

Product Information Bulletin 270

Flame Retardant in Plasti-Fab EPS Products

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This bulletin provides basic information regarding flame retardant used in Plasti-Fab expanded polystyrene (EPS) products.

Why use a Flame Retardant in Foam Plastic Insulation

All construction materials must adhere to fire safety requirements during their manufacture, transportation and storage. Flame retardants used in foam plastic insulation allow them to meet building code fire performance requirements when used as a component in building assemblies and permit safe handling and storage of the product.

When EPS containing a flame retardant is exposed to a fire source the decomposition products cause flame quenching, so that EPS will not continue to burn when the fire source is removed. While overall fire performance cannot be predicted from small-scale laboratory tests due to the complexity of a real fire situation, the limiting oxygen index test required by North American EPS insulation specifications and standards clearly show that it is much more difficult to ignite EPS made with a fire retardant additive than EPS made without a fire retardant.

Flame Retardant in Plasti-Fab EPS Products

Plasti-Fab EPS products for construction applications contain low levels of flame retardant (less than 1 % by weight). The flame retardant is incorporated into the expandable polystyrene resin (EPR) raw material used to manufacture EPS products. Until recently, the flame retardant used by most manufacturers of EPR was HBCD (hexabromocyclododecane). However, the chemical industry has developed an alternative flame retardant and the use of HBCD has now been discontinued in the manufacture of all EPR used by Plasti-Fab.

The brominated copolymer flame retardant, which has been concluded to have very low environmental toxicity and low bioaccumulation potential, is the most widely used in the manufacture of EPR. Sufficient commercial production of the brominated copolymer flame retardant is now online and testing has been completed to ensure that Plasti-Fab EPS products will continue to adhere to product performance requirements including all building code fire performance requirements.