Cargo tanks with compartments carrying * * * 1966 IDR 590 with drainage facilities operative at all times.

27.3(8) *Vents*. Each cargo tank or compartment shall * * * 1966 IDR 590 hundred degrees F.

27.3(9) *Valve and Faucet Connections*. Draw-off * * * 1966 IDR 590 connected to hose extending to fill pipe.

27.3(10) *Emergency-Discharge Control*.

a. Every outlet from any cargo tank any * * * 1966 IDR 590 closed ex-

cept during loading and unloading operations.

b. The operating mechanism for the valve shall be * * * 1966 IDR 591 accidents or fire during delivery operations.

c. The control mechanism shall be provided with a * * * 1966 IDR 591 automatically in case of fire.

d. In every case there shall be provided, between * * * 1966 IDR 591 and leave the shutoff valve seat intact.

27.4(10) T.III Tank-Vehicle Chassis, Assembly and Appurtenances.

27.4(1) Tires. All tank motor vehicles shall be equipped with rubber tires on all wheels.

27.4(2) Assembly. Every cargo tank shall be adequately supported upon and securely attached to or be a part of the tank vehicle upon which it is carried.

27.4(3) Static Protection.

a. Cargo tanks, and vehicle chassis, shall be electrically bonded.

b. Provision shall be made in the tank structure of * * * 1966 IDR 591 during truck loading operations.

c. All hoses used on transports (four thousand * * * 1966 IDR 591 liquids shall be wirefilled.

d. Drag chains and straps, formerly specified * * * 1966 IDR 591 recommended.

27.4(4) Protection Against Collision. Draw-off * * * 1966 IDR 591 collision by bumpers or similar means.

27.4(5) Lighting. No lighting device other than * * * 1966 IDR 591 recognized good practice.

27.4(6) Fuel System.

a. Fuel tanks shall be so designed, constructed * * * 1966 IDR 591 without removal from their mountings.

b. All portions of the fuel-feed system, including * * * 1966 IDR 591 in the fuel line on the fuel-tank side of such joint.

27.4(7) Exhaust System.

a. The exhaust system, including muffler * * * 1966 IDR 591 gasoline.

b. The exhaust system, including all units, shall * * * 1966 IDR 591 A muffler (or silencer) cut-out shall not be used.

27.4(8) Semitrailers.

a. Semitrailers shall be firmly and securely * * * 1966 IDR 591 conforming with recognized good practice.

b. Each semitrailer, shall be equipped with * * * 1966 IDR 591 semitrailer.

c. Trailer connections shall be such as to prevent * * * 1966 IDR 591 towing vehicle.

27.4(9) Fire Extinguishers. Each tank vehicle * * * 1966 IDR 591 be kept in good condition at all times.

* * * 1966 IDR 592 place on each tank vehicle. [Amended January 15, 1960]

27.4(10) Auxiliary Internal Combustion Engines.

a. Internal combustion engines, other than * * * 1966 IDR 592 following requirements:

b. The engine air intake shall be equipped * * * 1966 IDR 592 event of backfiring.

c. The fuel system shall be so located or constructed * * * 1966 IDR 592 installed in a workmanlike manner.

d. Pumps and other appurtenances carrying or * * * 1966 IDR 592 possibility of drawing flammable vapors toward the engine.

e. When the engine is located in a position where * * * 1966 IDR 592 engine.

f. Where the engine is carried within an inclosed * * * 1966 IDR 592 explosive vapors and to avoid overheating.

g. The exhaust system shall be substantially * * * 1966 IDR 592 such closed space.

h. The ignition wiring shall be substantially * * * 1966 IDR 592 switch shall be of the inclosed type.

27.4(11) Auxiliary Electric Generators and Motors.

a. Electrical equipment, installed or carried * * * 1966 IDR 592 meet the following requirements:

b. Electric generators driven from a power * * * 1966 IDR 592 of the explosion proof type.

c. Electric motors shall be of the explosion proof type.

d. Wiring shall be adequate and substantially * * * 1966 IDR 592 type and all conduit entrances shall be sealed.

e. Where the generator or motor is located * * * 1966 IDR 592 and possible accumulation of explosive vapors.

f. Electrical equipment and wiring shall be * * * 1966 IDR 592 provided to attain equivalent protection.

27.5(10) T.III Operation of Tank Vehicles.

27.5(1) Proper Repair. Tank vehicles shall not be * * * 1966 IDR 592 free of leaks.

27.5(2) Filling and Discharging Tank Vehicles.

a. The driver, operator or attendant of any * * * 1966 IDR 592 a part of the tank vehicle.

b. Motors of tank trucks or tractors shall * * * 1966 IDR 592 operations.

c. The cargo tank shall be bonded to the * * * 1966 IDR 592 * * * 1966 IDR 593 bond-wire is disconnected from the cargo tank.

d. No external bond-wire connection nor * * * 1966 IDR 593 underground tanks.

e. No cargo tank or compartment thereof * * * 1966 IDR 593 contents due to rise in temperature in transit.

27.5(3) No Smoking. Smoking by tank vehicle * * * 1966 IDR 593 filling, or making any repairs to tank vehicles.

27.5(4) Protection Against Intermixing.

a. *Conversion:* No cargo tank compartment, the * * * 1966 IDR 593 shall be completely removed by other means.

b. *Separation:* If Class I or II flammable * * * 1966 IDR 593 required in 27.5(4) "a" before being used for Class III flammable liquid.

CHAPTER 28

RULES AND REGULATIONS
FOR
NURSING HOMES AND CUSTODIAL
HOMES

[Filed September 17, 1957]

[Amended October 9, 1957]

Promulgated under authority of chapter 135C and section 170.38 of the Code.

28.1(135C)T.III Definitions.

28.1(1) Nursing Home. The term "nursing * * * 1966 IDR 593 chapter 135C of the Code.

28.1(2) Custodial Home. The term "custodial * * * 1966 IDR 593 chapter 135C of the Code.

28.1(3) Ambulatory. The term "ambulatory" * * * 1966 IDR 593 and descent of stairs.

28.1(4) Bed Patient. The term "bed patient" * * * 1966 IDR 593 defined in these standards.

28.1(5) Patient. The term "patient" * * * 1966 IDR 593 not require nursing care.

28.1(6) Resident. The term "resident" * * * 1966 IDR 593 custodial home.

28.1(7) Approved. The term "approved" * * * 1966 IDR 593 to the state fire marshal.

a. "Approved Standards" shall mean any * * * 1966 IDR 593 nationally recognized association.

b. "Approved Equipment and Material" * * * 1966 IDR 593 laboratory.

c. "Approved" is defined as being * * * 1966 IDR 593 to the state fire marshal.

28.1(8) Attic. The term "attic" when used * * * 1966 IDR 593 and the roof rafters.

28.1(9) Automatic. The term "automatic" * * * 1966 IDR 593 * * * 1966 IDR 594 rise.

28.1(10) Automatic Sprinkler System. The term * * * 1966 IDR 594 Fire Underwriters.

28.1(11) Basement. The term "basement" when used * * * 1966 IDR 594 ground.

28.1(12) Cellar. The term "cellar" shall mean that * * * 1966 IDR 594 grade of the adjoining ground.

28.1(13) Combustible. The term "combustible" shall mean that which is easily ignited.

28.1(14) Combustible or Hazardous Storage Area or * * * 1966 IDR 594 smoke and fumes.

28.1(15) Exit. The term "exit" shall mean the * * * 1966 IDR 594 safe access to a street.

28.1(16) Fire Door. The term "fire door" shall * * * 1966 IDR 594 the passage of fire, equal to surrounding construction.

28.1(17) Fire Partition. The term "fire partition" * * * 1966 IDR 594 spread of fire.

28.1(18) Fire-Resistance. The term "fire-resistance" * * * 1966 IDR 594 same as "fire-resistance."

28.1(19) Fire-Resistance Rating. The term "fire- * * * 1966 IDR 594 with approved standards.

28.1(20) Fire Wall. The term "fire wall" * * * 1966 IDR 594 foundation to or above the roof.

28.1(21) Flammable Liquid. The term "flammable * * * 1966 IDR 594 of petroleum and petroleum products.

28.1(22) Local Fire Alarm System. The term * * * 1966 IDR 594 as well as alarm service.

28.1(23) Automatic Fire Alarm System. The * * * 1966 IDR 594 condition and actuates a fire alarm signal device.

28.1(24) Manual Fire Alarm System. The term * * * 1966 IDR 594 which is not an automatic fire alarm system.

28.1(25) Means of Egress. The term * * * 1966 IDR 594 "exit" as defined in these standards.

28.1(26) New Homes. The term "new homes" * * * 1966 IDR 594 converted to nursing or custodial homes.

28.1(27) Smoke Barrier. The term * * * 1966 IDR 594 wire-glass shall be standard clear wire-glass.

28.1(28) Sprinklered. The term "sprinklered" * * * 1966 IDR 595 maintained in accordance with approved standards.

28.1(29) Story. The term "story" shall mean * * * 1966 IDR 595 located immediately above a basement.

28.1(30) Fire-resistive Construction. * * * 1966 IDR 595 shall be of approved noncombustible material.

28.1(31) Ordinary Construction. "Ordinary" * * * 1966 IDR 595 combustible material.

28.1(32) Wood Frame Construction. "Wood frame" * * * 1966 IDR 595 construction.

28.2(135C)T.III Classifications.

28.2(1) Class 1A shall include one to four * * * 1966 IDR 595 construction buildings.

28.2(2) Class 2A shall include four to * * * 1966 IDR 595 frame construction buildings.

28.2(3) Class 3A shall include more than * * * 1966 IDR 595 frame construction buildings.

28.2(4) Class 1B shall include one to four * * * 1966 IDR 595 construction buildings.

28.2(5) Class 2B shall include four to * * * 1966 IDR 595 construction buildings.

28.2(6) Class 3B shall include more than * * * 1966 IDR 595 construction buildings.

28.3(135C)T.III Existing Nursing and Custodial Homes.

28.3(1) Height. Class 1A, 2A and 3A * * * 1966 IDR 595 patients or residents no limit.

28.3(2) Floor Areas. All unsprinklered floors * * * 1966 IDR 595 equal to the building construction.

28.3(3) Exit Details.

a. Exits shall be of the following types or combinations thereof:

1. Horizontal exits.
2. Doors leading directly outside the buildings (without stairs).
3. Ramps.
4. Stairways.
5. Seven-foot spiral slides.

b. At least two exits of the above types, * * * 1966 IDR 595 authority as a second means of exit.

c. At least one required exit from each * * * 1966 IDR 595 exits to the outside.

d. Exits shall be of such number and so located * * * 1966 IDR 595 nor seventy-five in a sprinklered building.

e. Exit doors shall not be locked against * * * 1966 IDR 595 against outside entrance.

28.3(4) Construction and Arrangement. All * * * 1966 IDR 595 to make turns at stair landings.

28.3(5) Access.

a. Each occupied room shall have at least * * * 1966 IDR 595 such access to the outside.

b. Doors serving as exits, or parts of exits * * * 1966 IDR 595 wide may be accepted by the enforcing authority.

c. Corridors and passageways to be used as * * * 1966 IDR 596 shall be at least forty-four inches wide.

d. Corridors and passageways to be used * * * 1966 IDR 596 shall be inclosed as required for stairways.

e. All rooms must be equipped with a door * * * 1966 IDR 596 upper half is closed, the lower section shall close.

28.3(6) Protection of Vertical Openings.

a. Interior stairways shall be protected by * * * 1966 IDR 596 to cut off the stairway at floor levels may be accepted.

b. All doorways in stairway inclosures or partitions * * * 1966 IDR 596 doorways leading directly outside the buildings.

c. Vertical openings other than stairways shall be * * * 1966 IDR 596 in lieu of inclosure.

28.3(7) Automatic Sprinklers.

a. Where automatic sprinkler systems are * * * 1966 IDR 596 in Class 3A homes (28.2(135C)T.III).

b. All homes of ordinary construction equipped * * * 1966 IDR 596 requirements of 28.1(3)"a".

c. Homes of Class 3A (28.2(135C) T.III) shall * * * 1966 IDR 596 from the effective date of these regulations.

d. Existing three-story frame nursing homes, * * * 1966 IDR 596 regulation is effective immediately.

28.3(8) Fire Detection Systems.

a. Where fire detection systems are installed * * * 1966 IDR 596 twenty-four hour service is maintained.

b. There shall be an automatic fire detection * * * 1966 IDR 596 system and Class 1A and Class 1B homes (28.2(135C) T.III).

c. Homes of Class 1A and Class 1B (28.2(135C) T.III) shall have an outside means of communication, such as a telephone.

28.3(9) Fire Extinguishers.

a. Approved type fire extinguishers shall be * * * 1966 IDR 596 adjacent to, each kitchen or basement storage room.

b. Type and number of portable fire extinguishers * * * 1966 IDR 596 shall be by the local authority having jurisdiction.

28.3(10) Heating. Heating shall be by a central * * * 1966 IDR 596 bathrooms, shall not be used.

28.4(135C) T.III Equipment and Operational Features For Existing and New Nursing and Custodial Homes.

28.4(1) Attendants, Evacuation Plan.

a. Every nursing and custodial home shall have * * * 1966 IDR 596 * * * 1966 IDR 597 be considered as an attendant.

b. The above paragraph shall not apply to homes of Class 1A and Class 1B (28.2(135C) T.III) * * * 1966 IDR 597 are less than ten patients.

c. Every nursing and custodial home shall * * * 1966 IDR 597 duties under the plan.

d. Every mattress shall be provided with * * * 1966 IDR 597 with other approved carrying device.

28.4(2) Smoking. Smoking may be permitted in * * * 1966 IDR 597 of attending physician.

28.4(3) Signs and Lighting.

a. Signs bearing the word "EXIT" in plainly * * * 1966 IDR 597 when natural light fails.

b. All stairways and other ways of exit and the * * * 1966 IDR 597 requirements for exit lighting.

28.4(4) Combustible Contents.

a. All combustible decorative and acoustical * * * 1966 IDR 597 rendered and maintained flame-resistant.

b. Fresh cut flowers and decorative greens, as * * * 1966 IDR 597 except those containing pitch or resin.

c. This shall not apply to homes of Class 1A and Class 1B (28.2(135C) T.III).

d. Fiber base, acoustical ceiling treatment or * * * 1966 IDR 597 regulations.

28.4(5) Occupancy Restrictions.

a. Sleeping rooms or dormitories shall not be located in cellars.

b. Occupancies not under the control of, or * * * 1966 IDR 597 of the residence of the owner or manager.

c. The above regulations shall apply to * * * 1966 IDR 597 classes.

28.4(6) Maintenance.

a. Regular and proper maintenance of electric * * * 1966 IDR 597 classes.

b. Storerooms shall be maintained in a neat and proper manner at all times.

c. Excessive storage of combustible materials * * * 1966 IDR 597 custodial homes.

d. The above regulations shall apply to both existing and new nursing and custodial homes.

28.5(135C) T.III New Nursing and Custodial Homes.

28.5(1) Regulation.

a. New nursing and custodial homes shall be * * * 1966 IDR 597 date of this regulation.

b. It shall also include homes contemplated * * * 1966 IDR 597 patients.

c. Homes of Class 1A (28.2(135C) T.III) will be excepted from the above regulations.

28.5(2) Construction. All new construction shall * * * 1966 IDR 597 Education and Welfare.

a. Fire-resistive construction—no limits to height and area of building.

1. Columns and piers shall have a fire-resistive rating not less than three hours.

2. Floors shall have a fire-resistive rating of two hours.

3. Roofs shall have a fire-resistive rating of not less than one and one-half hours.

4. Beams, girders and trusses shall have a fire-resistive rating of two hours.

5. Walls bearing exterior and interior por- * * * 1966 IDR 598 rating of three hours.

6. Partitions shall have a fire-resistive rating of two hours.

b. Noncombustible construction—limited to * * * 1966 IDR 598 sprinkler system.

1. General—all structural including walls, * * * 1966 IDR 598 fire-resistive rating.

2. Exterior walls shall have a fire-resistive rating of two hours.

c. One-story buildings shall be constructed of * * * 1966 IDR 598 custodial homes.

d. Other types of construction—not permitted.

e. In determining the height of a building in * * * 1966 IDR 598 as a story.

28.5(3) Division of Floor Areas.

a. Each floor occupied by thirty or more * * * 1966 IDR 598 fire or may be released manually to self-closing action.

b. No more than one hundred fifty feet of corridor without such partitions, as defined in 28.5(3) "a" above shall be permitted. The enforcing * * * 1966 IDR 598 finds them necessary for the safety of the occupants.

28.5(4) Exit Details.

a. Exits shall be of the following types, or combinations thereof.

1. Horizontal exits.

2. Doors leading directly outside the buildings (without stairs).

3. Ramps.

4. Stairways.

5. Seven-foot spiral slides.

b. At least two exits of the above types, remote * * * 1966 IDR 598 the enforcing authority as a second means of exit.

c. At least one required exit from each floor * * * 1966 IDR 598 ample and direct exits to the outside.

d. Exits shall be of such number and so located * * * 1966 IDR 598 nor one hundred fifty feet in a sprinklered building. [Amended January 15, 1960]

e. Exit doors shall not be locked against the * * * 1966 IDR 598 outside entrance.

28.5(5) Construction and Arrangement. All stairs, * * * 1966 IDR 598 turns at stair landings.

28.5(6) Access.

a. Each occupied room shall have at least one * * * 1966 IDR 598 access to the outside.

b. Corridors and passageways to be used as a * * * 1966 IDR 598 least forty-four inches wide.

c. Corridors and passageways to be used as a * * * 1966 IDR 598 stairways.

d. All rooms must be equipped with a door. * * * 1966 IDR 598 upper half is closed, the lower section shall close.

28.5(7) Doors.

a. Outside landings to which exit doors * * * 1966 IDR 599 or lower than the exit door sill.

b. Wherever possible, outside stairs should * * * 1966 IDR 599 removing the patients from the beds.

c. No locks shall be installed on patient room doors.

d. All doorways to patient occupied * * * 1966 IDR 599 the outside.

e. Doors to any room accommodating more than four persons shall swing with exit travel.

28.5(8) Protection of Vertical Openings.

a. Interior stairways shall be protected by * * * 1966 IDR 599 cut off the stairway at floor levels may be accepted.

b. All doorways in stairways inclosures or * * * 1966 IDR 599 for doorways leading directly outside the building.

c. Vertical openings other than stairways shall * * * 1966 IDR 599 in lieu of inclosure.

28.5(9) Automatic Sprinklers. Where automatic * * * 1966 IDR 599 pressure tank may be used.

28.5(10) Fire Detection Systems.

a. Where fire detection systems are installed * * * 1966 IDR 599 where twenty-four hour service is maintained.

b. There shall be an automatic fire detection * * * 1966 IDR 599 homes (28.2(135C) T.III).

c. Homes of Class 1A and Class 1B (28.2(135C) T.III) shall have an outside means of communication, such as a telephone.

28.5(11) Fire Extinguishers.

a. Approved type fire extinguishers shall * * * 1966 IDR 599 basement storage room.

b. Type and number of portable fire * * * 1966 IDR 599 authority having jurisdiction.

28.5(12) Heating. Heating shall be a * * * 1966 IDR 599 electric heaters in bathrooms, shall not be used.

CHAPTER 29
FIRE SAFETY RULES AND
REGULATIONS FOR SCHOOL AND
COLLEGE BUILDINGS

[Filed December 19, 1960]

29.1(100)T.III General Requirements.

29.1(1) Every building or structure, new or old, * * * 1966 IDR 599 is ineffective due to some human or mechanical failure.

29.1(2) Every building or structure shall be so * * * 1966 IDR 599 * * * 1966 IDR 600 or other emergency.

29.1(3) Exits shall be provided of kinds, numbers, * * * 1966 IDR 600 all occupants convenient facilities for escape.

29.1(4) Fire escapes, where specified, shall be * * * 1966 IDR 600 set forth in the Departmental Rules.

29.1(5) All changes or alterations to be made * * * 1966 IDR 600 provisions of these regulations.

29.1(6) Each school building of two or more * * * 1966 IDR 600 paragraph shall not apply to college buildings.

29.1(7) Compliance with these regulations * * * 1966 IDR 600 under normal occupancy conditions.

29.1(8) In existing multistoried buildings where * * * 1966 IDR 600 compliance and availability of funds therefore. [Amended June 22, 1962]

29.2(100)T.III Definitions.

29.2(1) *School and College Buildings.* For the * * * 1966 IDR 600 subject to discipline and control.

29.2(2) *Elementary School.* An elementary school * * * 1966 IDR 600 through sixth grade (K-6).

29.2(3) *Classroom.* Any room originally designed * * * 1966 IDR 600 that classroom area.

29.2(4) *Exit.* An exit is a way to get from the * * * 1966 IDR 600 safety under emergency conditions.

29.2(5) *Story.* If the finished floor level * * * 1966 IDR 600 be considered a story.

29.2(6) *Basement.* A basement is a story partly * * * 1966 IDR 600 ground level of the adjoining ground.

29.2(7) *New Construction.* Those buildings * * * 1966 IDR 600 of these regulations.

29.2(8) *Approved.* Approved is defined as being * * * 1966 IDR 600 National Fire Protection Association.

29.2(9) *Fire Alarm System.* A fire alarm * * * 1966 IDR 600 exit drills.

29.3(100)T.III Exits.

29.3(1) The population of all school buildings, * * * 1966 IDR 600 be determined on the following basis:

a. The square feet of floor space for persons in school buildings shall be one person for each forty square feet of gross area.

b. In the case of individual classrooms in * * * 1966 IDR 600 classroom space for each student.

c. In gymnasiums and auditoriums, the * * * 1966 IDR 601 six square feet net per person.

29.3(2) Exits shall be provided of kinds, numbers, * * * 1966 IDR 601 building.

29.3(3) Exits shall be so arranged and maintained * * * 1966 IDR 601 of any building shall be installed.

29.3(4) Exits shall be clearly visible or routes * * * 1966 IDR 601 of safety outside is unmistakable.

29.3(5) In all school buildings where artificial * * * 1966 IDR 601 passageways.

29.3(6) Where additional outside stairs or fire * * * 1966 IDR 601 on new construction.

29.3(7) There shall be a minimum of two means of * * * 1966 IDR 601 fifty feet.

29.3(8) Every room with a capacity of one hundred * * * 1966 IDR 601 exits in opposite directions.

29.3(9) Each elementary classroom shall have a * * * 1966 IDR 601 thence to a secondary route of escape.

29.4(100)T.III Corridors.

29.4(1) Corridors used as means of access to * * * 1966 IDR 601 six foot width. [Amended April 6, 1965]

29.4(2) *a.* In existing buildings, where clothes * * * 1966 IDR 601 eight inches of the floor.

b. Where open clothing is hung in exit corridors as * * * 1966 IDR 601 system.

29.4(3) In new construction, open clothing storage shall not be permitted in exit corridors.

29.4(4) Except as permitted in 29.4(2), no * * * 1966 IDR 601 corridors.

29.4(5) The walls of corridors, used for exit * * * 1966 IDR 601 noncombustible finish material.

29.4(6) Where borrowed light panels of clear * * * 1966 IDR 601 29.18(100)

T.III, of these regulations, shall * * * 1966 IDR 601 classroom.

29.4(7) Any single corridor or combination of * * * 1966 IDR 601 clearance as is reasonably necessary for proper operation. [Amended April 6, 1965]

29.4(8) There shall be no dead end in any corridor or hall more than twenty feet beyond the exit.

29.5(100)T.III Doors.

29.5(1) The entrance and exit doors of all school * * * 1966 IDR 601 outward.

29.5(2) Doors shall be provided for main exit * * * 1966 IDR 601 * * * 1966 IDR 602 in width may be installed.

29.5(3) The main exit and entrance doors and * * * 1966 IDR 602 against the exit.

29.5(4) Doors protecting stairways and * * * 1966 IDR 602 exceed nine hundred square inches.

29.5(5) Doors protecting vertical openings * * * 1966 IDR 602 blocked open.

29.5(6) a. Classroom doors, in new * * * 1966 IDR 602 thirty inches in width may be used.

b. School buildings designed without doors * * * 1966 IDR 602 29.18(100)T.III of these regulations.

29.5(7) Boiler, furnace or fuel room doors, * * * 1966 IDR 602 the boiler room. [Amended April 6, 1965]

29.5(8) Doors to storage of combustibles off * * * 1966 IDR 602 inch solid core wood. [Filed April 6, 1965]

29.6(100)T.III Windows.

29.6(1) Windows below or within ten feet of * * * 1966 IDR 602 panes of wire-glass.

29.6(2) Where a window is to be used as a secondary * * * 1966 IDR 602 requirements of this section. [Amended June 22, 1962]

29.6(3) Double hung or hinged windows, having * * * 1966 IDR 602 29.6(2), providing the other requirements of 29.6(2) are followed. [Amended June 22, 1962]

29.7(100)T.III Stairway Inclosures and Floor Cutoffs.

29.7(1) In buildings of more than one story, stairs * * * 1966 IDR 602 construction, or better, with wire-glass allowable. [Amended April 6, 1965]

29.7(2) In existing buildings of two stories with no * * * 1966 IDR 602

or vestibule leading to the outside of the building.

29.7(3) In new construction, the inclosures or * * * 1966 IDR 602 for walls and partitions.

29.7(4) In existing buildings, the stairway * * * 1966 IDR 602 Maximum nine hundred square inch glass panels allowable.

29.7(5) Stairways from boiler, furnace or fuel * * * 1966 IDR 602 inches of wired glass allowable.

29.7(6) Except as provided elsewhere in this * * * 1966 IDR 602 in accordance with the provisions of 29.7(1).

29.7(7) Cutoffs between floors for stairways * * * 1966 IDR 602 construction as provided in 29.7(1).

29.8(100)T.III Interior Finishes.

29.8(1) The interior finishes of all exit corridors * * * 1966 IDR 602 interior finish.

29.8(2) Whenever the fire marshal determines * * * 1966 IDR 602 by 29.8(1).

29.8(3) In new construction, all interior finishes shall be Class C or better.

29.8(4) In existing buildings, ceiling finishes not meeting the requirements of 29.8(1) or 29.8(3) * * * 1966 IDR 602 combustible, it shall be adhered * * * 1966 IDR 603 accordance with the manufacturers' directions. [Amended June 22, 1962]

29.9(100)T.III Construction.

29.9(1) Types of construction as defined in the Uniform Building Code, 1964 Edition of the International Conference of Building Officials:

- a. Fire-resistive.
- b. Heavy timber.
- c. Noncombustible.
- d. Ordinary.
- e. Wood frame.

[Amended April 6, 1965]

29.9(2) Noncombustible, ordinary or wood * * * 1966 IDR 603 protection.

29.9(3) Types of construction permitted:

a. One-story buildings and one-story wings * * * 1966 IDR 603 materials shall be used.

b. Two-story buildings may be constructed * * * 1966 IDR 603 materials.

c. Buildings of more than two stories shall be fire-resistive throughout.

29.9(4) Construction of the floor located * * * 1966 IDR 603 protected non-combustible materials.

29.9(5) Construction of the floor located above * * * 1966 IDR 603 fire-resistant or noncombustible materials.

29.9(6) Boiler rooms, furnace rooms or fuel * * * 1966 IDR 603 materials.

29.9(7) Boiler rooms, furnace rooms or fuel rooms with building above shall be of fire-resistive construction.

29.10(100)T.III Fire Alarm Systems.

29.10(1) All schools having two or more class- * * * 1966 IDR 603 system.

29.10(2) Underwriters' laboratory equipment * * * 1966 IDR 603 building ahead of the entrance disconnect.

29.10(3) Whenever the fire marshal determines * * * 1966 IDR 603 boiler rooms, storerooms or shop areas.

29.11(100)T.III Electrical Wiring.

29.11(1) The electrical wiring of any * * * 1966 IDR 603 overfusing the circuits.

29.11(2) The electrical wiring and component * * * 1966 IDR 603 could cause a fire.

29.11(3) In new construction, electrical wiring shall be in metal raceways.

29.11(4) All exit lights shall be connected ahead of the service disconnect. [Filed April 6, 1965]

29.12(100)T.III Heating Equipment.

29.12(1) Heating equipment shall be installed * * * 1966 IDR 603 with 29.9(6) and 29.9(7).

29.12(2) Installation for any heating equipment * * * 1966 IDR 603 instruction and conditions of safe operation.

29.12(3) Acceptable evidence for complying with 29.12(3) shall be labeling or listed equipment by * * * 1966 IDR 603 approval of the state fire marshal.

29.12(4) Oil burning equipment shall be installed, * * * 1966 IDR 603 state of Iowa.

29.12(5) All gas burning equipment shall be * * * 1966 IDR 603 liquefied petroleum gas regulations of the state of Iowa.

29.12(6) Floor-mounted flame heating equipment * * * 1966 IDR 603 classroom. [Filed April 6, 1965]

29.13(100)T.III Gas Piping.

29.13(1) Gas piping shall be in accordance with * * * 1966 IDR 603 of Iowa.

29.13(2) All gas service lines into buildings * * * 1966 IDR 603 a shutoff valve outside the building.

29.13(3) Gas piping cannot run in inclosed space without proper venting. [Filed April 6, 1965]

29.14(100)T.III Fire Extinguishers.

29.14(1) Each school building shall be equipped * * * 1966 IDR 604 approved by the state fire marshal.

29.14(2) NFPA Bulletin applicable. Vaporizing * * * 1966 IDR 604 extinguishing agents shall not be approved. [Filed April 6, 1965]

29.15(100)T.III Basements.

29.15(1) In existing school buildings, basement * * * 1966 IDR 604 with paragraphs "b", "c", "d", and "e".

a. Direct approve egress door from classrooms to the outside.

b. Classroom doors open into a corridor that leads directly outside.

c. Inside stairs from basement corridors, * * * 1966 IDR 604 with other stories above.

d. Doors from basement classroom corridors, * * * 1966 IDR 604 equipped with door closers.

e. Buildings, unless of fire-resistive * * * 1966 IDR 604 systems in the entire basement area. [Amended April 6, 1965]

29.15(2) In new construction, basement rooms * * * 1966 IDR 604 lower grade level.

29.16(100)T.III Fire Hazard Safeguards in New and Existing Buildings.

29.16(1) Ventilating ducts discharging into * * * 1966 IDR 604 extended in a standard manner through the roof.

29.16(2) Cooking ranges and other cooking * * * 1966 IDR 604 manner.

29.16(3) Discarded furniture, furnishings or * * * 1966 IDR 604 school operation or curriculum schedule.

29.16(4) Space under stairways in existing * * * 1966 IDR 604 kept closed and locked.

29.16(5) Waste paper baling and storage shall * * * 1966 IDR 604 or approved metal cabinet. [Amended April 6, 1965]

29.17(100)T.III Automatic Sprinklers.

29.17(1) Where automatic sprinkler protection is * * * 1966 IDR 604 provisions in this section.

29.17(2) Automatic sprinkler systems shall be of * * * 1966 IDR 604 paragraphs of this section.

29.17(3) Automatic sprinkler systems for * * * 1966 IDR 604 occupancies.

29.17(4) Automatic sprinkler systems shall be * * * 1966 IDR 604 the fire alarm system required by state law.

29.17(5) Partial automatic sprinkler systems * * * 1966 IDR 604 sprinklered for partial systems.

29.17(6) a. All automatic sprinklers installed * * * 1966 IDR 604 and reliable water supplies.

b. Public water supplies for sprinkler systems * * * 1966 IDR 604 sprinkler head.

c. Where public water supply is not available * * * 1966 IDR 604 the tank.

29.17(7) All automatic sprinkler systems required * * * 1966 IDR 604 to assure proper maintenance.

29.17(8) In existing buildings of ordinary or * * * 1966 IDR 604 exceed a basement and two full stories.

29.18(100)T.III Open Plan Buildings.

29.18(1) An "Open Plan Building" is defined as any * * * 1966 IDR 605 used for exit facilities.

29.18(2) Open plan buildings shall have inclosed * * * 1966 IDR 605 protected in accordance with 29.17(1).

29.18(3) Open plan buildings shall not exceed * * * 1966 IDR 605 one-hour construction.

29.18(4) Any cafeterias, gymnasiums or auditoriums * * * 1966 IDR 605 shall require passing through such assembly areas.

29.18(5) Open plan buildings that do not have a * * * 1966 IDR 605 detection system.

29.18(6) A sprinkler system may be installed in * * * 1966 IDR 605 plan building.

29.18(7) Distance of travel to the nearest exit * * * 1966 IDR 605 fifty feet.

CHAPTER 30

NEW COLLEGE BUILDINGS

30.1(100)T.III Exits.

30.1(1) Exits shall be provided of kinds, numbers, * * * 1966 IDR 605 all occupants convenient facilities for escape.

30.1(2) The population of all college buildings, * * * 1966 IDR 605 determined on the following basis.

a. The square feet of floor space for persons in college buildings shall be one person for each forty square feet of gross area.

b. In gymnasiums and auditoriums, the capacity * * * 1966 IDR 605 feet net per person.

30.1(3) Exits shall be so arranged and maintained * * * 1966 IDR 605 any building shall be installed.

30.1(4) Exits shall be clearly visible or routes * * * 1966 IDR 605 safety outside is unmistakable.

30.1(5) In all college buildings where artificial * * * 1966 IDR 605 passageways.

30.1(6) Fire escapes shall not be permitted on new construction.

30.1(7) There shall be a minimum of two means * * * 1966 IDR 605 to one hundred fifty feet.

30.1(8) Every room with a capacity of one * * * 1966 IDR 605 separate exits in opposite directions.

30.2(100)T.III Corridors.

30.2(1) Corridors used as means of access to * * * 1966 IDR 605 required minimum six-foot width.

30.2(2) In new construction, open clothing storage shall not be permitted in exit corridors.

30.2(3) No combustible materials shall be stored in exit corridors.

30.2(4) The walls of corridors, used for exit * * * 1966 IDR 605 finish material.

30.2(5) Where borrowed light panels of clear * * * 1966 IDR 605 30.15(100) T.III of these regulations shall apply.

30.2(6) Any single corridor or combination of * * * 1966 IDR 605 * * * 1966 IDR 606 for proper operation. [Amended April 6, 1965]

30.2(7) There shall be no dead end in any * * * 1966 IDR 606 the exit.

30.3(100)T.III Doors.

30.3(1) The entrance and exit doors of all * * * 1966 IDR 606 shall open outward.

30.3(2) Doors protecting stairways may have * * * 1966 IDR 606 square inches.

30.3(3) Doors protecting vertical openings or * * * 1966 IDR 606 door closers and shall not be blocked open.

30.3(4) a. Classroom doors shall be thirty-six inches wide.

b. College buildings designed without doors to classrooms shall meet the requirements of 30.15(100)T.III of these regulations.

30.3(5) Boiler, furnace or fuel room doors, * * * 1966 IDR 606 boiler room.

30.3(6) Doors to storage of combustibles off * * * 1966 IDR 606 inch solid core wood. [Amended April 6, 1965]

30.4(100)T.III Stairway Inclosures and Floor Cutoffs.

30.4(1) In new college buildings, stairs * * * 1966 IDR 606 glass allowable. [Amended April 6, 1965]

30.4(2) In new construction, the inclosures or * * * 1966 IDR 606 material used for walls and partitions.

30.4(3) Stairways from boiler, furnace or fuel * * * 1966 IDR 606 of wired glass allowable.

30.5(100)T.III Interior Finishes.

30.5(1) The interior finishes of all exit * * * 1966 IDR 606 used for interior finish.

30.5(2) Whenever the fire marshal determines * * * 1966 IDR 606 addition to those areas designated by 30.5(1).

30.5(3) In new construction, all interior finishes shall be Class C or better.

30.6(100)T.III Construction.

30.6(1) Types of construction as defined in the * * * 1966 IDR 606 International Conference of Building Officials:

- a. Fire-resistive.
- b. Heavy timber.
- c. Noncombustible.
- d. Ordinary.
- e. Wood frame.

[Amended April 6, 1965]

30.6(2) Noncombustible, ordinary or wood * * * 1966 IDR 606 protection.

30.6(3) Types of construction permitted:

a. One-story buildings and one-story wings on multistory buildings may be any of the types designated in 30.6(1), or combinations * * * 1966 IDR 606 protected materials shall be used.

b. Two-story buildings may be constructed * * * 1966 IDR 606 either heavy timber or noncombustible materials.

c. Buildings of more than two stories shall be fire-resistive throughout.

30.6(4) Construction of the floor located above a * * * 1966 IDR 606 noncombustible materials.

30.6(5) Construction of the floor located above a * * * 1966 IDR 606 fire-resistive or noncombustible materials.

30.6(6) Boiler rooms, furnace rooms or fuel rooms * * * 1966 IDR 606 protected heavy timber or protected ordinary materials.

30.6(7) Boiler rooms, furnace rooms or fuel * * * 1966 IDR 606 construction.

30.7(100)T.III Fire Alarm Systems.

30.7(1) In new construction, resident halls * * * 1966 IDR 606 is required, it shall comply with the provisions of 29.10(100)T.III of these regulations.

30.8(100)T.III Electrical Wiring.

30.8(1) The electrical wiring of any educational * * * 1966 IDR 606 * * * 1966 IDR 607 overfusing the circuits.

30.8(2) The electrical wiring and component * * * 1966 IDR 607 cause a fire.

30.8(3) In new construction, electrical wiring shall be in metal raceways.

30.8(4) All exit lights shall be connected ahead of the service disconnect. [Filed April 6, 1965]

30.9(100)T.III Heating Equipment.

30.9(1) Heating equipment shall be installed where applicable, in rooms constructed in accordance with 30.6(6) and 30.6(7).

30.9(2) Installation for any heating equipment * * * 1966 IDR 607 instruction and conditions of safe operation.

30.9(3) Acceptable evidence for complying with 30.9(2) shall be labeling or listed equipment by * * * 1966 IDR 607 of the state fire marshal.

30.9(4) Oil burning equipment shall be * * * 1966 IDR 607 the state of Iowa.

30.9(5) All gas burning equipment shall be * * * 1966 IDR 607 state of Iowa.

30.9(6) Floor-mounted flame heating equipment * * * 1966 IDR 607 classroom. [Filed April 6, 1965]

30.10(100)T.III Gas Piping.

30.10(1) Gas piping shall be in accordance with * * * 1966 IDR 607 of Iowa.

30.10(2) All gas service lines into buildings * * * 1966 IDR 607 outside the building.

30.10(3) Gas piping cannot run in inclosed space without proper venting. [Filed April 6, 1965]

30.11(100)T.III Fire Extinguishers.

30.11(1) Each college building shall be equipped * * * 1966 IDR 607 approved by the state fire marshal.

30.11(2) NFPA Bulletin applicable. Vaporizing * * * 1966 IDR 607 extinguishing agents shall not be approved. [Filed April 6, 1965]

30.12(100)T.III Basements.

30.12(1) Basement classrooms may be used * * * 1966 IDR 607 compliance with "c" and "d".

a. Direct approved egress door from classrooms to the outside.

b. Classroom doors open into a corridor that leads directly outside.

c. Inside stairs from basement corridors, * * * 1966 IDR 607 fire-resistive construction.

d. Doors from basement classroom * * * 1966 IDR 607 shall be permitted. [Amended April 6, 1965]

30.13(100)T.III Fire Hazard Safeguards in New Buildings.

30.13(1) Ventilating ducts discharging into attics * * * 1966 IDR 607 standard manner through the roof.

30.13(2) Cooking ranges and other cooking * * * 1966 IDR 607 and shall be vented to the outside in an approved manner.

30.13(3) Discarded furniture, furnishings or other * * * 1966 IDR 607 curriculum schedule.

30.13(4) Storage facilities for materials and supplies shall be in storage rooms designed for this purpose.

30.13(5) Waste paper baling and storage shall * * * 1966 IDR 607 fire-resistant construction.

30.13(6) Storage of paint products and flammable * * * 1966 IDR 607 metal cabinet.

[Filed April 6, 1965]

30.14(100)T.III Automatic Sprinklers.

30.14(1) Automatic sprinkler systems shall be of * * * 1966 IDR 607 is specified in other paragraphs of this section.

30.14(2) Automatic sprinkler systems for college * * * 1966 IDR 607 occupancies.

30.14(3) Automatic sprinkler systems shall be * * * 1966 IDR 607 required by state law.

30.14(4) a. All automatic sprinklers installed * * * 1966 IDR 608 and reliable water supplies.

b. Public water supplies for sprinkler systems * * * 1966 IDR 608 fifteen pounds pressure at the highest sprinkler head.

c. Where public water supply is not available and * * * 1966 IDR 608 all of the water in the tank.

30.14(5) All automatic sprinkler systems required * * * 1966 IDR 608 to assure proper maintenance.

30.15(100)T.III Open Plan Buildings.

30.15(1) An "Open Plan Building" is defined as any * * * 1966 IDR 608 used for exit facilities.

30.15(2) Open plan building shall have inclosed * * * 1966 IDR 608 floors protected in accordance with 30.4(1).

30.15(3) Open plan buildings shall not exceed * * * 1966 IDR 608 construction.

30.15(4) Any cafeterias, gymnasiums or auditoriums * * * 1966 IDR 608 assembly areas.

30.15(5) Open plan buildings that do not have * * * 1966 IDR 608 detection system.

30.15(6) A sprinkler system may be installed in * * * 1966 IDR 608 open plan building.

30.15(7) Distance of travel to the nearest exit * * * 1966 IDR 608 one hundred fifty feet.

CHAPTER 31

EXISTING COLLEGE BUILDINGS

31.1(100)T.III Exits.

31.1(1) Exits shall be provided of kinds, numbers, * * * 1966 IDR 608 facilities for escape.

31.1(2) The population of all college buildings, for * * * 1966 IDR 608 the following basis.

a. The square feet of floor space for persons in * * * 1966 IDR 608 square feet of gross area.

b. In gymnasiums and auditoriums, the capacity for * * * 1966 IDR 608 per person.

31.1(3) Exits shall be so arranged and maintained * * * 1966 IDR 608 any building shall be installed.

31.1(4) Exits shall be clearly visible or routes * * * 1966 IDR 608 outside is unmistakable.

31.1(5) In all college buildings where artificial * * * 1966 IDR 608 passageways.

31.1(6) Where additional outside stairs or fire * * * 1966 IDR 608 regulations.

31.1(7) There shall be a minimum of two means of * * * 1966 IDR 608 one hundred fifty feet.

31.1(8) Every room with a capacity of one hundred * * * 1966 IDR 608 directions.

31.1(9) In existing buildings where exits do * * * 1966 IDR 608 * * * 1966 IDR 609 required stairs.

31.2(100)T.III Corridors.

31.2(1) Corridors used as means of access to * * * 1966 IDR 609 six-foot width. [Amended April 6, 1965]

31.2(2) a. In existing buildings, where clothes * * * 1966 IDR 609 eight inches of the floor.

b. Where open clothing is hung in exit corridors * * * 1966 IDR 609 detection system.

31.2(3) Except as permitted in 31.2(2), no * * * 1966 IDR 609 corridors.

31.2(4) The walls of corridors, used for exit * * * 1966 IDR 609 noncombustible finish material.

31.2(5) Where borrowed light panels of clear glass are used in exit corridors, the requirements of 31.16(100) T.III of these regulations, shall * * * 1966 IDR 609 classroom.

31.2(6) Any single corridor or combination of * * * 1966 IDR 609 for proper operation. [Amended April 6, 1965]

31.2(7) There shall be no dead end in any corridor or hall more than twenty feet beyond the exit.

31.3(100) T.III Doors.

31.3(1) The entrance and exit doors of all college * * * 1966 IDR 609 outward.

31.3(2) Doors shall be provided for main exit * * * 1966 IDR 609 may be installed.

31.3(3) The main exit and entrance doors and * * * 1966 IDR 609 against the exit.

31.3(4) Doors protecting stairways and doors * * * 1966 IDR 609 nine hundred square inches.

31.3(5) Doors protecting vertical openings or * * * 1966 IDR 609 blocked open.

31.3(6) a. In existing buildings, doors of not less than thirty inches in width may be used.

b. Buildings designed without doors to * * * 1966 IDR 609 31.16(100) T.III of these regulations. [Amended April 6, 1965]

31.3(7) Boiler, furnace or fuel room doors, * * * 1966 IDR 609 boiler room.

31.3(8) Doors to storage of combustibles off * * * 1966 IDR 609 inch solid core wood. [Filed April 6, 1965]

31.4(100) T.III Windows. Windows below or * * * 1966 IDR 609 escape shall have panes of wire glass.

31.5(100) T.III Stairway Inclosures and Floor Cutoffs.

31.5(1) In buildings of more than one story, * * * 1966 IDR 609 better, with wire glass allowable. [Amended April 6, 1965]

31.5(2) In existing buildings of two stories * * * 1966 IDR 609 of the building.

31.5(3) In existing buildings, the stairway * * * 1966 IDR 609 nine hundred square inch glass panels allowable.

31.5(4) Stairways from boiler, furnace or * * * 1966 IDR 610 inches of wired glass allowable.

31.5(5) Except as provided elsewhere in this * * * 1966 IDR 610 shall be in accordance with the provisions of 31.5(1).

31.5(6) Cutoffs between floors for stairways * * * 1966 IDR 610 type of construction as provided in 31.5(1).

31.5(7) Where existing buildings because of layout * * * 1966 IDR 610 with 31.5(100) T.III, the fire marshal shall * * * 1966 IDR 610 conditions.

31.6(100) T.III Interior Finishes.

31.6(1) The interior finishes of all exit * * * 1966 IDR 610 materials used for interior finish.

31.6(2) Whenever the fire marshal determines * * * 1966 IDR 610 those areas designated by 31.6(1).

31.7(100) T.III Construction.

All additions to existing buildings shall comply with 30.6(100) T.III, 30.6(1)-30.6(7) inclusive, of these regulations.

31.8(100) T.III Fire Alarm Systems.

31.8(1) Upon inspection, the fire marshal may * * * 1966 IDR 610 the systems shall comply with 29.10(100) T.III of these regulations.

31.8(2) Where, in the opinion of the * * * 1966 IDR 610 structural changes. [Amended June 22, 1962]

31.9(100) T.III Electrical Wiring. Electrical * * * 1966 IDR 610 with 30.8(100) T.III of these regulations.

31.10(100) T.III Heating Equipment.

31.10(1) Heating equipment shall be installed, * * * 1966 IDR 610 accordance with 30.6(6) and 30.6(7) of these regulations.

31.10(2) Installation for any heating equipment * * * 1966 IDR 610 instruction and conditions of safe operation.

31.10(3) Acceptable evidence for complying with 31.10(2) shall be labeling or listed equipment by * * * 1966 IDR 610 approval of the state fire marshal.

31.10(4) Oil burning equipment shall be installed, maintained and operated in accordance with chapter 25 of the flammable liquid regulations of the state of Iowa.

31.10(5) All gas burning equipment shall be installed * * * 1966 IDR 610 gas regulations of the state of Iowa.

31.10(6) Floor-mounted flame heating equipment shall not be allowed to be installed in any classroom. [Filed April 6, 1965]

31.11(100)T.III Gas Piping.

31.11(1) Gas piping shall be in accordance with * * * 1966 IDR 610 of Iowa.

31.11(2) All gas service lines into buildings * * * 1966 IDR 610 shutoff valve outside the building.

31.11(3) Gas piping cannot run in inclosed space without proper venting. [Filed April 6, 1965]

31.12(100)T.III Fire Extinguishers.

31.12(1) Each college building shall be equipped * * * 1966 IDR 610 approved by the state fire marshal.

31.12(2) NFPA Bulletin applicable. Vaporizing * * * 1966 IDR 610 extinguishing agents shall not be approved. [Filed April 6, 1965]

31.13(100)T.III Basements.

31.13(1) In existing college buildings, basement * * * 1966 IDR 610 with "a" or "b" and compliance with "c", "d" and "e".

a. Direct approved egress door from classrooms to the outside.

b. Classroom doors open into a corridor that leads directly outside.

c. Inside stairs from basement corridors, * * * 1966 IDR 610 construction.

d. Doors from basement classroom corridors, * * * 1966 IDR 610 * * * 1966 IDR 611 shall be permitted.

e. Buildings, unless of fire-resistive * * * 1966 IDR 611 systems in the entire basement area. [Amended April 6, 1965]

31.14(100)T.III Fire Hazard Safeguards in Existing Buildings.

31.14(1) Ventilating ducts discharging into * * * 1966 IDR 611 standard manner through the roof.

31.14(2) Cooking ranges and other cooking * * * 1966 IDR 611 approved manner.

31.14(3) Discarded furniture, furnishings or * * * 1966 IDR 611 or curriculum schedule.

31.14(4) Space used for storage under * * * 1966 IDR 611 closed and locked.

31.14(5) Waste paper baling and storage shall * * * 1966 IDR 611 construction.

31.14(6) Storage of paint products and flammable * * * 1966 IDR 611 approved metal cabinet. [Filed April 6, 1965]

31.15(100)T.III Automatic Sprinklers.

31.15(1) Subrules 31.15(2)—31.15(9), inclusive, shall * * * 1966 IDR 611 safety and a sprinkler system installation is ordered.

31.15(2) Where automatic sprinkler protection is * * * 1966 IDR 611 provisions of this section.

31.15(3) Automatic sprinkler systems shall be * * * 1966 IDR 611 paragraphs of this section.

31.15(4) Automatic sprinkler systems for * * * 1966 IDR 611 considered light hazard occupancies.

31.15(5) Automatic sprinkler systems shall be * * * 1966 IDR 611 fire alarm system required by state law.

31.15(6) Partial automatic sprinkler systems * * * 1966 IDR 611 sprinklered for partial systems.

31.15(7) a. All automatic sprinklers installed * * * 1966 IDR 611 and reliable water supplies.

b. Public water supplies for sprinkler systems * * * 1966 IDR 611 sprinkler head.

c. Where public water supply is not available and * * * 1966 IDR 611 adequate to discharge all of the water in the tank.

31.15(8) All automatic sprinkler systems required * * * 1966 IDR 611 to assure proper maintenance.

31.15(9) In existing buildings of ordinary or * * * 1966 IDR 611 do not exceed a basement and two full stories.

31.16(100)T.III Open Plan Buildings.

31.16(1) In existing college buildings, * * * 1966 IDR 611 requirements for fire safety of 31.15(2)—31.15(9), inclusive, shall apply.

31.16(2) This will include regulations for all * * * 1966 IDR 611 corridors that are used for exit facilities.

31.16(3) Open plan buildings shall have inclosed * * * 1966 IDR 611 floors protected in accordance with 31.5(1).

31.16(4) Open plan buildings shall not exceed thirty * * * 1966 IDR 611 one-hour construction.

31.16(5) Any cafeterias, gmnasiums or auditoriums * * * 1966 IDR 612 assembly areas.

31.16(6) Open plan buildings that do not have a * * * 1966 IDR 612 detection system.

31.16(7) A sprinkler system may be installed in * * * 1966 IDR 612 plan building.

31.16(8) Distance of travel to the nearest exit * * * 1966 IDR 612 fifty feet.

CHAPTER 32

FIRE SAFETY RULES AND REGULATIONS FOR HOTELS, APARTMENT HOUSES, DORMITORIES, LODGING OR ROOMING HOUSES

[Filed and indexed June 22, 1962]

Pursuant to the authority conferred upon my office by the provisions of chapter 100, section 100.1(5) and section 100.35, Code 1962, the following rules and * * * 1966 IDR 612 about the fifteenth day of May, 1962.

32.1(100)T.III General principles and requirements—applicable to all classes of buildings in these regulations.

32.1(1) Each building or structure referred to in * * * 1966 IDR 612 ineffective due to some human or mechanical failure.

32.1(2) Exits shall be so arranged and maintained * * * 1966 IDR 612 shall open outward and indicated with the word "Exit."

32.1(3) Exits shall be visible or the route to * * * 1966 IDR 612 within the building.

32.1(4) In buildings or structures where artificial * * * 1966 IDR 612 exit signs.

32.1(5) All vertical ways of exit and other vertical * * * 1966 IDR 612 have evacuated the building.

32.1(6) *Window Exits.* Window exits opening onto * * * 1966 IDR 612 and is sufficient size to allow an adult to pass through.

32.1(7) *Dead-End Corridor.* Dead-end corridors * * * 1966 IDR 612 a Class A or Class B hotel.

32.1(8) *Gas Piping.* All gas piping and the * * * 1966 IDR 612 the use of liquefied petroleum gas.

32.1(9) *Electrical Wiring and Appliances.* The * * * 1966 IDR 612 National Electric Code.

32.1(10) *Fire Protection Equipment and Devices.* * * * 1966 IDR 612 state fire marshal.

32.1(11) In all buildings or structures of such * * * 1966 IDR 612 may require an automatic fire detection alarm system.

32.1(12) In cases of practical difficulty or * * * 1966 IDR 612 these regulations.

32.1(13) Nothing in these regulations shall be * * * 1966 IDR 612 in these regulations.

32.1(14) Compliance with these regulations shall * * * 1966 IDR 612 * * * 1966 IDR 613 conditions of buildings or structures.

32.2(100)T.III Definitions.

32.2(1) For the purpose of these * * * 1966 IDR 613 shall be used.

32.2(2) *Hotels—Class A.* Class A hotels shall * * * 1966 IDR 613 classified as hotels.

32.2(3) *Hotels—Class B.* Class B hotels shall * * * 1966 IDR 613 above the second story.

32.2(4) *Apartment Houses.* This includes buildings * * * 1966 IDR 613 any other name.

32.2(5) *Dormitories.* This shall include buildings * * * 1966 IDR 613 types of occupancy.

32.2(6) *Lodging or Rooming Houses.* This shall * * * 1966 IDR 613 cooking facilities for individual occupants.

32.2(7) *Row Housing.* Contiguous individual family * * * 1966 IDR 613 dwellings for the purpose of these regulations only.

32.3(100)T.III Hotels.

32.3(1) Rule 32.3(100)T.III shall apply to hotels as defined in 32.2(100)T.III, 32.2(2) and 32.2(3).

32.3(2) Exits.

a. No less than two exits, as remote from each * * * 1966 IDR 613 least two different directions except as provided in 32.1(7).

b. The exits, as specified in 32.3(1)"a", shall * * * 1966 IDR 613 may be increased to one hundred fifty feet.

c. *Types of Exits from Upper Floors.* Exits from upper floors shall be in accordance with the following types: (1) Inclosed stairways, (2) horizontal exits, (3) outside stairways, (4) fire escapes, Class B.

d. *Construction and Arrangements of Exits.* All * * * 1966 IDR 613 chapter 103, Code of Iowa.

e. Exits from public hallways or passageways in * * * 1966 IDR 613 as required for Class A hotels.

f. In Class B hotels, the second means of exit may * * * 1966 IDR 613 103.7, Code of Iowa, providing the hotel does not exceed four full stories in height.

g. There shall be conspicuously displayed, in each * * * 1966 IDR 613 of travel to reach them from the guest room.

32.3(3) Protection of Vertical Openings.

a. All stairways, elevator shafts and other vertical * * * 1966 IDR 613 inclosed down to the lobby level.

b. Unprotected vertical openings may be permitted * * * 1966 IDR 613 basement areas used for hotel purposes.

c. Wire glass, not to exceed nine hundred square inches in any single frame, may be used in stairway doors.

d. All doors to stairway inclosures shall be * * * 1966 IDR 614 in 32.3(3) "a", and shall be a self-closing type.

32.3(4) Interior Finish. The exit ways, lobbies, * * * 1966 IDR 614 Board of Underwriters Laboratories.

32.3(5) Basements. Basements used only for * * * 1966 IDR 614 for hotel purposes.

32.3(6) Special Hazard Areas. All rooms or areas of * * * 1966 IDR 614 parts of the building by fire walls or fire doors.

32.3(7) Fire Alarm Systems and Evacuation.

a. Each hotel, both Class A and Class B, shall * * * 1966 IDR 614 occupants in the hotel.

b. The hotel management shall formulate a plan and * * * 1966 IDR 614 department in case of fire.

c. Hotels having fifteen or less guests, with each * * * 1966 IDR 614 can waive the requirements of 32.3(7) "a".

32.3(8) Fire Extinguishers. Each hotel both * * * 1966 IDR 614 extinguishers may be waived.

32.4(100)T.III Apartment houses.

32.4(1) Any apartment building which complies with all of the requirements of 32.3(100)T.III, of * * * 1966 IDR 614 and the following paragraphs waived.

32.4(2) Each living unit shall have access to at * * * 1966 IDR 614 twenty feet in length.

32.4(3) Protection of Vertical Openings. The * * * 1966 IDR 614 same requirements as set forth in 32.3(3) of these regulations.

32.4(4) Interior Finish. Interior finish in * * * 1966 IDR 614 forth in 32.3(4) of these regulations.

32.4(5) Exit Lighting and Signs. All apartment * * * 1966 IDR 614 from any common corridor area.

32.4(6) Hazardous Occupancies. Hazardous occupancies * * * 1966 IDR 614 minimum of one-hour fire rating.

32.5(100)T.III Dormitories.

32.5(1) Any dormitory meeting all of the requirements in 32.3(100)T.III of these regulations, will be acceptable and the following provisions may be waived.

32.5(2) Exits.

a. All dormitories shall have exits so arranged that * * * 1966 IDR 614 grade level.

b. Exits shall be so arranged that it will not be * * * 1966 IDR 614 stair or fire exit.

c. Exits from upper floors shall be sufficient * * * 1966 IDR 614 protection of vertical openings.

d. Corridor and exit ways in dormitories shall have * * * 1966 IDR 614 directional signs shall be provided to indicate the exit.

32.5(3) Interior Finish. All interior finish of * * * 1966 IDR 615 two persons.

32.5(4) Fire Alarm Systems. A manual fire alarm * * * 1966 IDR 614 the fire alarm is sounded.

32.5(5) Fire Extinguishers. Extinguishers shall be * * * 1966 IDR 615 in accordance with 32.3(8) of these regulations.

32.5(6) Construction and Arrangement. Dormitories * * * 1966 IDR 615 of the following paragraphs.

a. **Fire-resistive Construction.** There is no limit to the area and height of the building.

(1) Columns and piers shall have a fire-resistance rating of not less than three hours.

(2) Floors shall have a fire-resistance rating of two hours.

(3) Roofs shall have a fire-resistance rating of not less than one and one-half hours.

(4) Beams, girders and trusses shall have a fire-resistance rating of two hours.

(5) Walls bearing exterior and interior portions shall have a fire resistance rating of three hours.

(6) Partitions shall have a fire-resistance rating of two hours.

b. *Noncombustible Construction.* Noncombustible * * * 1966 IDR 615 protected with an approved sprinkler system.

(1) *General.* All structural including walls, * * * 1966 IDR 615 fire-resistive.

(2) Exterior walls shall have fire-resistive rating of two hours.

c. One-story buildings shall be constructed of * * * 1966 IDR 615 dormitories.

d. Other types of construction for dormitories not permitted.

e. The ratings noted in the above paragraphs * * * 1966 IDR 615 Protection Association Codes.

32.6(100)T.III Lodging or rooming houses.

32.6(1) *Exits.* There shall be two means of * * * 1966 IDR 615 exceed four stories in height.

32.6(2) Any sleeping room below the street * * * 1966 IDR 615 the building.

32.6(3) The general requirements for fire safety as set out in 32.1(100)T.III, of these regulations, * * * 1966 IDR 615 the intent of 32.1(100)T.III of these regulations.

32.6(4) No frame dwelling, more than three * * * 1966 IDR 615 for use as a lodging or rooming house.

TITLE IV
MOTOR VEHICLE REGISTRATION DIVISION
CHAPTER 1

TRANSFER OF OWNERSHIP

1.1(321)T.IV The transfer of ownership of a * * * 1966 IDR 615 in substantially the following form:

"AFFIDAVIT OF REPOSSESSION

* * * 1966 IDR 615 * * * 1966 IDR 616 registered in the name of its registered owner.

1.2(321)T.IV The ownership of a vehicle which * * * 1966 IDR 616 in which such transfer is made.

1.3(321)T.IV The ownership of a registered vehicle * * * 1966 IDR 616 dealer during the month of January.

1.4(321)T.IV The ownership of a registered truck, * * * 1966 IDR 616 paid in full for that year.

1.5(321)T.IV A new and unregistered vehicle purchased * * * 1966 IDR 616 his home state.

1.6(321)T.IV When an Iowa registration certificate * * * 1966 IDR 616 such vehicle to be in him.

1.7(321)T.IV The owner of a house trailer which is * * * 1966 IDR 616 Iowa use tax before registering such vehicle.

1.8(321)T.IV All vehicle registration plates or * * * 1966 IDR 616 be issued by him in numerical sequence.

1.9(321)T.IV Where the ownership of a vehicle * * * 1966 IDR 616 with the following rules:

1.9(1) When ordered confiscated or forfeited * * * 1966 IDR 616 of the court's order;

1.9(2) When sold on a peace officer's bill of * * * 1966 IDR 616 fee shall be on a pro rata basis from the date of such sale;

1.9(3) When sold or transferred under a * * * 1966 IDR 616 registration of the vehicle is completed.

1.10(321)T.IV Application for the designation * * * 1966 IDR 616 "special mobile equipment".

1.11(321)T.IV A certificate of designation issued * * * 1966 IDR 616 * * * 1966 IDR 617 showing of abuse thereof.

1.12(321)T.IV The notice to the county treasurer * * * 1966 IDR 617 remittance of fifty cents to county treasurer."

1.13(321)T.IV The ownership of a registered * * * 1966 IDR 617 which may be in form and substance as follows:

"Power of Attorney

* * * 1966 IDR 617

Subscribed and sworn to before me this day of 19....

Notary Public in and for said County and State"

1.14(321)T.IV A permit, granting to a nonresident * * * 1966 IDR 617 prescribed and adopted by the director of said division.

1.15(321)T.IV The owner of a house trailer which is * * * 1966 IDR 617 of that division may prescribe.

1.16(321)T.IV The registration card or certificate * * * 1966 IDR 617 the driver's compartment of the towing vehicle.

1.17(321)T.IV **Current Registration Receipt.** For * * * 1966 IDR 617 receipt presented during the month of January.

[Filed December 21, 1953]

TITLE V
PEACE OFFICER'S RETIREMENT,
ACCIDENT AND DISABILITY
SYSTEM

CHAPTER 1

BOARD OF TRUSTEES

1.1(97A)T.V Vice-Chairman of Board. The treasurer * * * 1966 IDR 617 the duties of the chairman.

1.2(97A)T.V Place of Meeting. The board of trustees shall meet at the office of the treasurer of state upon a call issued by the chairman or upon the joint call of any two members of the board at such other times as may be deemed necessary or expedient.

CHAPTER 2

BENEFITS

2.1(97A)T.V Creditable Service—Computation and Allowance of. In computing the total amount of * * * 1966 IDR 617 * * * 1966 IDR 618 days, shall not be allowed as creditable service.

2.2(97A)T.V Pension Allowance Vouchers to Women Beneficiaries. Pension allowance vouchers * * * 1966 IDR 618 in the order.

2.3(97A)T.V Fiscal Year of System. The calendar year is adopted as the fiscal year of the retirement system.

2.4(97A)T.V Member's Contributions—Amount of Salary Deductions Certified by Secretary. * * * 1966 IDR 618 determined accordingly.

2.5(97A)T.V Statement Required on Returns of Accumulated Contributions. Upon the application of * * * 1966 IDR 618 with the status of a new entrant."

TITLE VI

RULES FOR LICENSING DRIVERS

CHAPTER 1

DRIVERS' LICENSES

1.1(321)T.VI Driver's License Examinations: * * * 1966 IDR 524

The purpose of the examination is to determine three things:

1.1(1) Is the applicant physically and mentally competent to operate a motor vehicle with safety?

1.1(2) Does he know the law of the road, and * * * 1966 IDR 524 vehicle with safety?

1.1(3) Is he willing to keep his vehicle * * * 1966 IDR 524

The examination shall consist of four parts:

- a. Vehicle inspection;
- b. Driving test;
- c. Written or oral test; and
- d. Vision test.

* * * 1966 IDR 524 license will be required to pass parts "a", "b", "c" and "d" of such examination.

DRIVERS' LICENSES

[Filed January 6, 1960]

Pursuant to the authority granted in section * * * IDR 618 section 321.189, Code of Iowa.

1.2(321)T.VI The usual signature of the licensee * * * 1966 IDR 618 in the signature.

1.3(321)T.VI The full name appearing at the top of * * * 1966 IDR 618 first position and the surname in the last position.

1.4(321)T.VI All persons possessing a valid * * * 1966 IDR 618 be issued in his or her new name.

1.5(321)T.VI No license shall be valid unless * * * 1966 IDR 618 to these rules and regulations.

1.6(321)T.VI Time when an Applicant May Appear for Re-examination:

1.6(1) If the uniformed driver's license * * * 1966 IDR 524 equipment is ready and time permits.

1.6(2) If the applicant must do some studying * * * 1966 IDR 524 may need this much time to prepare himself properly.

1.6(3) If the applicant fails the road test and * * * 1966 IDR 524 * * * 1966 IDR 525 license examiner.

1.7(321)T.VI Vehicle Inspections:

1.7(1) The vehicle inspection will be made by the * * * 1966 IDR 525 registration certificate.

1.7(2) No person shall be given a driving test * * * 1966 IDR 525 his vehicle for another inspection on the same day.

1.8(321)T.VI Road Sign Test. Applicants who are unable to read standard signs and * * * 1966 IDR 525 the written test.

1.9(321)T.VI Test for Road Rules.

1.9(1) Purpose. The purpose of the road rules test * * * 1966 IDR 525 enough to permit him to drive safely.

1.9(2) Scoring. The following rules will govern * * * 1966 IDR 525 instruction permit:

a. The applicant must satisfactorily answer * * * 1966 IDR 525 license, school permit or instruction permit.

b. On road sign tests, the applicant must answer correctly seven out of ten questions submitted to him.

c. To satisfactorily pass the chauffeur's * * * 1966 IDR 525 as for written tests.

1.10(321)T.VI Road Test Procedures. Driving tests will be given whenever the weather * * * 1966 IDR 525 not be made unless absolutely necessary.

1.11(321)T.VI Vision Examination.

1.11(1) All applicants for an operating license will * * * 1966 IDR 525 as a vision failure.

1.11(2) License restrictions based on vision scores * * * 1966 IDR 525 table:

Vision Score	Restrictions
20-40 to 20-50	"To Adequate Glasses", when glasses are required to correct to this tolerance.
20-50 to 20-60	"To Adequate Glasses", when glasses will correct vision to this tolerance, plus "Daylight Driving Only".
20-60 but better than 20-75	"To Adequate Glasses", when glasses will correct vision to this tolerance, plus "Daylight Driving Only", plus "Maximum Speed 45 M.P.H."

1.12(321)T.VI Instruction Permits. The law does not permit driving on Iowa highways without * * * 1966 IDR 525 statutory fee, be issued a regular license.

Adopted and issued July 4, 1953. [Filed July 9, 1953]

1.13(321)T.VI Restricted Licenses. There are many * * * 1966 IDR 525 * * * 1966 IDR 526 examiner:

1.13(1) *Time*—some drivers may be restricted to * * * 1966 IDR 526 driver's working hours only.

1.13(2) *Devices*—on driver, such as artificial legs, arms, braces, or other equipment except hearing aids.

1.13(3) *Adequate Glasses*—the most common * * * 1966 IDR 526 wear glasses while driving.

1.13(4) *Type of Vehicle*—if the driving * * * 1966 IDR 526 example, "Motorcycle only".

1.13(5) Restricted to operation of taxicab or passenger car.

1.13(6) *Place*—restrictions may be imposed on an * * * 1966 IDR 526 within Smithfield city limits only".

1.13(7) When the application of a minor must be * * * 1966 IDR 526 or, "Restricted to driving 1939 Plymouth coupe, engine No. 9603214".

1.13(8) Any restriction imposed on an operating * * * 1966 IDR 526 restriction box.

1.14(321)T.VI Restricted Licenses for Minors. * * * 1966 IDR 526 Acts of the 55th General Assembly.

Adopted and issued July 4, 1953. [Filed July 9, 1953]

1.15(321)T.VI Standards for Bodily Disabilities. * * * 1966 IDR 526 or devices:

1.15(1) Extremities.

a. When both hands and both feet or one hand * * * 1966 IDR 526 equipped with needed special equipment.

b. When either hand is missing or useless * * * 1966 IDR 526 wheel and mechanical turn indicator.

c. When either foot is missing or useless * * * 1966 IDR 526 with a pedal extension, or a manual brake or clutch.

1.15(2) General.

a. Joints stiff Unrestricted license may be issued at discretion of driver's license examiner.

b. Body or limbs shaky or wobbly * * * 1966 IDR 526 driver's license examiner.

c. Strength too small for legal stop No * * * 1966 IDR 526 the process of stopping.

d. Stature too small for legal stop No * * * 1966 IDR 526 the process of stopping.

e. If any special or unusual equipment such * * * 1966 IDR 526 equipped with such special equipment, if needed.

1.15(3) Hearing. Deaf License will be restricted * * * 1966 IDR 526 bad driving record.

1.15(4) Whenever the department has reason to * * * 1966 IDR 526 license is made by the department.

1.16(321)T.VI Mental Disability Standards:

1.16(1) No person who has ever been committed to * * * 1966 IDR 526 * * * 1966 IDR 527 he has been discharged as cured.

1.16(2) Whenever the department has any * * * 1966 IDR 527 to drive safely.

1.16(3) When statements of restoration-to- * * * 1966 IDR 527 motor vehicle driver's license.

1.17(321)T.VI Temporary Driver's Permit.

1.17(1) *General.* Any person on first * * * 1966 IDR 527 an operator's license to the applicant.

1.17(2) *Invalidation.*

a. *General.* This temporary driving permit * * * 1966 IDR 527 application for license if refused.

b. *Specific.* The department will refuse the * * * 1966 IDR 527 the permit.

1.17(3) *Reapplication.* Such person will be * * * 1966 IDR 527 reapply for such license.

1.17(4) *Extension of Permit.* If the grounds for * * * 1966 IDR 527 of six months from the date of reissuance.

1.17(5) *Issuance of License.* Any applicant who * * * 1966 IDR 527 written and vision tests.

This rule is intended to implement section 321.181.

TITLE VII

STANDARDS AND TESTING FOR MOTOR VEHICLE OPERATION

CHAPTER 1

MOTOR VEHICLE TESTING STATIONS

Pursuant to authority granted to the commissioner of public safety of the state of Iowa by section 321.4, Code of Iowa 1962, the following rules and regulations pertaining to motor vehicle testing stations are hereby adopted:

[Filed and indexed September 20, 1962]

The department of public safety has certain * * * 1966 IDR 618 stations as follows:

Prescribing the shape, size, color and * * * 1966 IDR 618 passing the tests provided.

1.1(321)T.VII Inspection sticker.

1.1(1) The inspection sticker affixed upon * * * 1966 IDR 618 with the following requirements:

a. *Shape, size and inscription:*

* * * 1966 IDR 618

b. *Color.*

(1) The inspection stickers shall be of * * * 1966 IDR 619 inspection.

(2) There shall at all times be a marked * * * 1966 IDR 619 letters or numerals thereon.

(3) Any and all of the following colors may be used: Red, yellow, green, blue, black, white.

[Filed and indexed November 14, 1962]

The department of public safety has certain * * * 1966 IDR 619 to-wit:

Supervision and control of the type of * * * 1966 IDR 619 321.245, Code of Iowa 1962).

1.2(321)T.VII Supervision of tests and facilities.

1.2(1) *Inspection by commissioner.* The commissioner of public safety may inspect any * * * 1966 IDR 619 all stations.

1.3(321)T.VII Facilities.

1.3(1) Motor vehicle testing stations must * * * 1966 IDR 619 passenger vehicles.

1.3(2) Motor vehicle testing stations must * * * 1966 IDR 619 domestic and foreign.

1.3(3) Facilities should be maintained as a clean and orderly place of business.

1.3(4) Adequate space must be provided for * * * 1966 IDR 619 expedite inspection.

1.3(5) All inspection equipment must be * * * 1966 IDR 619 functioning.

1.4(321)T.VII Required equipment.

1.4(1) *Definition.* Required equipment is * * * 1966 IDR 619 to have by applicable law and regulation.

1.4(2) *Inspection procedure.* Items to be checked:

a. Legal registration (certificate and plates.)

b. Vehicle glazing.

c. Body items.

d. Brakes.

e. Tires.

f. Lighting systems.

g. Miscellaneous equipment.

h. Exhaust system.

i. Emergency warning devices.

1.4(3) *Causes for rejection.* Noncompliance * * * 1966 IDR 619 regulations shall be cause for rejection.

1.5(321)T.VII Legal registration.

1.5(1) *Definitions.*

Legal Registration. Registration receipt either original or renewal and registration plate or plates.

1.5(2) *Inspection procedure.* Visual.

1.5(3) *Causes for rejection.*

a. Registration plate or plates not * * * 1966 IDR 619 swinging.

b. Registration plate numbers not in agreement with registration receipt.

c. Registration plates not clearly visible and legible.

d. Registration certificate not plainly visible.

1.6(321)T.VII Vehicle glazing.**1.6(1) Definitions.**

a. Safety glass. Any product composed of * * * 1966 IDR 619 commissioner (Section 321.445, Code of Iowa 1962).

b. Cloudiness. Any degree of discoloration * * * 1966 IDR 619 must not be confused with the cloudiness restrictions.

c. Approved safety glass. The list of * * * 1966 IDR 619 * * * 1966 IDR 620 testing facility.

1.6(2) Inspection procedure.

a. Check all windows for safety glass where required.

b. Check windshield and all windows for cracks and sharp edges.

c. Check windshield and all windows for * * * 1966 IDR 620 obscure driver's view.

d. Check rear window for visibility.

[Amended September 16, 1964]

1.6(3) Causes for rejection.

a. Failure to use safety glass in all windows.

b. Nontransparent materials used to replace the vehicle glass or glazing materials.

c. Breaks, cracks, discolorations, * * * 1966 IDR 620 which interfere with his vision.

d. Windows in poor condition. Vehicle * * * 1966 IDR 620 scratched, broken, or discolored or cloudy.

e. Wiper blade scratches on windshield if sever enough to distort vision.

f. Rear window visibility is unsatisfactory, * * * 1966 IDR 620 proper outside mirror.

[Amended September 6, 1964]

1.7(321)T.VII Body items.**1.7(1) Inspection procedure.**

a. Check for defective or dislocated parts projecting from vehicle.

b. Check floor pans on any vehicles manufactured before 1946.

c. Check bumpers, fenders and frames for protruding or broken sharp edges.

[Amended September 16, 1964]

1.7(2) Causes for rejection.

a. Bumpers, fenders, exterior sheet * * * 1966 IDR 620 dition as to endanger any person.

b. Floor pans rusted through, on any * * * 1966 IDR 620 into the body of the vehicle.

[Amended September 16, 1964]

1.8(321)T.VII Brakes.**1.8(1) Definitions.**

a. Service brake. The primary brake for retarding, stopping, and controlling a vehicle.

b. Parking brake. The brake independent in * * * 1966 IDR 620 for holding a vehicle while parked.

c. Pedal reserve. The amount of the total * * * 1966 IDR 620 depressed to the brake applied position.

1.8(2) Inspection procedure.

a. Simple tests and visual inspection * * * 1966 IDR 620 accommodate a large volume of vehicles)

(1) *Pedal reserve.* Test vehicle in a * * * 1966 IDR 620 systems having power assisted hydraulic systems.

Cause for rejection: Less than * * * 1966 IDR 620 under moderate foot force.

(2) *Service brake.* Test vehicle on a * * * 1966 IDR 620 must not pull to the right or left.

(3) *Parking brakes.* Check by parking * * * 1966 IDR 620 actuator stroke.

Cause for rejection: Parking brake fails to hold vehicle on test grade.

b. Brake testing equipment procedures.

(1) *Service brake.* The vehicle so * * * 1966 IDR 620 as to tractor and trailer.

[Amended September 16, 1964]

1.9(321)T.VII Tires.**1.9(1) Inspection procedure.** Visual.**1.9(2) Causes for rejection.**

a. Solid rubber tires having less than * * * 1966 IDR 620 surface.

b. One or more pneumatic tires worn to * * * 1966 IDR 620 surface.

c. A tire or tires having on its periphery * * * 1966 IDR 620 * * * 1966 IDR 621 to skid.

1.10(321)T.VII Lighting systems.**1.10(1) General.**

a. Road lighting equipment must be * * * 1966 IDR 621 sections 321.409 and 321.417, Code of Iowa 1962.

b. Rear lamps must comply with sections 321.387 and 321.388, Code of Iowa 1962.

c. All other lamps and signal devices, * * * 1966 IDR 621 tions as set forth in chapter 321, Code of Iowa 1962.

d. Optional equipment shall not be the * * * 1966 IDR 621 in chapter 321, Code of Iowa 1962.

e. Headlight testing equipment may be * * * 1966 IDR 621 facility provided.

f. Reflectors and other safety devices * * * 1966 IDR 621 Iowa 1962.

1.10(2) *Inspection procedure.* Beams * * * 1966 IDR 621 which gives essentially equivalent results.

1.10(3) *Causes for rejection.*

a. Any bulb in any lamp required by law or regulation which fails to function properly.

b. A cracked, broken, or missing lens.

c. A lens that is rotated, upside down, * * * 1966 IDR 621 installed.

d. A lens marked "left" or "right", not appropriately installed.

e. A separable type lens, the name of * * * 1966 IDR 621 approved for use with that lamp body.

f. A headlamp with dirt or moisture inside, * * * 1966 IDR 621 reflector deterioration.

g. A lamp which is not securely fastened to the vehicle.

h. A lamp showing a beam of color contrary to law or regulation.

i. Any lamp or lens which is turned or * * * 1966 IDR 621 directed.

j. Any lamp or reflex reflector not of an approved type when approval is required.

The list of approved lighting devices and * * * 1966 IDR 621 testing facility.

k. A cracked, broken, missing lens or reflex reflector.

1.11(321)T.VII *Miscellaneous equipment.*

1.11(1) *Horn.*

a. A motor vehicle or vehicle not * * * 1966 IDR 621 be rejected.

b. A motor vehicle or vehicle equipped * * * 1966 IDR 621 must be rejected.

1.11(2) *Rear-view mirror.* A motor vehicle equipped * * * 1966 IDR 621 rear of such vehicle must be rejected.

1.11(3) *Windshield wipers.* The windshield * * * 1966 IDR 621 not so equipped must be rejected.

1.12(321)T.VII *Exhaust system.*

1.12(1) *Inspection procedure.* The exhaust * * * 1966 IDR 621 should be given attention.

1.12(2) *Causes for rejection.*

a. Holes, leaking seams, or loose interior baffles in the muffler.

b. A muffler cutout, muffler bypass, or similar device.

[Amended September 16, 1964]

1.13(321)T.VII *Emergency warning devices.*

1.13(1) *Definitions.* Include lanterns, * * * 1966 IDR 621 type flares, and flags.

1.13(2) *Inspection procedure.* When emergency * * * 1966 IDR 621 with the provisions of such law or regulation.

1.13(3) *Causes for rejection.*

a. Not of an approved type, make, model, number of units, or capacity.

b. Not in operating condition.

These amendments to the rules are intended to implement section 321.245 of the Code.

Pursuant to authority of chapter 301, Acts of the Sixty-first General Assembly, (325.38) the following rules are adopted.

[Filed July 28, 1966]

CHAPTER 2

MOTOR CARRIER SAFETY REGULATIONS

2.1(325)T.VII *Definitions.*

2.1(1) "Vehicle" means every device * * * Jan. 1967 Sup. IDR 141 compensation.

2.1(2) "Motor vehicle" means every self- * * * Jan. 1967 Sup. IDR 141 city transit buses or school buses.

2.1(3) "Trailer" means every vehicle * * * Jan. 1967 Sup. IDR 141 vehicle.

2.1(4) "Semitrailer" means every vehicle * * * Jan. 1967 Sup. IDR 141 by another vehicle.

2.1(5) "Motor truck or truck" means every * * * Jan. 1967 Sup. IDR 141 of any kind for compensation.

2.1(6) "Truck tractor" means every motor ve- * * * Jan. 1967 Sup. IDR 141 drawn.

2.1(7) "Bus" means any motor vehicle used * * * Jan. 1967 Sup. IDR 141 or school buses.

2.2(325)T.VII *Equipment.*

2.2(1) *Electrical equipment wiring specifications.* Wiring for both low tension * * * Jan. 1967 Sup. IDR 141 semitrailer.

2.2(2) *Wiring to be protected.* Wiring shall, * * * Jan. 1967 Sup. IDR 141 * * * Jan. 1967 Sup. IDR 142 grommet of rubber or other suitable material.

2.2(3) *Grounds.* The battery ground and * * * Jan. 1967 Sup. IDR 142 conductive coating.

2.2(4) *Battery installation.* Every storage * * * Jan. 1967 Sup. IDR 142 and drainage.

2.2(5) *Overload protection devices.* The * * * Jan. 1967 IDR 142 breaker.

2.2(6) *Detachable electrical connection.* * * * Jan. 1967 Sup. IDR 142 which they are attached.

2.2(7) *Wiring-installation.* Electrical wiring * * * Jan. 1967 Sup. IDR 142 is prohibited.

2.3(325)T.VII Brakes.

2.3(1) *Brake tubing and hose, adequacy.* Brake tubing and brake hose shall be:

a. Designed and constructed of proper * * * Jan. 1967 Sup. IDR 142 continued functioning;

b. Sufficiently long and flexible as to * * * Jan. 1967 Sup. IDR 142 parts to which they are attached;

c. Suitably secured against chafing, kinking, or other mechanical injury; and

d. Brake hose shall be so constructed as to * * * Jan. 1967 Sup. IDR 142 "Air Brake Hose" or "Vacuum Brake Hose".

2.3(2) *Brake tubing and hose connections.* All connections for air, vacuum, or hydraulic braking systems shall:

a. Be adequate in * * * Jan. 1967 Sup. IDR 142 continued functioning;

b. Be designed, constructed, and installed * * * Jan. 1967 Sup. IDR 143 defects;

c. Have suitable provision in every * * * Jan. 1967 Sup. IDR 143 assurance against accidental disconnection;

d. Have the vacuum brake engine manifold connection at least $\frac{3}{8}$ inch in diameter.

2.3(3) *Brake lining.* The brake lining on every * * * Jan. 1967 Sup. IDR 143 for safe and reliable stopping of the motor vehicle.

2.3(4) *Single valve to operate all brakes.* * * * Jan. 1967 Sup. IDR 143 designed to be operated by a single valve.

2.3(5) *Warning devices and gauges.*

a. *Air brakes.* Every bus, truck, and truck * * * Jan. 1967 Sup. IDR 143 available for braking.

b. *Vacuum warning signal.* Every bus, truck, * * * Jan. 1967 Sup. IDR 143 mercury available for braking.

2.4(325)T.VII Glazing and window construction.

2.4(1) *Glazing in specified openings.*

a. *Windshield condition.* Every motor vehicle * * * Jan. 1967 Sup. IDR 143 are allowable:

(1) Coloring or tinting applied in manufacture for reduction of glare.

(2) Any crack not over $\frac{1}{4}$ inch wide, if not * * * Jan. 1967 Sup. IDR 143 with driver's vision.

(3) Any damaged area which can be covered by a * * * Jan. 1967 Sup. IDR 143 with driver's vision.

b. *Use of vision-reducing matter.* No motor * * * Jan. 1967 IDR 143 of such windshield.

2.4(2) *Window construction.* Windows in trucks * * * Jan. 1967 Sup. IDR 143 then no windows shall be required in such locations.

2.5(325)T.VII Fuel systems.

2.5(1) *Requirements and prohibitions.*

a. *Fuel container location.* No part of any fuel * * * Jan. 1967 Sup. IDR 143 * * * Jan. 1967 Sup. IDR 144 on a semi-trailer or trailer.

b. *Fuel container on bus.* No part of any fuel * * * Jan. 1967 Sup. IDR 144 excess of one ounce per minute.

c. *Gravity or syphon feed prohibited.* No fuel * * * Jan. 1967 Sup. IDR 144 carburetor or injector.

d. *Selector valves.* If a motor vehicle is equipped * * * Jan. 1967 Sup. IDR 144 seat in order to operate the valve.

e. *Liquid fuel tank requirements.*

(1) Every liquid fuel tank or container used * * * Jan. 1967 Sup. IDR 144 with regard to tank vents.

(2) Replacement side-mounted gasoline tanks, * * * Jan. 1967 Sup. IDR 144 paragraphs "f" and "i" of this section.

f. *Liquid fuel tank construction.*

(1) *Material.* Material used in the construction * * * Jan. 1967 Sup. IDR 144 purpose intended.

(2) *Joints.* Joints of the tank body shall be * * * Jan. 1967 Sup. IDR 144 or silver soldering.

(3) *Fittings.* The tank shall be provided with suitable flanges or spuds for the assembly of all fittings.

(4) *Threads.* Threads on all fittings shall be * * * Jan. 1967 Sup. IDR 144 engagement in any fitting.

(5) *Drains and bottom fittings.* Drains and * * * Jan. 1967 Sup. IDR 144 in a suitable flange or spud.

(6) *Fuel discharge line.* The fitting through * * * Jan. 1967 Sup. IDR 144 above the normal full line of the tank.

(7) *Excess flow valve.* When pressure devices * * * Jan. 1967 Sup. IDR 144 event the fuel feed line is broken.

(8) *Fill-pipe design.* The fill-pipe shall be * * * Jan. 1967 Sup. IDR 144 rate of at least 20 gallons per minute without spillage.

(9) *Air vent.* Every fuel tank shall be equipped * * * Jan. 1967 Sup. IDR 144 or combined with the filler cap or safety vent.

(10) *Safety vents, fusible.* Side-mounted * * * Jan. 1967 Sup. IDR 144 * * * Jan. 1967 Sup. IDR 145 provided, at least one shall be in the top of the tank.

(11) All fuel tanks having a fuel capacity * * * Jan. 1967 Sup. IDR 145 body, seams, or any bottom opening in the tank.

g. Liquid fuel tank capacity markings. The * * * Jan. 1967 Sup. IDR 145 capacity.

h. Liquid fuel tank identity markings. Each * * * Jan. 1967 Sup. IDR 145 by lot number or otherwise.

i. Liquid fuel tank installation.

(1) *General requirement.* The tank shall * * * Jan. 1967 Sup. IDR 145 practice.

(2) *Location of fill-pipe.* The nozzle * * * Jan. 1967 Sup. IDR 145 process on the exhaust system or battery.

j. Liquid fuel tank tests.

(1) *Drop test on corner of tank.* The tank * * * Jan. 1967 Sup. IDR 145 water per minute as a result of this test.

(2) *Drop test on fill-pipe.* The tank when filled * * * Jan. 1967 Sup. IDR 145 this test.

(3) *Safety vent test.* The safety vent, or vents, * * * Jan. 1967 Sup. IDR 145 if a comparable result is obtained.

(4) *Rupture test.* The tank and all appurtenances * * * Jan. 1966 Sup. IDR 145 which the safety vent is required to release.

(5) *Spillage test.* At ordinary room * * * Jan. 1967 Sup. IDR 145 shall withstand this test.

k. Liquid fuel tank certificates. Every gasoline * * * Jan. 1967 Sup. IDR 145 manufacturer that it complies with such requirements.

2.5(2) *Liquefied petroleum gas fuel systems.* * * * Jan. 1967 Sup. IDR 145 * * * Jan. 1967 Sup. IDR 146 with the standard as provided herein.

2.6(325)T.VII **Coupling devices and towing methods.**

2.6(1) Coupling devices and towing methods, except for driveaway-towaway operations.

a. Fifth wheel mounting. The lower half of * * * Jan. 1967 Sup. IDR 146 of a fifth wheel on the frame to which it is attached.

b. Fifth wheel parts, securing. The upper * * * Jan. 1967 Sup. IDR 146 dolly.

c. Fifth wheel locking. Locking means shall * * * Jan. 1967 Sup. IDR 146 which is subsequent to December 31, 1952.

d. Tow bar. Every trailer shall be * * * Jan. 1967 Sup. IDR 146 frame.

e. Tracking. Coupling devices shall be so designed, * * * Jan. 1967 Sup. IDR 146 towing vehicle when it is moving in a straight line.

f. Safety chains. Every trailer shall be * * * Jan. 1967 Sup. IDR 146 permits.

g. Location of lower half of fifth wheel. The * * * Jan. 1967 Sup. IDR 147 motor vehicles comprising the combination.

h. Location of upper half of fifth wheel. The * * * Jan. 1967 Sup. IDR 147 vehicles in all turning maneuvers.

2.6(2) Coupling devices and towing methods, driveaway-towaway operations.

a. Number in combination. No more than 2 saddle-mounts may be used in any combination. No more than one motor vehicle shall be towed by tow bar.

b. Bumper tow bars on vehicles prohibited. Tow * * * Jan. 1967 Sup. IDR 147 not be used.

(1) *Tow bars, structural adequacy and mounting.* Every tow bar shall be structurally adequate and properly installed and maintained.

(2) *Tracking.* The tow bar shall be so * * * Jan. 1967 Sup. IDR 147 prohibited.

2.7(325)T.VII **Heaters.**

2.7(1) On every motor vehicle, every heater shall comply with the following requirements:

a. Definition. The term "heater" means any * * * Jan. 1967 Sup. IDR 147 heat the interior of any motor vehicle.

b. Prohibited types of heaters. The installation or use of the following types of heaters is prohibited:

(1) *Exhaust heaters.* Any type of exhaust heater * * * Jan. 1967 Sup. IDR 147 engine compartment air into any such space.

(2) *Unenclosed flame heaters.* Any type of * * * Jan. 1967 Sup. IDR 147 for heating the cargo of tank motor vehicles.

(3) *Heaters permitting fuel leakage.* Any type of * * * Jan. 1967 Sup.

IDR 147 the vehicle in which it is mounted.

(4) *Heaters permitting air contamination.* * * * Jan. 1967 Sup. IDR 147 gases.

2.8(325)T.VII **Defrosting device.** Every bus, truck, * * * Jan. 1967 Sup. IDR 147 is a part of the shipment being delivered.

2.9(325)T.VII **Rear-vision mirrors.** Every bus, * * * Jan. 1966 Sup. IDR 147 to the rear.

2.10(325)T.VII **Speedometer.** Every bus, truck, * * * Jan. 1967 Sup. IDR 147 * * * Jan. 1967 Sup. IDR 148 to 45 miles per hour nor to any towed vehicle.

2.11(325)T.VII **Exhaust system location.** * * * Jan. 1967 Sup. IDR 148 point shall be corrected immediately.

2.12(325)T.VII **Floors.** The flooring in all * * * Jan. 1967 Sup. IDR 148 interior surface in safe condition.

2.13(325)T.VII **Protection against shifting cargo.** * * * Jan. 1967 Sup. IDR 148 urban intersection.

2.14(325)T.VII **Recapped or regrooved tires.** * * * Jan. 1967 Sup. IDR 148 truck tractor.

2.15(325)T.VII **Special tires.** Special use tires * * * Jan. 1967 Sup. IDR 148 in over-the-road operation.

[Effective August 1, 1966]

TITLE VIII

IOWA LAW ENFORCEMENT ACADEMY

Pursuant to authority of chapter 112, section 11, subsection 4, Acts of the 62nd General Assembly, the following rules are adopted.

[Filed November 12, 1968]

CHAPTER 1

MINIMUM STANDARDS FOR IOWA LAW ENFORCEMENT OFFICERS

1.1(Ch. 112, 62 G.A.)T.VIII **General requirements.** * * * Jan. 1969 Sup. IDR 47 as a law enforcement officer unless such person:

1.1(1) Is a citizen of the United States and a * * * Jan. 1969 Sup. IDR 47 being employed.

1.1(2) Has reached his or her twenty-first * * * Jan. 1969 Sup. IDR 47 birthday at the time of his or her appointment.

1.1(3) Has a current active drivers license issued by the state of Iowa.

1.1(4) Is able to read and write the English language.

1.1(5) Is not a drug addict or a drunkard.

1.1(6) Is of good moral character as determined * * * Jan. 1969 Sup. IDR 47 of a felony.

1.1(7) *Reserved for future use.*

1.1(8) Has not claimed exemption from military service on account of being a conscientious objector.

1.2(Ch. 112, 62 G.A.)T.VIII **Additional requirements** * * * Jan. 1969 Sup. IDR 47 population of under 2000 people:

1.2(1) Is a high school graduate with a * * * Jan. 1969 Sup. IDR 47 public instruction.

1.2(2) If a male, is at least 5'7" in height without shoes.

1.2(3) Is of a weight proportional to height as determined by an examining physician.

1.2(4) Has an uncorrected vision of not less than 20-100 in either eye; correctable to 20-20, and normal color vision.

1.2(5) Has normal hearing in each ear as determined by an examining physician.

1.2(6) Has participated in an oral interview * * * Jan. 1969 Sup. IDR 47 appearance, background and ability to communicate.

1.2(7) Has been examined by a physician to determine if free from physical, emotional, or mental condition which might adversely affect the performance of duties.

1.2(8) Has attained a satisfactory grade in a pre-employment written examination.

1.3(Ch. 112, 62 G.A.) T.VIII **Higher standards** * * * Jan. 1969 Sup. IDR 47 additional recruitment standards.

These rules are intended to implement chapter 112, Acts of the 62nd General Assembly.

[Effective December 12, 1968]

REVENUE DEPARTMENT

STATE BOARD OF TAX REVIEW

Pursuant to authority of Section 1 of Chapter 342 of the Acts of the 62nd General Assembly the following rules are adopted.

[Filed December 9, 1969]

CHAPTER 1

CONDUCT OF APPEALS

1.1(Ch.342 62GA) Definitions. For the purposes of these rules the following definitions shall govern:

1. "Board" or "state board" shall refer to the state board of tax review created by chapter 342 of the Acts of the 62nd General Assembly.

2. "Department" shall refer to the Iowa department of revenue.

3. "Director" shall refer to the director of the Iowa department of revenue.

4. "Secretary" shall refer to the secretary of the state board of tax review.

1.2(Ch.342 62GA) Notice of appeal. Jurisdiction is conferred upon the state board by giving written notice to the department within thirty days of the rendering of the decision, order or directive from which such appeal is taken.

Notice of appeal may be given by certified mail with return receipt requested addressed to the department of revenue to the attention of the director; or, by service on the director or an assistant director as provided by the Iowa rules of civil procedure.

Notice shall be proved by affidavit of mailing signed by appellant or his duly authorized representative, with return receipt and a copy of the notice attached filed with the secretary or, filing with the secretary a copy of the notice of appeal with return of service attached.

1.3(Ch.342 62GA) Contents of notice of appeal. The written notice of appeal shall substantially state in separate numbered paragraphs the following:

1. The appellant's name and legal residence.

2. The date appellant received the director's decision, order or directive.

3. The amount of assessment, nature of tax, year or other period, date of assessment, and approximate amount of total tax liability in controversy.

4. A clear and concise assignment of each and every error.

5. A clear and concise statement of the facts upon which the affected taxpayer relies as sustaining the assignment of error.

6. The relief requested.

7. The signature of affected taxpayer or his counsel, together with address to which all subsequent correspondence, notice or papers shall be served or mailed.

1.4(Ch.342 62GA) Certification by director. Within fifteen days after notice of appeal is given the director shall certify to the board all records, documents, reports, audits, a copy of the decision, order or directive from which appeal is taken and all other information pertinent thereto.

1.5(Ch.342 62GA) Motions and special appearances. All motions or special appearances shall be in writing and shall be filed with the state board within fifteen days after the filing of the pleading attacked and shall set forth the reasons and grounds thereof. The state board shall act upon such motions or special appearances as justice may require. Motions based on matters which do not appear of record shall be supported by affidavit.

1.6(Ch.342 62GA) Responsive pleadings. Responsive pleadings shall be filed with the state board within fifteen days after the filing of pleading responded to, unless attacked by motion or special appearance as provided in rule 1.5(ch.342 62GA), and then responsive pleadings shall be filed within fifteen days after ruling on said motion or special appearance.

1.7(Ch.342 62GA) Docketing. Appeals shall be assigned consecutive file numbers. The state board shall cause to be kept a well bound, blank record book with suitable index. There shall be entered therein each action and each act done with the proper dates as follows:

1. The title of the appeal.

2. Brief statement of the type of tax, year or period, date of assessment, and the amount involved including tax, penalty, interest and costs.

3. The manner and time of service of notice of appeal.

4. The appearance of all parties.

5. Notice of hearing, together with manner and time of service.

6. The decision of the state board or other disposition of the case and the date thereof.

1.8(Ch.342 62GA) Filing of papers. After filing proof of giving notice, all motions, pleadings, briefs and other papers to be filed shall be in quadruplicate with the secretary who shall send copies to members of the state board and to all other parties of record, unless represented by counsel of record, then to such counsel.

1.9(Ch.342 62GA) Hearing an appeal. Hearing an appeal shall be de novo. The case may be submitted on an agreed statement of the facts with written briefs and arguments. Or, the state board, on its own motion or at the written request of any party, may allow the production of evidence, by oral testimony or otherwise, and the submission of the case on oral arguments, or any combination of the foregoing.

1.10(Ch.342 62GA) Amendments. The board, upon its own motion or upon motion of either party showing good cause filed prior to setting the appeal for hearing, may order a party to file a further and better statement of the nature of his claim or defense. Such a motion filed by a party shall point out defects complained of and the details desired.

The state board may set such motions for hearing or may rule thereon ex parte.

The state board may at any time during the course of the hearing grant motion of either party to amend to conform to the proof.

1.11(Ch.342 62GA) Appearances by appellant. Any appellant may appear in person, or, in the case of corporations, partnerships or other associations, by its duly authorized representative, or by an attorney at law or a C.P.A. authorized to practice in the state of Iowa.

1.12(Ch.342 62GA) Prehearing procedure. The state board, on its own motion or on the written request of any party, may order a prehearing conference to consider:

1. The desirability of amending pleadings.
2. Agreeing to the admission of facts, documents or records not really controverted, to avoid unnecessary proof.
3. Limiting the number of witnesses.
4. Settling any facts of which the state board is to be asked to take judicial notice.
5. Stating and simplifying the factual and legal issues.
6. Consolidation or separation of cases.
7. Possibility of compromise.
8. Manner of submission of case.
9. Any other matter which may aid, expedite or simplify the hearing.

The state board shall make an order reciting any action taken at the prehearing conference which will control the sub-

sequent course of the case relative to matters it includes, unless modified to prevent manifest injustice.

1.13(Ch.342 62GA) Continuances. Any hearing may be continued for good cause. Requests for continuance prior to the hearing shall be in writing, promptly filed with the state board immediately upon the cause becoming known.

1.14(Ch.342 62GA) Place of hearing. Unless otherwise designated by the state board, the hearing shall be held in the office of the State Board of Tax Review, Lucas State Office Building, Des Moines, Iowa 50319.

1.15(Ch.342 62GA) Members participating. All appeals shall be heard by a minimum of two members of the state board. Orders and decisions shall be signed by one member of the board and shall name members participating. Decisions shall affirm, modify, remand or reverse the director's decision, order or directive. A majority decision by the state board shall govern and control. Written dissenting decisions may be filed.

1.16(Ch.342 62GA) Presiding officer. The chairman of the state board or his designated member shall preside at the hearing.

1.17(Ch.342 62GA) Rulings of the chair. The presiding member shall rule upon motions, objections and other evidentiary matters arising during a hearing, or such rulings may be deferred to the state board or reserved.

1.18(Ch.342 62GA) Liberal rules of evidence. The common law and statutory rules of evidence shall be liberally construed in hearings before the state board.

1.19(Ch.342 62GA) Transcript of hearing. Hearings shall be stenographically reported and a transcript thereof shall be made if in the opinion of the state board a permanent record is deemed necessary. Either party may provide a certified court reporter at their own expense.

1.20(Ch.342 62GA) Suspension or alterations of rules. The board may in its discretion, on its own motion, or upon request by the parties, amend, modify or suspend any of its rules or may adopt other or different rules for the conduct of hearings and procedure before the board. However, no such change shall be made retroactively to the detriment of any party.

WATER POLLUTION CONTROL COMMISSION

Pursuant to authority of sections 455B.9 and 455B.13, Code of Iowa, 1966, the following rules are adopted and added to chapter 1 [appearing in July 1966 IDR Supplement, 70; July 1967 IDR Supplement, 38.]

[Filed October 14, 1969]

1.3(455B) Confined feeding operations waste water disposal.

1.3(1) Definition. Confined feeding operations for livestock and poultry in which potential pollution may exist and subject to regulations are defined as follows:

Cattle feed lot is one or more adjacent or nearby cattle enclosures on a single property where there are at least 100 cattle and where animal population is greater than one animal for each 600 square feet.

1.3(2) Conditions requiring registration. Registration of the following confined feeding operations is required when one or more of the following conditions exist:

a. Cattle.

(1) The number of cattle confined in a feed lot exceeds 1,000 head;

(2) The feed lot contributes to a watercourse draining more than 3200 acres of land above the lot and the distance to the nearest point on the affected watercourse is less than two feet per head of cattle in the feed lot;

(3) The runoff water from a feed lot or overflow from a lagoon or liquid manure storage tank flows into a tile line or other buried conduit, drainage well, pumped well, abandoned well or sinkhole.

1.3(3) Required information under conditions requiring registration.

a. Persons engaged in livestock and poultry operations described in rules 1.3(1) and 1.3(2) prior to July 1, 1969 shall upon notification register such operation with the commission. Persons intending to initiate livestock and poultry operations as described in rules 1.3(1) and 1.3(2) shall register such operation with the commission before commencing such operations and provide such information as the commission may reasonably require. Such information shall be made on a form supplied by the state department of health;

b. Operators shall submit the completed registration form to the department together with supplemental infor-

mation regarding general features of topography, drainage course and identification of ultimate primary receiving streams. Additional information which may be deemed necessary for satisfactory evaluation of potential pollution may be required by and shall be submitted to the department;

c. If the department determines that a proposed or existing confined feeding operation does not constitute a water pollution problem because of location, topography, or other reasons, provisions for water pollution control facilities will not be required;

d. If the department determines that a confined feeding operation is, in fact, polluting or may reasonably pollute waters of the state, the operator shall obtain a permit for disposal of waste water therefrom and shall provide necessary water pollution control facilities which shall be constructed in accordance with plans and specifications approved by the department. The following factors will be considered when applicable, in forming a judgment as to whether a confined feeding operation will or will not constitute a potential water pollution problem:

(1) Soil type.

(2) Distance to stream.

(3) Use of land between feed lot and stream.

(4) Slope of land or time for waste to seep into soil before entering stream.

(5) Control of waste discharge in proportion to stream flow.

(6) Distance to structures occupied by humans.

1.3(4) Requirements for facilities. Required water pollution control facilities shall be constructed and maintained to meet the minimum requirements stated in the following paragraphs; provided that when site topography, operating procedures, and other available information indicate that adequate water pollution control can be effected with less than the minimum requirements, the minimum requirements may be waived; provided further that if site topography, operating procedures, experience, and other available information indicate that more than minimum requirements will be necessary to effect adequate water pollution control, additional control provisions may be required.

a. The minimum water pollution control facilities for the uncovered con-

fined feeding operations shall be terraces or retention ponds capable of containing three inches of surface runoff from the feed lot area, waste storage areas, and all other waste contributing areas. Diversion of surface drainage prior to contact with the confined feeding area or manure or sludge storage areas shall be required. A settling basin preceding the retention ponds shall be provided where necessary to facilitate solids removal. Waste retained in detention ponds shall be disposed of as soon as practicable to insure adequate retention capacity for future needs;

b. Waste treatment or other methods of water pollution control shall be permitted where the department determines that effective results will be obtained;

c. Waste handling facilities shall be designed and reviewed in conformance with chapter 114 of the Code. Services of personnel of the local soil conservation districts may be used in the design and layout of water pollution control facilities. If waste treatment facilities consist only of pond or lagoon type structures, there shall be a minimum of two such structures for series operation.

1.3(5) Operation of facilities.

a. The water pollution control facilities shall be operated and main-

tained so as to prevent water pollution and to protect the public health and beneficial uses of the waters of the state;

b. Waste discharges from retention ponds, lagoons, or waste treatment facilities into any watercourse shall be in conformance with the appropriate water quality criteria adopted by the Iowa water pollution control commission;

c. Waste materials removed from retention ponds, waste treatment facilities, or confined feeding operations shall be disposed of or stockpiled in a manner which will not contribute to water pollution. Wastes may be used for irrigation or spread on land surface and mixed with the soil in a manner which will prevent runoff of wastes. Other methods of disposal of wastes from retention ponds, retention lagoons, waste treatment facilities or feeding operations shall be evaluated and permitted if the department determines that effective water pollution control will be accomplished.

These rules are intended to implement section 455B.9, Code of Iowa, 1966 as amended by House File 598, Acts of the Sixty-third General Assembly.

[Effective November 13, 1969]