

polyurethane & polyisocyanurate foam

Six Steps for Fire Safety During Construction

Fire is a serious concern during construction, repair and retrofit projects because there may be exposed polyurethane/polyisocyanurate foam and the potential for exposure to open flame from welding and cutting torches from allied trades during certain construction sequences. While fires involving polyurethane/polyisocyanurate foam during construction are rare, they do happen and steps can be taken to help prevent these accidents. The following safety precautions are suggested for the construction site. However, if a fire does occur and cannot be extinguished immediately, evacuate the area at once.



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Contractor:

- ▲ Conduct job safety meetings with other trades before, during and after polyurethane or polyisocyanurate application.
- ▲ If foam insulation is being installed near potential ignition sources, a fire watch is required (see following section for applicability).
- ▲ Provide warning signs and labels on the job site where the trades performing hot work are most likely to see them.
- ▲ Schedule thermal barrier application as soon as practically possible.
- ▲ Keep other trades from working in the application area until a thermal barrier is applied over the foam. If another trade must work in the area before the thermal barrier is applied, they should determine if a fire watch is required (see following section for applicability).

If repair or retrofit projects expose polyurethane/polyisocyanurate foam, follow the same fire prevention procedures as for new construction.

Trade Performing "Hot Work":

- ▲ "Hot work" permits must be authorized by an individual designated by management and only after a "hot work" assessment has been completed. The person performing the "hot work" is not authorized to make such assessments or issue permits.
- ▲ Thoroughly educate other trades on the site about fire characteristics of polyurethane or polyisocyanurate foam.
- ▲ If possible, perform "hot work" in a designated area free of combustibles.
- ▲ If "hot work" must be performed in an area where there are combustibles:
 - If possible, move the combustibles a distance of at least 35 feet from the "hot work."
 - If the combustibles cannot be moved, shield the combustibles with a fire retardant cover.
- ▲ A fire watch is required where:
 - combustible building materials or contents are closer than 35 feet to the point of operation;
 - wall or floor openings within a 35-foot radius expose combustible materials in adjacent areas, including concealed spaces in walls or floors;
 - combustible materials are adjacent to the opposite side of partitions, walls, ceilings, or roofs and are likely to be ignited; or
 - any other criteria are applicable as listed by OSHA under 29 CFR § 1910.752.

All Trades:

If a fire occurs that cannot be extinguished immediately, evacuate the area at once.

- ▲ Have an adequate supply of fire extinguishers in convenient locations. Personnel that use extinguishers must be trained in their use. (Note: Around polyurethane and polyisocyanurate foam, extinguisher operators should know how to use CO₂ and dry chemical extinguishers.)
- ▲ Waste materials (such as foam trim, paper, solvent, etc.) should be disposed of daily in a designated location with due regard for their combustibility characteristics.

Additional Fire Safety Information:

Rigid polyurethane or polyisocyanurate foams will, if ignited, release various products of combustion such as smoke and gases that may be irritating, flammable and/or toxic. As with other organic materials, such as wood, the primary combustible gases are carbon dioxide and carbon monoxide.

▲ **AY 126, THERMAL BARRIERS FOR THE SPRAY POLYURETHANE FOAM INDUSTRY**

Spray Polyurethane Foam Alliance Technical Document
800-523-6154 www.sprayfoam.org

▲ **FIRE SAFETY GUIDELINES FOR USE OF RIGID POLYURETHANE OR POLYISOCYANURATE FOAM INSULATION IN BUILDING CONSTRUCTION**

Alliance for the Polyurethanes Industry Bulletin
703-253-0656 www.polyurethane.org

▲ **NFPA 51 B, FIRE PREVENTION DURING WELDING, CUTTING AND OTHER HOT WORK**

National Fire Prevention Association Standard
617-984-7402 www.nfpa.org

▲ **OSHA REGULATION 29 CFR § 1910.752 WELDING, CUTTING, AND BRAZING APPLICATION STANDARD**

www.osha-slc.gov/OshStd_data/1010_0252.html

DISCLAIMER: This guide was developed by the Alliance for the Polyurethanes Industry (API), a business unit of the American Plastics Council (APC). The guide briefly summarizes a few fire safety guidelines for use when building with polyurethane or polyisocyanurate foam insulation. It is not intended to define or create legal rights or obligations, or to provide specific legal or technical advice. Neither API nor APC (including members, employees, subcontractors, consultants, or other assigns) makes any warranty or guaranty, express or implied, or assumes any liability or responsibility for any use of any information, product, or process disclosed in this document.

The person that uses this document has an independent obligation to ascertain that their actions and practices represent sound fire safety practices. This document is necessarily general in nature and leaves dealing with product and site-specific circumstances to the persons on site, who may vary their approach in response to specific factual circumstances. Users of this document are, of course, expected to comply with federal, state, and local laws and regulations, and should consult with legal counsel concerning such matters.

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1

Meet

Conduct a safety meeting with other trades

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2

Post

Put up warning signs at the site

3

Move

Move combustibles away from the "hot work" site



4

Shield

Shield combustibles with fire blanket or welder's blanket





5

Watch

Provide fire watch. Have appropriate fire extinguisher and telephone nearby. Evacuate area if fire cannot be extinguished immediately.

6

Protect

Protect installed foam with a thermal barrier such as 1/2" gypsum board as soon as possible.

