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# IRC CODE UPDATES

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**TO:** RESIDENTIAL BUILDING CONTRACTORS  
**FROM:** GARY STABER, BUILDING OFFICIAL  
**SUBJECT:** NEW 2000 INTERNATIONAL RESIDENTIAL CODE (IRC)  
**DATE:** 6/1/2003

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## **INTERNATIONAL RESIDENTIAL CODE (IRC) APPLICABILITY:**

Detached one and two family dwellings and multiple single family dwellings (Townhouses – see definition) not more than three stories high with separate means of egress and their accessory structures shall comply with Minnesota Rules Chapter 1309 including IRC.

## **TOWNHOUSE:**

Definition: A single family dwelling unit constructed in a group of 3 or more attached units in which each unit extends from foundation to roof and with open space on at least 2 sides. (IRC2002)

## **WORK EXEMPT FROM BUILDING PERMITS:**

Decks and platforms not more than 30 inches above adjacent grade and not attached to a structure with frost footings, and which is not part of an accessible route. (MR1309.0105, IRC105.2)

## **FOUNDATION DRAINAGE:**

Grade away from foundation walls shall fall a minimum of 6 inches within first 10 feet.

Exception: Where lot lines, walls, slopes or other physical barriers prohibit 6” of fall within 10 feet, drains or swales shall be provided to ensure drainage away from the structure.  
(IRC401.3)

## **FOOTINGS:**

Footings projections from foundation wall shall be at least 2 inches and shall not exceed the thickness of the footings. Spread footing shall be at least 6 inches in thickness (IRC403.1.1)

## **FOUNDATION WALLS:**

Concrete foundation walls shall be constructed with Grade 60 reinforcement as set forth in

- Table R404.1.1 (2) 8" nominal wall thickness
- Table R404.1.1 (3) 12" nominal wall thickness
- Table R404.1.1 (4) 10" nominal wall thickness
- Table R404.1.1 (1) Deleted by State

If foundation walls are parallel to floor framing, solid blocking or diagonal bracing must be installed at the anchor bolt locations in the first two joist or truss spaces. The Minnesota amendment MR 1303.1900 titled Conventional Foundation Construction may be used for design and construction of foundations with 12" thick hollow masonry or 8" thick cast in place concrete. The City must approve other engineered designs.

## **MASONRY WALLS:**

Where walls of masonry of hollow units are decreased in thickness, a course of solid masonry shall be constructed between the wall below and thinner wall above. (IRC606.2.3) Minimum thickness of masonry bearing walls more than one story high shall be 8 inches. Minimum thickness of masonry walls of 1-story dwelling and garages shall be 6 inches. 4" block is not allowed. (IRC606.2.1)

## **FOUNDATION ANCHORAGE:**

Sill plate anchored to foundation with ½" minimum anchor bolts and embedded into masonry or concrete a minimum 7" spaced a maximum of 6 feet on center and shall also be located within 12 inches from ends of sill plate. Interior bearing wall sill plates shall be positively anchored with approved fasteners. Foundation anchor bolts shall align with required reinforcing. All anchor bolts installed in masonry shall be grouted in place with at least 1" of grout between the bolt and the masonry. (MR1309.0403, IRC403.1.6)

## **FOUNDATION WATERPROOFING:**

Exterior foundation walls that retain earth and enclose habitable or useable spaces located below grade shall be waterproofed with:

1. 2-ply hot mapped felts
2. 55# roll roofing
3. 6-mil polyvinyl chloride
4. 6-mil polyethylene

5. 40-mil polymer-modified asphalt  
Joints in the membrane shall be lapped and sealed with an adhesive compatible with the waterproofing membrane. (IRC406.2)

**VAPOR RETARDER:**

An approved vapor retarder with joints lapped 6 inches shall be placed between concrete floor slab and subgrade. Not required in unheated areas such as garages and sheds. (IRC506.2.3)

**RIM JOINT INSULATION:**

Foam plastic shall be permitted to be spray applied to a sill plate and rim if all the following conditions exist.

1. Maximum thickness of foam shall not exceed 3-1/4 inches.
2. Density of foam shall be between 1.5 and 2.0 pounds per cubic foot.
3. Foam shall have a flame spread of 25 or less and accompanying smoke development index of 450 or less when tested in accordance with ASTM E84. (MR1309.0318, IRC318.2.7)

**WEATHER-RESISIVE SHEATING PAPER:**

A minimum of one layer of No 15 asphalt felt complying with ASTM D226 for type 1 felt or other approved weather resistive material shall be applied over sheathing of all exterior walls including walls of heated and unheated spaces, and gable ends. Not required in detached accessory building and where specifically prohibited by sheathing and/or siding manufacturer. (MR1309.0703, IRC703.2)

**STUCCO UNDERLAYMENT:**

The weather resistive barrier shall include a weather-resistive vapor barrier permeable barrier with a performance at least equivalent to two layers of grade D paper. (MR1309.0703, IRC703.6)

**STUCCO ATTACHMENT:**

All lath and lath attachments shall be of corrosion-resistant materials. Expanded metal or woven wire lath shall be attached with 1-1/2 inch long, 11 gage nails having a 7/16 inch head or staples 7/8 inch long, 16 gage, spaced at no more than 6 inches. (MR1309.0703, IRC703.6.1)

**STUCCO WEEP SCREEDS:**

A minimum .019 inches (No. 26 galvanized sheet gage) corrosive-resistant weep screed with a minimum vertical attachment flange of 3-1/2 inches shall be provided at or below the foundation sill plate. The weep screed shall be placed a minimum of 4 inches above the earth or 2 inches above paved areas and shall be a type that will allow trapped water to drain to the exterior. The weather-resistive barrier shall lap the attachment flange.(MR1309.0703, IRC 703.6.4)

### **LATH & GYPSUM BOARD INSPECTIONS:**

Lath and gypsum board inspections shall be made after lathing and gypsum board interior and exterior, are in place, but before any plastering is applied or before gypsum board joints and fasteners are taped and finished.

Exception: Gypsum board that is not part of a fire- resistive assembly. Protection of joints and penetrations in fire rated assemblies shall be inspected and not concealed from view until inspection approved. (MR1300.0210 Sub P. 6(F))

### **ANCHORED VENEER:**

Veneer ties, if strand wire, shall not be less in thickness than No. 9 U.S. gage wire and shall have a hood embedded in the mortar joint. Veneer ties, if sheet metal, shall not be less in thickness than No. 22 U.S. gage, 7/8 inch corrugated. each tie shall be spaced not more than 24 inches on center horizontally and shall support not more than 3-1/4 square feet of wall area. (IRC 703.7.4.1)

The veneer shall be separated from the sheathed weather resistive membrane by air space of a minimum of 1 inch but not more than 4.5 inches. (IRC 703.7.4.2)

### **VENEER FLASHING AND WEEPHOLES:**

Weepholes shall be provided in the outside length of masonry walls at a maximum spacing of 33 inches on center. Weepholes shall not be less than 3/16 inch in diameter and shall be located immediately above the bottom flashing. (IRC 703.7.6)

Flashing shall be located beneath the first course of masonry above finished ground level and at all other parts of supports, including structural floors, shelf angles and lintels. (IRC 703.7.5)

### **EXTERIOR FLASHING:**

Flashing shall be provided at the top of all exterior windows and door openings, under and at the ends of all sills; at wall and roof intersections (i.e. step flashing)

above all wood trim, above ledgers attached to a wall or floor assembly and other locations to properly make leak proof. (MR1309.0703, IRC703.8)

### **ROOF UNDERLAYMENT ICE PROTECTION:**

An ice barrier that consists of a self-adhering polymer modified bituminous sheet shall extend from the eaves edge to a point at least 24 inches inside the exterior wall line of all buildings including unheated attached garages and detached accessory structures.(IRC905.2.7.1)

### **LIGHT VENTILATION:**

All habitable rooms shall be provided with aggregate glazing (light) area of not less than 8% of the floor area. Natural ventilation shall be through openings to the exterior with minimum openable area equal to 4% of the floor area. The glazed area need not be openable unless required for egress and an approved mechanical ventilation system is installed. The required glazing area is not required unless required for egress and artificial light is provided capable of producing light intensity of 6-foot candles. (IRC303.1)

### **STAIRWAY LIGHTING:**

All interior and exterior stairways shall be provided with a means to illuminate the stairs, including the landings and treads. Interior stairs shall be provided with light source located in the immediate vicinity of each landing of the stairway. Exterior stairways shall be provided with artificial light source located in the immediate vicinity of the top landing of the stairway. As an alternate, the light source may be provided directly over each stairway section. (IRC303.4)

### **CEILING HEIGHT:**

Habitable rooms, hallways, corridors, bathrooms, toilet rooms and basements shall have a ceiling height of not less than 7 feet. The required height shall be measured from the finished floor to the lowest projection from the ceiling. Areas or rooms with ceiling heights less than 7 feet are considered crawl space. (MR1309.0305, IRC305.1)

### **STAIRWAYS:**

The maximum riser height shall be 8 inches and the minimum tread depth shall be 9 inches. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch. The largest tread run within any flight of stairs

shall not exceed the smallest by more than 3/8 inch. Open risers are permitted, provided that the opening between treads does not permit the passage of a 4 inch diameter sphere. (MR1309.03.4, IRC314.2)

**UNDER STAIRS PROTECTION:**

Enclosed accessible space under stairs shall have walls, under stair surface and any soffits protected on the enclosed sided with ½ inch gypsum board. (MR1309.03.4, IRC314.8)

**LANDINGS:**

There shall be a floor or landing on each side of each exterior door. The floor or landing at a door shall not be more than 1.5 inches lower than the top of the threshold. Exceptions would be a landing at an exterior doorway, shall not be more than 8 inches below the top of threshold, provided that the door, other than an exterior storm or screen door, does not swing over the landing. (IRC1309.03.2)

**DECK LEDGERS:**

Ledgers shall be positively anchored to the primary structure and designed for both vertical and lateral loads. Floor system manufacturers to provide connection detail. (IRC502.2.1)

**GARAGE SEPARATION:**

The garage shall be separated from the residence and its attic area by not less than ½ inch gypsum board applied on garage side. Where separation is a floor ceiling assembly, the structure supporting the separation shall also be protected by not less than ½ inch gypsum board. (IRC309.2)

**GARAGE/HOUSE OPENING:**

Openings between a garage and residence shall be equipped with solid wood doors not less than 1-3/8 inches in thickness, solid or honeycomb core steel doors not less than 1-3/8 inches in thickness or 20 minute fire-rated doors. No requirement for a self-closing device. (IRC309.1)