

CHAPTER 1335
DEPARTMENT OF ADMINISTRATION
MINNESOTA STATE BUILDING CODE
FLOODPROOFING

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1335.0200 ADOPTION OF "FLOOD PROOFING REGULATIONS."

Sections 100 to 1406 of the 1972 edition of "Flood Proofing Regulations" (FPR) as promulgated by the Office of the Chief Engineers, U.S. Army, Washington, D.C. is incorporated by reference and hereby made a part of the State Building Code subject to the amendments in parts 1335.0200 to 1335.3000.

FPR sections 201.2 to 208.2 are placed in the appendix of this code.

Statutory Authority: *MS s 104.05*

1335.0300 FLOODPROOFING REGULATIONS, SECTION 200.2.

FPR section 200.2 is amended to read as follows:

Official Floodplain Zoning Map: The official plain zoning map showing the extent and boundaries of the primary and secondary flood hazard areas is hereby declared and established as part of these regulations. Hereinafter reference to term "primary flood hazard areas" in these regulations shall be synonymous with the term "floodplain areas" as used in parts 6120.5000 to 6120.6200.

Statutory Authority: *MS s 104.05*

1335.0400 FLOODPROOFING REGULATIONS, SECTION 200.3.

FPR section 200.3 is amended to read as follows:

Regulatory Flood Datum: For the purpose of these regulations, the regulatory flood datum, or as hereinafter referred to, the "RFD," is hereby declared and established for use as the reference datum for determining the elevation above mean sea level to which floodproofing protection shall be provided. Hereinafter reference to the term "regulatory flood datum" in these regulations shall be synonymous with the term "flood protection elevation" as used in parts 6120.5000 to 6120.6200.

Statutory Authority: *MS s 104.05*

1335.0500 FLOODPROOFING REGULATIONS, SECTION 201.1.

FPR section 201.1 is amended to read as follows:

Application: These regulations shall apply to the construction, alteration, and repair of any building or parts of a building or structure in the flood hazard area(s) of the municipalities. Additions, alterations, repairs, and changes of use occupancy shall comply with all provisions for new buildings and structures as otherwise required in the building code, except as specifically provided in these regulations.

Statutory Authority: *MS s 104.05*

1335.0600 FLOODPROOFING REGULATIONS, SECTION 201.2.

FPR section 201.2 is amended to read as follows:

This section shall apply unless equivalent provisions are incorporated in the city or county flood plain zoning ordinance.

Nonconforming Use: A structure or the use of a structure or premises which was lawful before the passage or amendment of the ordinance but which is not in conformity with the provisions of these regulations may be continued subject to the following conditions:

1. No such use shall be expanded, changed, enlarged, or altered in a way which increases its nonconformity.
2. No structural alteration, addition, or repair to any conforming structure over the life of the structure shall exceed 50 percent of its market value at the time of its becoming a nonconforming use, unless the structure is permanently changed to a conforming use.
3. If such use is discontinued for 12 consecutive months, any future use of the building premises shall conform to these regulations. The assessor shall notify the zoning administrator in writing of instances of nonconforming uses which have been discontinued for a period of 12 months.
4. If any nonconforming use or structure is destroyed by any means, including floods, to an extent of 50 percent or more of its market value, it shall not be reconstructed except in conformance with the provisions of these regulations; provided, the Board of Appeals may permit reconstruction if the use or structure is located outside the floodway and is adequately and safely floodproofed, elevated, or otherwise protected in conformance with these regulations.
5. Uses or adjuncts thereof which are or become nuisances shall not be entitled to continue as nonconforming uses.
6. An alteration, addition, or repair to a nonconforming structure that exceeds 50 percent of its market value must be protected as required by these regulations.

Statutory Authority: *MS s 16B.61; 104.05*

History: *15 SR 74*

1335.0700 FLOODPROOFING REGULATIONS, SECTION 203.3.

FPR section 203.3 is amended to read as follows:

Records: Copies of such tests, reports, certifications, or the results of such tests shall be kept on file in the office of the building official for a period of not less than two years after the approval and acceptance of the completed structure for beneficial occupancy.

Statutory Authority: *MS s 104.05*

1335.0800 FLOODPROOFING REGULATIONS, SECTION 204.6.

FPR section 204.6 is amended to read as follows:

Board of Appeals: See part 1305.0500, Uniform Building Code section 204.

Statutory Authority: *MS s 104.05*

1335.0900 FLOODPROOFING REGULATIONS, SECTION 204.7.

FPR section 204.7 is amended to read as follows:

Validity: It shall be unlawful for any person, firm, or corporation or agency (state or local) to erect, construct, enlarge, alter, repair, move, improve, remove, convert, or demolish any building or structure in the flood hazard area(s), or cause the same to be done, contrary to or in violation of any of the provisions of these regulations and/or the building code.

Statutory Authority: *MS s 104.05*

1335.1000 FLOODPROOFING REGULATIONS, SECTION 205.1.

FPR section 205.1 is amended to read as follows:

Statement of Intention to Improve: The owner or any registered architect or licensed professional engineer authorized to represent the owner shall, before preparing final plans for any improvement in the flood hazard area(s), file with the building official a statement of intention to improve, including a brief description of the type of improvement being considered and giving its precise location, on a form provided by the building official. The building official shall note on two copies the elevation of the RFD at the location of the proposed improvement. One copy of the statement of intention to improve must be retained by the building official until a permit copy for improvement on the site is approved or one year has elapsed; a second copy must be returned to the owner for use in final siting and design of the improvement. Assignments of the RFD elevations at all locations must be consistent with the determination of the regulatory flood protection elevation as defined in the community's flood plain zoning controls, if any. This information must be open to public examination at all reasonable times.

Statutory Authority: *MS s 16B.61; 104.05*

History: *15 SR 74*

1335.1100 FLOODPROOFING REGULATIONS, SECTION 205.2.

FPR section 205.2 is amended to read as follows:

Permits Required: No person, firm, or corporation shall erect, construct, alter, repair, move, remove, convert, or demolish any building or structure or any part thereof, or make any other improvement within the structure or any part thereof, or make any other improvement within the flood hazard area(s), or cause same to be done, without first obtaining a separate flood plain building permit for any such improvement from the building official. Ordinary minor repairs may be made with the approval of the building official without a permit, provided that such repairs shall not violate any provisions of these regulations or of the building code.

Statutory Authority: *MS s 16B.61; 104.05*

History: *15 SR 74*

1335.1200 FLOODPROOFING REGULATIONS, SECTION 205.3.

Subpart 1. **No. 2.** FPR section 205.3, No. 2 is amended to read as follows:

Two sets of complete plans and specifications, in addition to plans and specifications required by the building code, except that plans and specifications for any and all proposed improvement in the primary flood hazard area(s) shall be prepared by an engineer or architect licensed by the state to practice as such. All drawings and specifications shall bear the true name of the author thereof, followed by such title as the author may be lawfully authorized to use. All plans and sections shall be noted with the proposed floodproofing class of each space below the RFD including detail drawings of walls and wall openings.

Exception: Plans for Group M Division 1 Occupancies need not be prepared by a licensed architect or engineer.

Subp. 2. **No. 3.** FPR section 205.3, No. 3 is amended to read as follows:

Two copies of the owner's contingency plan, which shall describe in detail all procedures for temporary placement and removal or contingent protection proposed items in spaces affected by these regulations including:

A. plans and schedules for items to be removed and locations of places above the RFD to which they will be removed if these contents violate restrictions associated with the floodproofing class of the space in which they are placed temporarily, including specific organizational responsibilities; and

B. procedures, materials, and equipment for protecting items required to have protection by their floodproofing class, but for which this protection is proposed to be provided contingently, including specific organizational responsibilities for accomplishing this protection.

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Waivers of restrictions implicitly requested by submission of the owner's contingency plan may be granted by the building official as provided by 1101.2.

Statutory Authority: *MS s 104.05*

History: *17 SR 1279*

1335.1300 FLOODPROOFING REGULATIONS, SECTION 209.1.

FPR section 209.1 is amended to read as follows:

New Building and Structures: Every building or structure hereafter erected, that is located in the primary flood hazard area(s) where the ground surface is two feet or more below the RFD, or where flood water velocities may exceed five feet per second, shall be provided with an enclosed refuge space above the RFD, of sufficient area to provide for the occupancy load with a minimum of 12 square feet per person. It shall be provided with one or more exits through the exterior walls above the RFD to an exterior platform and stairway not less than three feet wide.

Statutory Authority: *MS s 104.05*

1335.1400 FLOODPROOFING REGULATIONS, SECTION 209.3.

FPR section 209.3 is amended to read as follows:

Use of Space Below the Regulatory Flood Datum: No floor level or portion of the building or structure that is below the RFD regardless of structure or space classification shall be used as habitable space, or for storage of any property, materials, or equipment that might constitute a safety hazard when contacted by flood waters.

Statutory Authority: *MS s 104.05*

1335.1500 FLOODPROOFING REGULATIONS, SECTION 210.7.

FPR section 210.7 is amended to read as follows:

Placard Types: Placards shall be white rigid plastic or other non-water-susceptible materials eight inches long and 12 inches wide, and shall have printed thereon in black letters the information shown in figure 2.

Statutory Authority: *MS s 104.05*

1335.1600 FLOODPROOFING REGULATIONS, SECTION 300.0.

FPR section 300.0 is amended by adding a subsection to read as follows:

FPR Section 300.2. Interpretation: For the purpose of these regulations, where definition of terms as set forth in this chapter conflict in meaning with those as set forth in part 6120.5000, the latter shall take precedence.

Statutory Authority: *MS s 104.05*

1335.1700 FLOODPROOFING REGULATIONS, SECTION 301.2.9.

FPR section 301.2.9 is amended to read as follows:

Habitable space (room) is space in a structure for living, sleeping, eating, or cooking. Bathrooms, toilet compartments, closets, halls, storage rooms, laundry or utility space, and similar areas, are not considered habitable space.

Statutory Authority: *MS s 104.05*

1335.1800 FLOODPROOFING REGULATIONS, SECTION 301.4.1.

FPR section 301.4.1 is amended to read as follows:

Building Code: The State Building Code setting forth standards for the construction, addition, and modification and repair of buildings and other structures for the purpose of protecting health, safety, and general welfare of the public.

Statutory Authority: *MS s 104.05*

1335.1900 FLOODPROOFING REGULATIONS, SECTION 402.1.

FPR section 402.1 (table 2) is amended to read as follows:

General: Table 2 indicates the various degrees of protection required to permit use of spaces for each floodproofing; the chart in itself shall not be construed as being exhaustive

with respect to all requirements imposed by these regulations. In any disputes arising over the interpretation of this chart, the written provisions of these regulations shall be considered as definitive.

FLOOD-PROOFING CLASSIFICATION OF SPACES
MINIMUM REQUIREMENTS

Flood-Proofing Classes	Water-Proofing	Structural Loads	Closure of Openings	Internal Flooding & Draining	Flooring	Walls and Ceilings	Contacts	Electrical	Mechanical
W1 Completely Dry	Type A	Class 1	Type 1		Class 1	Class 1	Class 1		
W2 Essentially Dry	Type B	Class 1	Type 2	See Chapter 8	Class 2	Class 2	Class 2		
W3 Flooded with Potable Water	Type A	Class 2	Type 3		Class 3	Class 3	Class 3	See Chapter 12	See Chapter 13
W4 Flooded with Flood Water	Type C	Class 3	Type 4		Class 4	Class 4	Class 4		
W5 Non-Flood-Proofing	-	-	Type 5		Class 5	Class 5	Class 5		

Statutory Authority: *MS s 104.05*

1335.1950 FLOODPROOFING REGULATIONS, SECTION 612.1.

FPR section 612.1 is amended to read as follows:

Methods: A building must be considered completely floodproofed if the lowest elevation of all space within the building perimeter is above the RFD as achieved by:

- (1) building on natural terrain beyond the RFD limit line on natural undisturbed ground;
- (2) building on fill; or
- (3) building on stilts.

These methods may be used alone or in combination to achieve the required degree of floodproofing. Data and design procedures must be based on organized and acceptable disciplines involved and the following additional requirements.

Statutory Authority: *MS s 16B.61*

History: *15 SR 74*

1335.2000 FLOODPROOFING REGULATIONS, SECTION 612.2.1.

FPR section 612.2.1 is amended to read as follows:

Natural Terrain: In addition to the requirements of the building code, the building shall be located not less than 15 feet back from the line of incidence of the RFD on the ground, foundation design shall take into consideration the effects of soil saturation on the performance of the foundations, the effects of flood waters on slope stability shall be investigated, normal access to the building shall be by direct connections with areas above the RFD and all utility service lines shall be designated and constructed as required to protect the building and/or its components from damage or failure during a flooding event to the RFD.

Statutory Authority: *MS s 104.05*

1335.2100 FLOODPROOFING REGULATIONS, SECTION 612.2.2.

FPR section 612.2.2 is amended to read as follows:

Building on Fill: The building and all parts thereof may be constructed above the RFD on an earth fill. Prior to placement of any fill or embankment materials, the area upon which fill is to be placed, including a five-foot strip measured horizontally beyond and contiguous to the toe line of the fill, shall be cleared of standing trees and snags, stumps, brush, down timber, logs and other growth, and all objects including structures on or above the ground surface or partially burned. The area shall be stripped of topsoil and all other material which is considered unsuitable by the building official as foundation material. All combustible and noncombustible materials and debris from the clearing, grubbing, and stripping operations shall be removed from the proposed fill area and disposed of at locations above the RFD and/or in the manner approved by the building official. Fill material shall be of a selected type, preferably granular and free-draining placed in compacted layers. Fill selection and placement shall recognize the effects of saturation from flood waters on slope stability, uniform and differential settlement, and scour potential.

The minimum elevation of the top slope for the fill section shall be no more than one foot below the RFD. Minimum distance from any point of the building perimeter to the top of the fill slope shall be either 15 feet or twice the depth of fill at that point, whichever is the greater distance. This requirement does not apply to roadways, driveways, playgrounds, and other related features which are not integral and functional parts of the building proper. Fill slopes for granular materials shall be not steeper than one vertical on 1-1/2 horizontal, unless substantiating data justifying steeper slopes are submitted to the building official and approved. For slopes exposed to flood velocities of less than five feet per second, grass or vine cover, weeds, bushes, and similar vegetation undergrowth will be considered to provide adequate scour protection.

Statutory Authority: *MS s 104.05*

1335.2150 FLOODPROOFING REGULATIONS, SECTION 612.3.

FPR section 612.3 is amended to read as follows:

Protection by Dikes, Levees, and Floodwalls: Dikes, levees, and floodwalls must not be considered to provide FP1 or FP2 floodproofing or flood protection unless

(1) the dike, levee, or floodwall is built in accordance with recognized and accepted engineering practice and methods, and

(2) the design data has been submitted to the Department of Natural Resources and the Federal Emergency Management Agency for revision of the community's flood insurance study (flood insurance rate map) and official zoning map.

Statutory Authority: *MS s 16B.61*

History: *15 SR 74*

1335.2200 FLOODPROOFING REGULATIONS, SECTION 802.1.

FPR section 802.1 is amended to read as follows:

Applicability: Spaces to be intentionally flooded with flood water (W4) shall be provided with the necessary equipment, devices, piping, controls, etc. necessary for automatic flooding during the flood event and drainage system(s) shall utilize approved piping materials and have sufficient capacity for raising or lowering the internal water level at a rate comparable to the anticipated rate of rise and fall of a flood that would reach the RFD. These pipe systems shall be directly connected to the external flood waters to maintain a balanced internal and external water pressure condition. Provisions shall be made for filling the lower portions of the structure first and for interconnections through or around all floors and partitions to prevent unbalanced filling of chambers or parts within the structures. All spaces below the RFD shall be provided with air vents extending to at least three feet above the elevation of the RFD to prevent the trapping of air by the rising water surface. All openings to the filling and drainage systems shall be protected by screens or grilles to prevent the entry or nesting of rodents or birds in the systems.

Statutory Authority: *MS s 104.05*

1335.2300 FLOODPROOFING REGULATIONS, SECTION 1101.3.2.

FPR section 1101.3.2 is amended by changing the "contents class" of food products from X to 1.

Statutory Authority: *MS s 104.05*

1335.2400 FLOODPROOFING REGULATIONS, SECTION 1301.2.1.

FPR section 1301.2.1 is amended to read as follows:

Heating systems utilizing gas- or oil-fired furnaces shall have a float-operated automatic control valve installed in the fuel supply line which shall be set to operate when flood waters reach an elevation equal to the floor level of the space where furnace equipment is installed. A manually operated gate valve that can be operated from a location above the RFD shall be provided in the fuel supply line to serve as a supplementary safety provision for fuel cutoff. The heating equipment and fuel storage tanks shall be mounted on and securely anchored to a foundation pad or pads of sufficient mass to overcome buoyancy and prevent movement that could damage the fuel supply line. As an alternate means of protection, elevation of heating equipment and fuel storage tanks above the RFD on platforms or by suspension from overhead structural systems will be permitted. All unfired pressure vessels will be accorded similar treatment. Fuel lines shall be attached to furnaces by means of flexible or swing type couplings. All heating equipment and fuel storage tanks shall be vented to an elevation of at least three feet above the RFD. Air supply for combustion shall be furnished if required for systems installed in W1 or W2 spaces and piping or duct work for each purpose shall be terminated at least three feet above the RFD.

Statutory Authority: *MS s 104.05*

1335.2500 FLOODPROOFING REGULATIONS, SECTION 1302.2.2.

FPR section 1302.2.2 is amended to read as follows:

Where the state of dryness of a space is dependent on a sump pump system, or where the stability of a structure during a flood event depends on the relief of uplift pressures on building components, all interior storm water drainage or seepage, appliance drainage, and under-slab drain tile systems shall be directly connected to a sump (pump) and discharged at an elevation at least three feet above the RFD.

Statutory Authority: *MS s 104.05*

1335.2600 FLOODPROOFING REGULATIONS, SECTION 1302.2.3.1.

FPR section 1302.2.3.1 is amended to read as follows:

All vents shall extend to an elevation of at least three feet above the RFD.

Statutory Authority: *MS s 104.05*

1335.2700 FLOODPROOFING REGULATIONS, SECTION 1302.3.

FPR section 1302.3 is amended to read as follows:

Sewage Disposal/Treatment: Individual sewage disposal and/or treatment facilities will be permitted in a flood hazard area but only at locations where connection with a public sewer system is not permissible or feasible. Such facilities shall conform to applicable standards, criteria, and rules of the Minnesota Department of Health and Pollution Control Agency in terms of size, construction, use, and maintenance and with standards and criteria of the Minnesota Department of Natural Resources regarding setbacks from normal high water mark of a watercourse in accordance with the public water classification.

Statutory Authority: *MS s 104.05*

1335.2800 FLOODPROOFING REGULATIONS, SECTION 1302.3.1.

FPR section 1302.3.1 regarding cesspools/sewage disposals has been amended by deleting this section in its entirety.

Statutory Authority: *MS s 104.05*

1335.2900 FLOODPROOFING REGULATIONS, SECTION 1302.3.2.

FPR section 1302.3.2 regarding seepage pits has been amended by deleting this section in its entirety.

Statutory Authority: *MS s 104.05*

1335.3000 FLOODPROOFING REGULATIONS, SECTION 1302.4.1.

FPR section 1302.4.1 is amended to read as follows:

Water supply wells, tanks, filters, softeners, heaters, and all appliances located below the RFD shall be protected against contamination by covers, walls, copings, or castings. All vents shall be extended to a minimum elevation of three feet above the RFD.

Statutory Authority: *MS s 104.05*

1335.3100 FLOODPROOFING REGULATIONS, SECTION 1405.3.

FPR section 1405.3 is amended to read as follows:

Protection by Dikes, Levees, and Floodwalls: Dikes, levees, and floodwalls must not be considered to provide floodproofing or flood protection unless

(1) the dike, levee, or floodwall is built in accordance with recognized and accepted engineering practice and methods, and

(2) the design data has been submitted to the Department of Natural Resources and the Federal Emergency Management Agency for revision of the community's flood insurance study (flood insurance rate map) and official zoning map.

Statutory Authority: *MS s 16B.61*

History: *15 SR 74*