

# 2603.4.1.14

## Foam Plastic Insulation Installed in Floor Assemblies

**CHANGE TYPE:** Addition

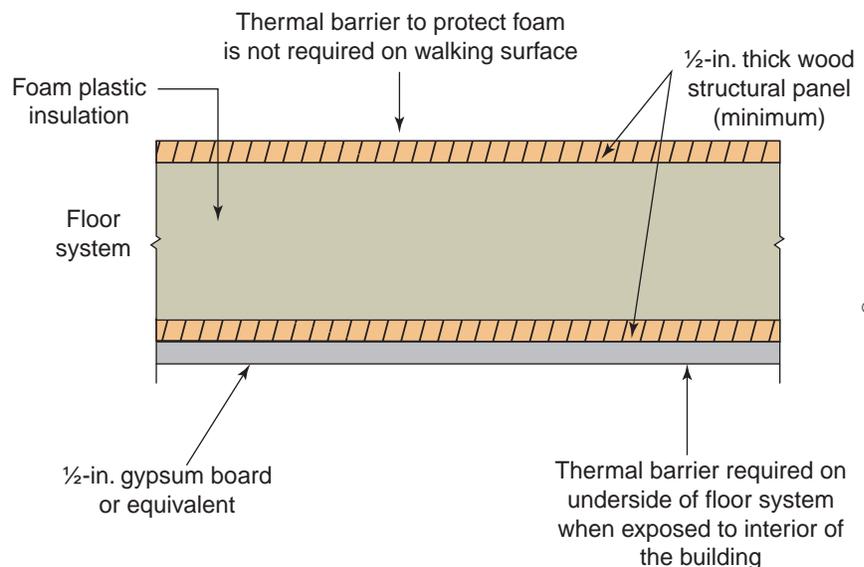
**CHANGE SUMMARY:** The use of 1/2-inch wood structural panels installed on the walking surface side of a floor assembly is now permitted as an alternative to the thermal barrier typically required where foam plastic insulation is installed within a floor assembly.

**2012 CODE: 2603.4.1.14 Floors.** The thermal barrier specified in Section 2603.4 is not required to be installed on the walking surface of a structural floor system that contains foam plastic insulation when the foam plastic is covered by a minimum nominal 1/2-inch (12.7-mm)-thick wood structural panel or approved equivalent. The thermal barrier specified in Section 2603.4 is required on the underside of the structural floor system that contains foam plastic insulation when the underside of the structural floor system is exposed to the interior of the building.

**Exception:** Foam plastic used as part of an interior floor finish.

**CHANGE SIGNIFICANCE:** A viable means to protect foam plastic insulation when it is installed within a floor system is now provided. The thermal barrier typically required where foam plastic insulation is installed beneath a walking surface must not only be an adequate barrier to protect the foam plastic but must also be durable enough to withstand the load and wear-and-tear that is needed for the floor. The new allowance is consistent with the minimum protection required for attics and crawl spaces and should eliminate confusion about what level of protection is needed for floor assemblies containing foam insulation, such as those where structural insulated panels (SIPs) are used.

With society's focus on energy efficiency and conservation, many new types of products are being used that incorporate foam plastic insulation for energy reasons. One example is the use of structural insulated panels where the foam plastic is laminated between two structural wood facings.



Requirements for floors with foam plastic insulation



International Code Council®

Insulated panel system being installed

These types of panels can be used as a wall, floor, or roof. Regardless of where or why the material is installed, the code requires that foam plastic insulation materials be adequately separated from the interior of the building for both occupant protection and to prevent ignition sources from reaching the insulation.

Foam plastic is generally required to be protected by a thermal barrier, which typically consists of ½-inch gypsum wallboard. In the case of flooring, gypsum wallboard or other common thermal barrier materials cannot be used on the walking surfaces due to their friability. This concern is now addressed because ½-inch-thick plywood, or equivalent, when installed on the walking surface is considered to provide sufficient protection to the foam plastic insulation. While a ½-inch wood structural panel (i.e., plywood or oriented strand board) is not by itself considered as a complying “thermal barrier” as required by Section 2603, it will fulfill the dual need for structural strength and thermal protection of the foam insulation. In the case of a floor, the panels will provide sufficient protection because, in the event of an interior fire, the floor faces a reduced exposure and is typically the last building element to be significantly exposed by the fire.

It is important to note that the use of the ½-inch wood structural panels is only accepted on the walking surface side of the floor. If the floor is used in multi-story construction, then the underside of the floor system (ceiling of the room below) must be covered by the typically required thermal barrier. The required thermal barrier protection on the bottom side of the assembly cannot be reduced because it does not face the problems of a walking surface and it will face a more severe exposure to an interior fire.

As an additional note, the exception has been added to address items such as carpet padding, etc., that do not need to be covered by a thermal barrier.