

# SECTION R316 FOAM PLASTIC

## **R316.1 General.**

The provisions of this section shall govern the materials, design, application, construction and installation of foam plastic materials.

## **R316.2 Labeling and identification.**

Packages and containers of foam plastic insulation and foam plastic insulation components delivered to the job site shall bear the *label* of an *approved* agency showing the manufacturer's name, the product listing, product identification and information sufficient to determine that the end use will comply with the requirements.

## **R316.3 Surface burning characteristics.**

Unless otherwise allowed in Section R316.5 or R316.6, all foam plastic or foam plastic cores used as a component in manufactured assemblies used in building construction shall have a flame spread index of not more than 75 and shall have a smoke-developed index of not more than 450 when tested in the maximum thickness intended for use in accordance with ASTM E 84 or UL 723. Loose-fill-type foam plastic insulation shall be tested as board stock for the flame spread index and smoke-developed index.

**Exception:** Foam plastic insulation more than 4 inches (102 mm) thick shall have a maximum flame spread index of 75 and a smoke-developed index of 450 where tested at a minimum thickness of 4 inches (102 mm), provided the end use is *approved* in accordance with Section R316.6 using the thickness and density intended for use.

## **R316.4 Thermal barrier.**

Unless otherwise allowed in Section R316.5 or Section R316.6, foam plastic shall be separated from the interior of a building by an *approved* thermal barrier of minimum  $\frac{1}{2}$  inch (12.7 mm) gypsum wallboard or a material that is tested in accordance with and meets the acceptance criteria of both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275.

## **R316.5 Specific requirements.**

The following requirements shall apply to these uses of foam plastic unless specifically *approved* in accordance with Section R316.6 or by other sections of the code or the requirements of Sections R316.2 through R316.4 have been met.

### **R316.5.1 Masonry or concrete construction.**

The thermal barrier specified in Section R316.4 is not required in a masonry or concrete wall, floor or roof when the foam plastic insulation is separated from the interior of the building by a minimum 1-inch (25 mm) thickness of masonry or concrete.

### **R316.5.2 Roofing.**

The thermal barrier specified in Section R316.4 is not required when the foam plastic in a roof assembly or under a roof covering is installed in accordance with the code and the manufacturer's installation instructions and is separated from the interior of the building by tongue-and-groove wood planks or wood structural panel sheathing in accordance with Section R803, not less than  $\frac{15}{32}$  inch (11.9 mm) thick bonded with exterior glue and identified as Exposure 1, with edges supported by blocking or tongue-and-groove joints or an equivalent material. The smoke-developed index for roof applications shall not be limited.

### **R316.5.3 Attics.**

The thermal barrier specified in Section R316.4 is not required where all of the following apply:

1. *Attic* access is required by Section R807.1.
2. The space is entered only for purposes of repairs or maintenance.
3. The foam plastic insulation is protected against ignition using one of the following ignition barrier materials:
  - 3.1. 1<sup>1</sup>/<sub>2</sub>-inch-thick (38 mm) mineral fiber insulation;
  - 3.2. 1/4-inch-thick (6.4 mm) wood structural panels;
  - 3.3. 3/8-inch (9.5 mm) particleboard;
  - 3.4. 1/4-inch (6.4 mm) hardboard;
  - 3.5. 3/8-inch (9.5 mm) gypsum board; or
  - 3.6. Corrosion-resistant steel having a base metal thickness of 0.016 inch (0.406 mm);
  - 3.7. 1<sup>1</sup>/<sub>2</sub>-inch-thick (38 mm) cellulose insulation.

The above ignition barrier is not required where the foam plastic insulation has been tested accordance with Section R316.6.

### **R316.5.4 Crawl spaces.**

The thermal barrier specified in Section R316.4 is not required where all of the following apply:

1. Crawlspace access is required by Section R408.4
2. Entry is made only for purposes of repairs or maintenance.
3. The foam plastic insulation is protected against ignition using one of the following ignition barrier materials:
  - 3.1. 1<sup>1</sup>/<sub>2</sub>-inch-thick (38 mm) mineral fiber insulation;
  - 3.2. 1/4-inch-thick (6.4 mm) wood structural panels;
  - 3.3. 3/8-inch (9.5 mm) particleboard;
  - 3.4. 1/4-inch (6.4 mm) hardboard;
  - 3.5. 3/8-inch (9.5 mm) gypsum board; or
  - 3.6. Corrosion-resistant steel having a base metal thickness of 0.016 inch (0.406 mm).

The above ignition barrier is not required where the foam plastic insulation has been tested accordance with Section R316.6.

### **R316.5.7 Foam backer board.**

The thermal barrier specified in Section R316.4 is not required where siding backer board foam plastic insulation has a maximum thickness of 0.5 inch (12.7 mm) and a potential heat of not more than 2000 Btu per square foot (22 720 kJ/m<sup>2</sup>) when tested in accordance with NFPA 259 provided that:

1. The foam plastic insulation is separated from the interior of the building by not less than 2 inches (51 mm) of mineral fiber insulation;
2. The foam plastic insulation is installed over existing *exterior wall* finish in conjunction with re-siding; or
3. The foam plastic insulation has been tested in accordance with Section R316.6.

### **R316.5.8 Re-siding.**

The thermal barrier specified in Section R316.4 is not required where the foam plastic insulation is installed over existing *exterior wall* finish in conjunction with re-siding provided the foam plastic has a maximum thickness of 0.5 inch (12.7 mm) and a potential heat of not more than 2000 Btu per square foot (22 720 kJ/m<sup>2</sup>) when tested in accordance with NFPA 259.

**R316.6 Specific approval.**

Foam plastic not meeting the requirements of Sections R316.3 through R316.5 shall be specifically *approved* on the basis of one of the following *approved* tests: NFPA 286 with the acceptance criteria of Section R302.9.4, FM4880, UL 1040, or UL 1715, or fire tests related to actual end-use configurations. Approval shall be based on the actual end use configuration and shall be performed on the finished foam plastic assembly in the maximum thickness intended for use. Assemblies tested shall include seams, joints and other typical details used in the installation of the assembly and shall be tested in the manner intended for use.