

1322.1102 IRC SECTION N1102, BUILDING THERMAL ENVELOPE.

Subpart 1. **IRC Section N1102.1.** IRC Section N1102.1 is amended to read as follows:

N1102.1 Insulation and fenestration criteria. The building thermal envelope shall meet the requirements of Table N1102.1 and/or Table N1102.1.2 based on the climate zone specified in Table N1101.2.

Exceptions:

1. When using the R-value computation method in Section N1102.1.1 individual component materials can be substituted for those that meet Section N1102.1.2, U-factor alternative.
2. When the provisions of Section N1102.1.3, Total UA alternative, are met.
3. When the provisions of Section N1102.1.4, REScheck software alternative, are met.
4. When the provisions of Section N1102.1.5, Engineered systems alternative, are met.

Subp. 2. **IRC Section N1102.1.1.** IRC Section N1102.1.1 is amended to read as follows:

N1102.1.1 R-value computation. Insulation material used in layers, such as framing cavity insulation and insulating sheathing, shall be summed to compute the component R-value. The manufacturer's settled R-value shall be used for blown insulation. Computed R-values shall not include an R-value for other building materials or air films. The thermal performance of a foundation insulation system that is not continuous or a concrete masonry block wall assembly with integral insulation must be determined by paragraph 1 or 2, and must exclude air film coefficients and the R-value of the surrounding soil.

1. The thermal performance must be calculated in accordance with ASHRAE Handbook of Fundamentals isotherm planes calculation method certified by a professional engineer registered in Minnesota.
2. The thermal performance must be measured in accordance with the ASTM C236 test procedure for thermal transmittance measurement performed by an approved laboratory as defined in Minnesota Rules, chapter 7640.

Subp. 3. **IRC Section N1102.1.2.** IRC Section N1102.1.2 is amended to read as follows:

N1102.1.2 U-factor alternative. An assembly with a U-factor equal to or less than that specified in Table N1102.1.2 shall be permitted as an alternative to the R-value in Table N1102.1.

Subp. 4. **IRC Section N1102.1.3.** IRC Section N1102.1.3 is amended to read as follows:

N1102.1.3 Total UA alternative. If the total building thermal envelope UA (sum of U-factor times assembly area) is less than or equal to the total UA resulting from using the U-factors in Table N1102.1.2, the building shall be considered in compliance with Table N1102.1. The UA calculation shall be done using a method consistent with the ASHRAE Handbook of Fundamentals and shall include the thermal bridging effects of framing materials.

Subp. 5. **IRC Table N1102.1.** IRC Table N1102.1 is deleted in its entirety and replaced with the following:

Table N1102.1

Insulation and Fenestration Requirements by Component^(a)

Climate Zone	Fenestration ^(b) U-Factor	Skylight U-Factor	Ceiling R-Value	Wood Frame Wall R-Value		
Southern	0.35	0.60	38	19 or 13 + 5 ^(e)		
Northern	0.35	0.60	44	19		
Climate Zone	Mass Wall R-Value ^(f)	Floor R-Value	Foundation Wall and Rim Joist R-Value	Slab ^(c) R-Value & Depth	Crawl Space Wall R-Value	
Southern	15	30 ^(d)	10	10, 3.5 ft	10	
Northern	15	30 ^(d)	10	10, 5 ft	10	

^(a) R-values are minimums. U-factors and SHGC are maximums. R-19 shall be permitted to be compressed into a 2x6 cavity.

^(b) The fenestration U-factor column excludes skylights.

^(c) R-5 shall be added to the required slab edge R-values for heated slabs.

^(d) Or insulation sufficient to fill the framing cavity, R-19 minimum.

^(e) "13 + 5" means R-13 cavity insulation plus R-5 insulated sheathing. If structural sheathing covers 25 percent or less of the exterior, R-5 sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25 percent of exterior, structural sheathing shall be supplemented with insulated sheathing of at least R-2.

^(f) When using log type construction for thermal mass walls the following shall apply:

- (1) A minimum of a 7-inch-diameter log shall be used; and

(2) The u-value of fenestration products shall be 0.31 overall on average or better.

Subp. 6. **IRC Table N1102.1.2.** IRC Table N1102.1.2 is deleted in its entirety and replaced with the following:

Climate Zone	Fenestration U-Factor	Skylight U-Factor	Ceiling U-Factor	Frame Wall U-Factor
South	0.35	0.60	0.026	0.060
North	0.35	0.60	0.023	0.060
Climate Zone	Mass Wall U-Factor	Floor U-Factor	Basement Wall U-Factor	Crawl Space Wall U-Factor
South	0.077	0.033	0.10	0.10
North	0.077	0.033	0.10	0.10

^(a) Nonfenestration U-factors shall be obtained from measurement, calculation, or an approved source.

Subp. 7. **IRC Section N1102.1.4.** IRC Section N1102.1 is amended by adding a section to read as follows:

N1102.1.4 REScheck alternative. A building shall be deemed to meet the requirements of Section N1102 if the thermal envelope passes, using the U.S. Department of Energy's (DOE) REScheck software version with equivalencies as determined by the state of Minnesota. Alternatives are not permitted to be below the minimum R-values or above the maximum U-values allowed by Table N1102.1 or N1102.1.2.

Subp. 8. **IRC Section N1102.1.5.** IRC Section N1102.1 is amended by adding a section to read as follows:

N1102.1.5 Thermal envelope system alternative (engineered system alternative). A building shall be deemed to meet the requirements of Section N1102 if there is a design drawing that has been certified by an architect or professional engineer licensed in Minnesota, pursuant to Minnesota Statutes, sections 326.02 to 326.15, certifying that it is equal to or better than the total energy efficiency performance of a building, including all of its systems, and that it is built meeting the requirements of this code.

Subp. 9. **IRC Section N1102.2, Table N1102.2.4.** IRC Section N1102.2 is amended to read as follows:

N1102.2.1 Ceilings with attic spaces. IRC Section N1102.2.1 is deleted in its entirety.

N1102.2.2 Ceilings without attic spaces. Where Section N1102.1 requires insulation levels above R-30 and the design of the roof/ceiling assembly does not allow sufficient space for the required insulation, the minimum required insulation for the roof/ceiling assemblies shall be R-30. This reduction of insulation from the requirements of Section N1102.1 shall be limited to 500 ft² (46 m²) of ceiling area.

N1102.2.3 Mass walls. Mass walls, for the purposes of this chapter, shall be considered walls of concrete block, concrete, insulated concrete form (ICF), masonry cavity, brick (other than brick veneer), earth (adobe, compressed earth block, rammed earth), and solid timber or logs. The provisions of Section N1102.1 for mass walls shall be applicable.

N1102.2.4 Steel-frame ceilings, walls, and floors. Steel-frame ceilings, walls, and floors shall meet the insulation requirements of Table N1102.2.4 or shall meet the U-factor requirements in Table N1102.1.2. The calculation of the U-factor for a steel-frame envelope assembly shall use a series-parallel path calculation method.

Table N1102.2.4	
Steel-Frame Ceiling, Wall, and Floor Insulation (R-Value)	
Wood Frame R-Value Requirement	Cold-Formed Steel Equivalent R-Value ^a
R-38	Steel Truss Ceilings ^a R-49 or R-38+3
R-44	R-38+5
R-30	Steel Joist Ceilings ^b R-38 in 2x4 or 2x6 or 2x8
R-38	R-49 in any framing R-49 in 2x4 or 2x6 or 2x8 or 2x10
R-19	Steel Framed Wall R-13+9 or R-19+8 or R-25+7
R-30	Steel Joist Floor R-21+R-6 in 2x6 R-21+R-12 in 2x8 or 2x10

Notes:

- a. Cavity insulation R-value is listed first, followed by a "+" and the continuous insulation R-value, if applicable.
- b. Insulation exceeding the height of the framing shall cover the framing.

N1102.2.5 Floors. Floor insulation shall be installed to maintain permanent contact with the underside of the subfloor decking.

N1102.2.6 Basement walls. IRC Section N1102.2.6 is deleted in its entirety and replaced with the following:

N1102.2.6 Foundation wall insulation prescriptive option.

N1102.2.6.1 Foundation insulation. Foundation insulation of basement and crawl space walls and the perimeter of slab-on-grade floors must comply with this section. Insulation materials shall be installed according to manufacturer's installation specifications and any additional requirements of Sections N1102.2.6.1 to N1102.2.6.11. Adding additional insulation to increase R-values or adding an additional vapor retarder to foundation wall assemblies, other than those required in this section, is prohibited.

Exceptions:

1. Foundation walls enclosing unconditioned spaces shall meet this requirement unless the floor overhead is insulated in accordance with Section N1102.1.
2. Permanent wood foundations shall meet the requirements of Section R401.1.
3. Frost-protected shallow foundations shall meet the requirements of Section R403.3.
4. Insulating concrete form materials shall meet the requirements of Section R611.

N1102.2.6.2 Basement foundation and crawl space walls. Basement foundation and crawl space walls shall be insulated from the top of the foundation wall down to the top of the footing or from the top edge of the interior wall to the top of the slab if insulation is on the interior.

N1102.2.6.3 Slab-on-grade and basement walkout foundation walls. Slab-on-grade and basement walkout foundation wall insulation shall extend to the design frost line or top of footing, whichever is less. The top edge of the insulation installed between the exterior wall and the edge of the interior slab shall be permitted to be cut at a 45-degree angle away from the exterior wall. Slab-edge insulation is not required in jurisdictions designated by the code official as having termite infestation.

N1102.2.6.4 Foundation wall and rim joist area thermal insulation requirements. The foundation wall system and rim joist area shall have an insulating layer with minimum thermal properties as required in this section.

The insulation layer must be a minimum R-10 in accordance with Table N1102.1.

Exception: In the Southern Zone, the foundation and rim joist area insulation may be reduced to a minimum of an R-5 if:

1. The insulation is located on the exterior or is integral to the foundation wall; and
2. An additional R-5 insulation is added to the minimum attic R-value level; and
3. The heating system meets the minimum efficiency ratings in Table N1102.2.6.4; and
4. A minimum of a six-inch energy heel is used for the roof framing and/or truss system.

Table N1102.2.6.4		
HVAC System Minimum Efficiency Requirement to Qualify for R-5 Exterior Insulation in the Southern Zone		
Heating System Type	Minimum Efficiency Rating	
	AFUE	HSPF
Furnace, Gas or Oil Fired	90%	N/A
Boiler, Gas or Oil Fired	85%	N/A
Heat Pump, Split Systems	N/A	8.0
Heat Pump, Single Package or Equipment (including gas/electric package units)	N/A	7.7

N1102.2.6.5 Integral foundation insulation requirements. An insulation assembly installed integral to the foundation walls shall be manufactured for its intended use and installed according to the manufacturer's specifications.

N1102.2.6.6 Exterior foundation insulation requirements. An insulation assembly installed on the exterior of the foundation walls and the perimeter of slabs-on-grade:

1. shall be of water-resistant materials manufactured for its intended use;
2. shall be installed according to the manufacturer's specifications;
3. shall comply with either ASTM C578, C612, or C1029 as applicable; and
4. shall have a rigid, opaque, and weather-resistant protective covering to prevent the degradation of the insulation's thermal performance. The protective covering shall cover the exposed exterior insulation and extend a minimum of six inches (152 mm) below grade. The insulation and protective covering system shall be flashed in accordance with IRC Section R703.8.

N1102.2.6.7 Interior foundation insulation requirements. An insulation assembly installed on the interior of foundation walls shall meet the following provisions:

1. Masonry foundation walls shall be drained through the masonry block cores to an approved interior drainage system.
2. If a frame wall is installed, it shall not be in direct contact with the foundation wall unless that interior side of the foundation wall has been waterproofed.
3. Comply with the interior air barrier requirements in Section N1102.4.1.
4. Comply with Section N1102.2.6.8, N1104.2.2.6.9, N1102.2.6.10, or N1102.2.6.11.

N1102.2.6.8 Rigid interior insulation. Rigid interior insulation shall comply with the following:

1. Either ASTM C578 or ASTM C1289.
2. Dampproofing, waterproofing, or a water repellent shall be applied to the exposed above grade foundation walls or a layer of dampproofing or waterproofing shall be installed on the entire inside surface of the foundation wall. Water-repellent materials shall comply with ASTM E514 with 90 percent or greater reduction in water permeance when compared to an untreated sample.
3. Installation requirements:
 - a. must be in contact with the foundation wall surface;
 - b. vertical edges shall be sealed with acoustic sealant;
 - c. all interior joints, edges, and penetrations shall be sealed against air and water vapor penetration;
 - d. horizontally continuous acoustic sealant exists between the foundation wall and the insulation at the top of the foundation wall; and
 - e. horizontally continuous acoustic sealant exists between the basement floor and the bottom insulation edge.
4. The insulation shall not be penetrated by the placement of utilities or by fasteners or connectors used to install a frame wall.

N1102.2.6.9 Spray-applied interior insulation. Spray-applied interior insulation shall comply with the following as applicable:

1. Closed cell polyurethane.

- a. ASTM C1029 compliant with a permeance not greater than 1 in accordance with ASTM E96 procedure A.
 - b. Sprayed directly onto the foundation wall surface. There must be a one-inch minimum gap between the foundation wall surface and any framing.
 - c. The insulation shall not be penetrated by the placement of utilities.
 - d. Through penetrations shall be sealed.
2. One-half pound free rise open cell foam.
 - a. Sprayed directly onto the foundation wall surface. There must be a one-inch minimum gap between the foundation wall surface and any framing.
 - b. The insulation shall not be penetrated by the placement of utilities.
 - c. Through penetrations shall be sealed.

N1102.2.6.10 Semi-rigid interior insulation. Semi-rigid interior insulation shall comply with the following:

1. ASTM C1621 with a maximum permeance of 1.1 per inch.
2. Must have a minimum density of 1.3 pcf and have a fungal resistance per ASTM C1338.
3. Installation requirements:
 - a. Must be in contact with the foundation wall surface;
 - b. Vertical edges shall be sealed with acoustic sealant;
 - c. All interior joints, edges, and penetrations shall be sealed against air and water vapor penetration;
 - d. Horizontally continuous acoustic sealant shall be applied between the foundation wall and the insulation at the top of the foundation wall; and
 - e. Horizontally continuous acoustic sealant shall be applied between the basement floor and the bottom insulation edge.

N1102.2.6.11 Unfaced fiberglass batt interior insulation. Unfaced fiberglass batt interior insulation shall comply with the following:

1. Waterproofing shall be applied to the entire inside surface of the foundation wall.
2. The top and bottom plates must be air sealed to the foundation wall surface and the basement floor.
3. In addition, an air barrier material and vapor retarder material with a minimum permeance of at least 1, in accordance with ASTM E96 procedure

A, shall be installed on the warm-in-winter side of the foundation insulation meeting the following:

- a. Air sealed to the framing with construction adhesive or equivalent at the top and bottom plates and where the adjacent wall is insulated;
 - b. Air sealed utility boxes and other penetrations; and
 - c. All seams shall be overlapped at least six inches and sealed with compatible sealing tape or equivalent.
4. Up to R-13 batts are allowed.

N1102.2.6.12 Foundation wall insulation performance option. Insulated foundation systems designed and installed under the performance option shall meet the requirements of this section.

N1102.2.6.12.1 Water separation plane. The foundation shall be designed and built to have a continuous water separation plane between the interior and exterior. The interior side of the water separation plane must:

1. have a stable annual wetting/drying cycle whereby foundation wall system water (solid, liquid, and vapor) transport processes produce no net accumulation of ice or water over a full calendar year and the foundation wall system is free of absorbed water for at least four months over a full calendar year;
2. prevent conditions of moisture and temperature to prevail for a time period favorable to mold growth for the materials used; and
3. prevent liquid water from the foundation wall system from reaching the foundation floor system at any time during a full calendar year.

N1102.2.6.12.2 Documentation. The foundation insulation system designer shall provide documentation certified by a professional engineer licensed in Minnesota demonstrating how the requirements of this section are fulfilled. The foundation insulation system designer shall also specify the design conditions for the wall and the design conditions for the interior space for which the water separation plane will meet the requirements of this section. The foundation insulation system designer shall provide a label disclosing these design conditions. The label shall be posted in accordance with Section N1101.8.

N1102.2.6.12.3 Installation. The water separation plane shall be designed and installed to prevent external liquid or capillary water flow across it after the foundation is backfilled.

N1102.2.6.12.4 Foundation air barrier. The foundation insulation system shall be designed and installed to have a foundation air barrier system between the interior and the exterior. The foundation air barrier system must be a material or combination of materials that is continuous with all joints sealed and is durable for the intended application. Material used for the foundation air barrier system must have an air permeability not to exceed $0.004 \text{ ft}^3 / \text{min} \cdot \text{ft}^2$ under a pressure differential of 0.3 inches water (1.57 psf) ($0.02 \text{ L/s} \cdot \text{m}^2$ at 75Pa) as determined by either commonly accepted engineering tables or by being labeled by the manufacturer as having these values when tested in accordance with ASTM E2178.

N1102.2.7 Slab-on-grade floors. IRC Section N1102.2.7 is deleted in its entirety.

N1102.2.8 Crawl space walls. IRC Section N1102.2.8 is deleted in its entirety.

N1102.2.9 Masonry veneer. Insulation shall not be required on the horizontal portion of the foundation that supports a masonry veneer.

N1102.2.10 Thermally isolated sunroom insulation. Sunrooms that are capable of maintaining, through design or heat loss, 50 degrees Fahrenheit (10 degrees Celsius), during the heating season shall meet the building thermal envelope requirements of Table N1102.1 or N1102.1.2. New ceilings and walls separating the thermally isolated sunroom from conditioned space shall meet the building thermal envelope requirements of Table N1102.1 or N1102.1.2.

Exception: Insulation is not needed in ceilings, walls, and floors that do not separate the sunroom from conditioned space and when the sunroom is not capable of maintaining, through design or heat gain, 50 degrees Fahrenheit (10 degrees Celsius) during the heating season.

Subp. 10. **IRC Section N1102.3.** IRC Section N1102.3 is amended to read as follows:

N1102.3 Fenestration.

N1102.3.1 U-factor. An area-weighted average of fenestration products shall be permitted to satisfy the U-factor requirements.

N1102.3.2 Glazed fenestration exemption. Up to 15 square feet (1.4 m^2) of glazed fenestration per dwelling unit shall be permitted to be exempt from U-factor requirements in Section N1102.1.

N1102.3.3 Opaque door exemption. One opaque door assembly is exempted from the U-factor requirement in Section N1102.1.

N1102.3.4 Thermally isolated sunroom U-factor. New windows and doors separating the sunroom from conditioned space shall meet the building thermal envelope requirements.

N1102.3.5 Replacement fenestration. Where some or all of an existing fenestration unit is replaced with a new fenestration product, excluding those items considered as repair or maintenance, the replacement fenestration unit shall meet the applicable requirements for U-factors found in Table N1102.1 unless exempt under Section N1102.3.3.

Subp. 11. **IRC Section N1102.4.** IRC Section N1102.4 is deleted in its entirety and replaced with the following:

N1102.4 Thermal envelope air leakage.

N1102.4.1 Interior air barrier. The building thermal envelope shall be continuously sealed to limit the leakage of air through the thermal envelope. The air barrier shall be installed on the warm-in-winter side of the thermal insulation. Areas of potential air leakage in the building thermal envelope shall be caulked, gasketed, weatherstripped, or otherwise sealed with an air barrier material, suitable film, or solid material to form an effective barrier between conditioned and unconditioned spaces. The integrity of all air barriers shall be maintained. The sealing methods between dissimilar materials shall allow for differential expansion and contraction. The following shall be caulked, gasketed, weatherstripped, or otherwise sealed with an air barrier material, suitable film, or solid material:

1. walls, floors, ceilings, overhangs, kneewalls, and floor rim joist areas separating conditioned from unconditioned spaces;
2. at all joints, seams, and penetrations of the building thermal envelope;
3. at all electrical, plumbing, mechanical, and other penetrations of the interior air barriers;
4. at all interconnections in the thermal envelope between concealed vertical and horizontal spaces such as soffits, drop ceilings, cove ceilings, and similar locations;
5. in concealed spaces between stairs, fireplace framing, partition walls, chases, tubs, and showers directly adjacent to the building thermal envelope;
6. at the top of interior partition walls and walls separating dwelling units where they join insulated ceilings; and
7. at openings between framing members and window, skylight and door frames, and jambs.

Exceptions:

1. Areas that do not separate conditioned from nonconditioned space.

2. When the insulation material or insulated assembly prevents the leakage of air through the thermal envelope.

N1102.4.2 Fenestration air leakage. Windows, skylights, and sliding glass doors shall have an air infiltration rate of no more than 0.3 cubic foot per minute per square foot [$1.5(L/s)/m^2$], and swinging doors no more than 0.5 cubic foot per minute per square foot [$2.5(L/s)/m^2$], when tested according to NFRC 400 or AAMA/WDMA/CSA 101/I.S.2/A440 by an accredited independent laboratory, and listed and labeled by the manufacturer.

Exception: Site-built windows, skylights, and doors.

N1102.4.3 Recessed lighting. Recessed luminaires installed in the building thermal envelope shall be sealed to limit air leakage between conditioned and unconditioned spaces by being:

1. IC-rated and labeled with enclosures that are sealed or gasketed to prevent air leakage to the ceiling cavity or unconditioned space;
2. IC-rated and labeled as meeting ASTM E283 when tested at 1.57 pounds per square foot (75 Pa) pressure differential with no more than 2.0 cubic feet per minute (0.944 L/s) of air movement from the conditioned space to the ceiling cavity; or
3. located inside an airtight sealed box with clearances of at least 0.5 inch (13 mm) from combustible material and 3 inches (76 mm) from insulation.

N1102.4.4 Exterior wind wash barrier. An exterior wind wash barrier must be installed in the following areas when they separate conditioned from nonconditioned spaces. Where a sealed wind wash/weather barrier is required it must be sealed prior to covering or making it inaccessible. All penetrations in the wind wash/weather barrier must be sealed to prevent the intrusion of water and airborne moisture. In all other locations the wind wash/weather barrier shall be tightly fit to framing members and building components:

1. between an attached garage and interior conditioned spaces (tightly fit);
2. at the exterior edge of the exterior wall top plate extending vertically to the underside of the truss top cord, or for nontruss wood framing to within 3-1/2 inches of the roof deck, or to the top of the ceiling insulation (tightly fit);
3. at all exterior walls and all rim joist areas (tightly fit); and
4. at all cantilevers, cantilevered rims, and floors over unconditioned spaces (sealed).

Subp. 12. **IRC Section N1102.5.** IRC Section N1102.5 is deleted in its entirety and replaced with the following:

N1102.5 Vapor diffusion management.

N1102.5.1 Exterior wall vapor retarder. Above grade frame walls, rim joists, floors, and ceilings shall be provided with an approved vapor retarder as defined in IRC Section R202. The vapor retarder shall be installed on the warm-in-winter side of the thermal insulation. Subfloor materials that meet the requirements of a vapor retarder are allowed. The vapor retarder does not need to be continuously sealed unless it also serves as an air barrier.

Exceptions:

1. In construction where moisture or its freezing will not damage the materials.
2. Where other approved means to avoid condensation are provided, such as when rim joists, crawl space walls, or basement walls are insulated on the exterior or are integral to the building assembly and meeting the vapor retarder requirements.

N1102.5.2 Under-slab vapor retarders. Under-slab vapor retarders shall meet the provisions of parts 1322.2100 to 1322.2103.

N1102.5.3 Crawl space floor vapor retarder. The floors of insulated crawl spaces shall be covered with a vapor retarder meeting the provisions of parts 1322.2100 to 1322.2103.

Subp. 13. **IRC Section N1102.6.** IRC Section N1102 is amended by adding a section to read as follows:

N1102.6 Alterations and repairs to existing residential buildings.

N1102.6.1 Reducing air leakage. A combustion air supply must be provided in accordance with Minnesota Rules, chapter 1346, when an alteration includes installation of attic insulation, wall insulation in more than 50 percent of the area of exterior above grade walls, insulation in at least 50 percent of rim joist spaces, cladding replacement covering more than 50 percent of the total area of exterior walls, or replacement of more than 50 percent of the total number of exterior windows and doors combined.

Exceptions:

Combustion air is not required if any of the following apply:

1. the building is equipped with carbon monoxide alarms installed in compliance with Minnesota Statutes, sections 299F.50 and 299F.51;
2. the building contains all direct vent or all electric appliances for space and water heating;

3. a worst case draft test is performed according to the Minnesota Department of Commerce's Minnesota Weatherization Field Guide, and documentation is provided that the vented appliances continue to draft within established parameters of the Worst Case Draft Test procedure;
4. a test is performed according to CGSB Standard 51.71 and the depressurization limit does not exceed the maximum amount referenced in Table 3; or
5. the Recommended Procedure for Safety Inspection of an Existing Appliance Installation from Appendix D of the 2006 International Fuel Gas Code is performed for each natural draft water or space heating appliance.

N1102.6.2 Conversions. A change in the occupancy of an existing building meeting the scoping provisions of this chapter that would require an increase in demand for either fossil fuel or electrical energy supply shall comply with the requirements of this chapter.

Exception: Existing HVAC and service water heating equipment within an existing building is not required to be replaced.

N1102.6.3 Penetrations. Penetrations resulting as part of an alteration must be sealed. This includes, but is not limited to, penetrations for telecommunication wires and equipment, electrical wires and equipment, electronic wires and equipment, fire sprinklers, plumbing and ducts, and penetrations in exterior walls and ceilings.

N1102.6.4 Roofs and ceilings.

- A. Attic insulation may not be installed unless accessible attic bypasses have been sealed.
- B. A ceiling vapor retarder may be omitted if the interior ceiling finish is not removed.

N1102.6.5 Walls.

- A. Storm windows may be installed over existing glazing without meeting the additional requirements of this chapter.
- B. Reglazing and repairs to existing windows are not required to meet the additional requirements of this chapter.
- C. Interior wall finish may not be replaced unless wall cavities have been insulated to full depth. This item shall apply whenever plaster is removed, even though lath may not have been removed.

Exceptions:

1. Walls that are back-plastered; and

2. Walls without framing cavities.

D. A vapor retarder is not required if the interior wall finish is not removed.

Statutory Authority: *MS s 326B.02; 326B.101; 326B.106; 326B.13*

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