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Fire Safety with Structural Insulated Panel Construction

Fire safety is an important and potentially life-saving issue for homeowners, fire fighters, and building code officials. When constructed to the requirements of the applicable building code, homes built with structural insulated panels (SIPs) provide occupants with adequate protection in the event of a residential fire.

Building Code Compliance

The International Building Code (IBC) classifies buildings into various Types (I, II, III, IV or V). Each Type has various construction limitations that include items such as building story height, square footage, and construction materials. Most wood frame buildings are classified as Type V.

Similar to conventional wood frame construction, SIPs with oriented strand board (OSB) facings are classified as Type V construction under the IBC. Type V construction permits the use of combustible materials such as OSB and wood framing. Both SIPs and conventional wood frame buildings present a manageable fire risk when their construction meets the fire precautions listed in the building code.

Fire precautions for SIP homes include:

- Application of a 15-minute fire-resistant thermal barrier on the interior, such as 1/2-inch-thick gypsum board or a material of equivalent thermal performance
- Properly installed and protected electrical systems and appliances
- Properly installed and protected natural gas appliances
- Smoke alarms

In addition, fire safety is greatly improved when a number of precautions are taken by building occupants, such as the proper handling and storage of flammable materials as well as the safe use of both natural gas and electrical appliances.

Light commercial or multi-use buildings of Type V Fire Rated construction may require a one-hour fire rating and/or sprinkler systems. When a one-hour fire rated assembly is required, SIP manufacturers can provide tested assemblies for both walls and roofs that meet the one-hour fire resistance tests outlined in ASTM E119. Check with your local manufacturer for available assemblies.

