

Fact Sheet: Public Comments on FS 170-15 and FS 171-15

Group A Public Comments on proposed changes to the 2015 *International Building Code* (IBC)

The goal of FS 170-15 and FS 171-15 is to maintain fire safety and enable use of foam plastic insulation without flame retardants below finished exterior grade. These Public Comments modify the original proposals to address feedback from the 2015 IBC-Fire Safety Code Committee and stakeholders.

CURRENT CODE:

Chapter 26 of the 2015 IBC requires that most foam plastic insulation:

- Meet certain requirements for surface burning characteristics in accordance with ASTM E84 or UL 723.
- Be separated from the building interior by an approved 15-minute thermal barrier such as 0.5-inch gypsum board.

PROPOSED CODE CHANGES AS MODIFIED BY PUBLIC COMMENT:

- FS 170-15 and FS 171-15 would create new subsections in IBC Chapter 26 specifying below-grade uses of foam plastic insulation for which there are no requirements for surface burning characteristics.
- Use of the proposed changes would be optional and would increase consumer choice.
- Proposed changes would maintain fire safety:
 - In the uses described, foam plastic insulation has no access to oxygen or to a realistic ignition source.
 - Other requirements and practices would maintain current levels of fire safety throughout the insulation product lifecycle.

“All organic foam insulations, regardless of whether they contain fire retardants, should be considered combustibles and handled accordingly. Certain precautions must be taken to minimize any potential for fire through accidental ignition in handling, storage, and use.”

*- 2003 Technical Bulletin,
Alliance for the Polyurethanes Industry*

BENEFITS OF THE PROPOSED CHANGES:

Requirements for surface burning characteristics result in the addition of thousands of tons of flame retardants to foam plastic insulation annually.

FS 170-15 and FS 171-15 would enable safe below-grade use of insulation without harmful flame retardants, which will:

Positively Impact Health and the Environment.

Flame retardants used in foam plastic insulation are associated with human and ecological harm including neurological and reproductive impairment, hormone disruption, cancer, and aquatic toxicity. Some are persistent and bioaccumulative.

Avert Production of Certain Toxic Combustion Products.

The presence of these flame retardants in foam plastic can increase production of toxic dioxins, furans, and other combustion by-products during a fire, which may contribute to increased incidence of cancer in fire fighters.

Reduce Lifecycle Pollution from Foam Plastic Insulation.

Manufacturing, landfilling, incineration, and recycling of foam plastic insulation leads to environmental release of harmful flame retardants and their toxic combustion by-products. For instance, building insulation accounts for an estimated 87% of all HBCD releases to the environment. HBCD has been the primary flame retardant used in polystyrene building insulation.

The proposed changes would not:

- require changes in current building practice
- preclude the use of foam insulation with added flame retardants

The proposed changes would:

- maintain fire safety
- enable production and use of foam plastic insulation without added flame retardants
- provide a choice to builders and designers

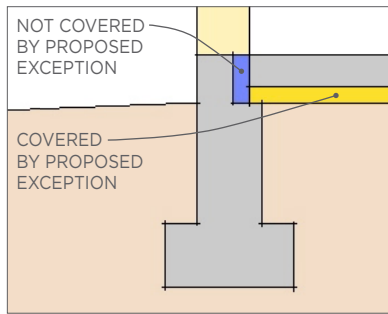
FS 170-15 and FS 171-15 as modified by Public Comment would enable safe below-grade use of foam plastic insulation without flame retardants.

Why use insulation below grade?

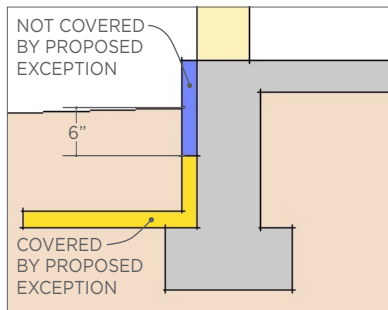
Common uses of foam plastic insulation include under cement slabs and as frost protection for foundations and basement walls.

It reduces building heat loss, leading to lower heating costs. In such below-grade uses, insulation is not a fire hazard.

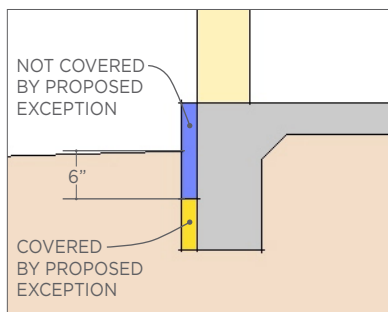
Typical applications where proposed changes would apply:



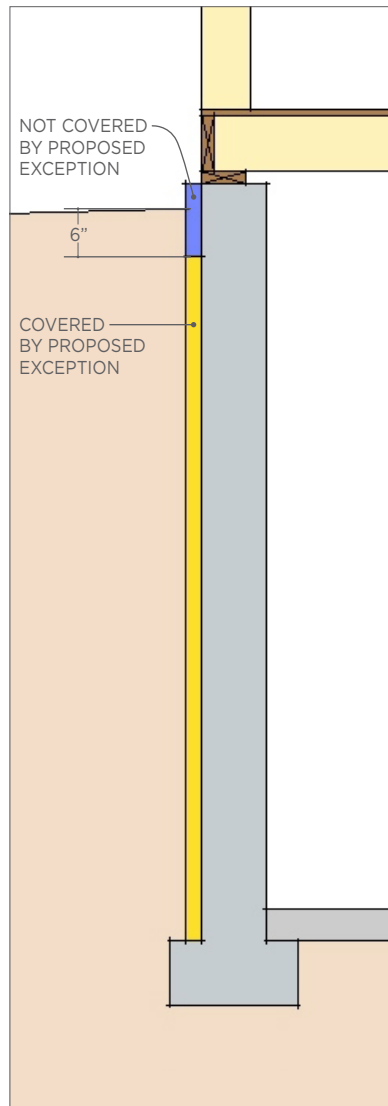
FS 170-15: BETWEEN A CONCRETE SLAB ON GRADE AND SUB-GRADE



FS 171-15: FROST-PROTECTED SHALLOW FOUNDATION



FS 171-15: THICKENED SLAB EDGE



FS 171-15: BASEMENT WALL

Types of Below-Grade Insulation

Insulation used below grade must have low-moisture absorption, sufficient strength and stability, and it must provide long-term thermal performance for below-grade conditions. Materials that satisfy these demands are typically one of four types of foam plastic: expanded polystyrene (EPS), extruded polystyrene (XPS), polyisocyanurate, or polyurethane. These insulations are installed either as a rigid board or as a spray foam.

Other Applicable Code and Standards

- IBC Section 1907 Minimum Slab Provisions
- IBC Section 1809.5 Frost Protection
- ASCE 32-01: Design and Construction of Frost Protected Shallow Foundations
- IECC Section C303.2.1 Protection of Exposed Foundation Insulation
- IECC Section C402.2.6 Slabs on Grade
- IRC Section 403.3.2 Protection of Horizontal Insulation Below Ground
- IBC Section 2603.2 Labeling and Identification
- NFPA 51B: Standard for Fire Prevention During Welding, Cutting, and Other Hot Work

Requirements of these existing code sections and standards ensure that fire safety would be maintained:

- Insulation protection would exceed minimum thermal barrier requirements in Chapter 26 throughout the course of use.
- Insulation would be appropriately labeled
- Current levels of worksite safety would be maintained.

Supporters of the proposed code changes include:

