

Building Bulletin

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Use of Exterior Insulated Sheathing on Exterior Walls with a Fire-Resistance Rating

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Overview

The use of continuous exterior insulated sheathing, particularly foamed plastic insulation, has become increasingly common in low-rise residential construction. This trend is largely driven by the energy efficiency prescriptive compliance packages in the Ontario Building Code (OBC), which commonly require continuous insulation on exterior walls.

However, when an exterior wall is required to have a fire-resistance rating (FRR), the use of exterior insulated sheathing (e.g. foamed plastic or mineral fibre) is subject to specific limitations. Supplementary Standards SB-2 and SB-3 are a common source used to determine fire-resistance ratings of building assemblies, particularly Part 9 Residential, and both provide detailed requirements on where and how exterior insulated sheathing may be used.

This bulletin outlines these limitations and offers guidance on compliant wall assembly configurations that incorporate continuous exterior insulation.

SB-2 - Component Additive Method (Section 2.3.)

Under SB-2, Section 2.3., the FRR of an exterior wall assembly is determined by combining individual components as outlined in various Tables. Following these Tables, Article 2.3.5. provides additional considerations for various types of assemblies.

Sentence (2) of this Article provides specific requirements for the sheathing of exterior walls required to have an FRR and **requires plywood, oriented strand board (OSB), or gypsum sheathing**. Continuous exterior insulation (e.g. foamed plastic or mineral fibre) may only be installed outboard of this required sheathing. (See Figure 1).

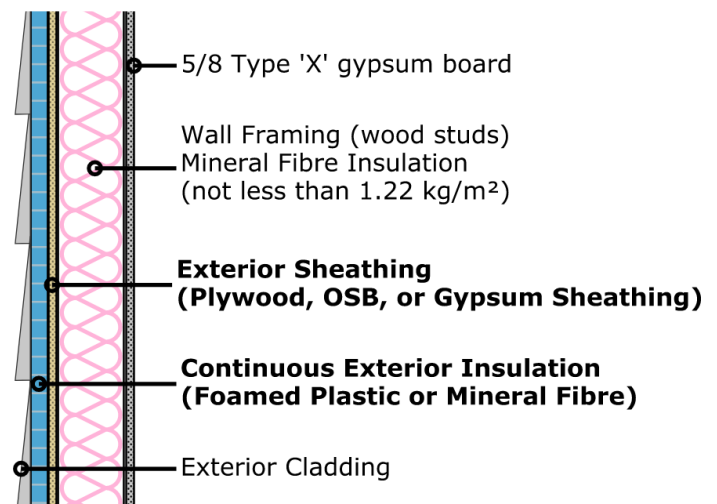


Figure 1*

SB-3 – Pre-Designed Wall Assemblies (Table 1)

SB-3 provides a selection of pre-designed wall assemblies with defined fire-resistance ratings. For exterior wall assemblies, most **require plywood, OSB, or gypsum sheathing**. As with SB-2, continuous exterior insulation may only be installed outboard of this required sheathing, as noted in footnote (19) of Table 1. (See Figure 1 - *previous page*)

There are only three assemblies (**EW1e, EW2j, and EW3k**) that allow the use of exterior insulated sheathing (e.g. foamed plastic or mineral fibre) **without the use of other sheathing**, and **all three require brick veneer** as cladding, as specified in footnote (20) of Table 1. (See Figure 2)

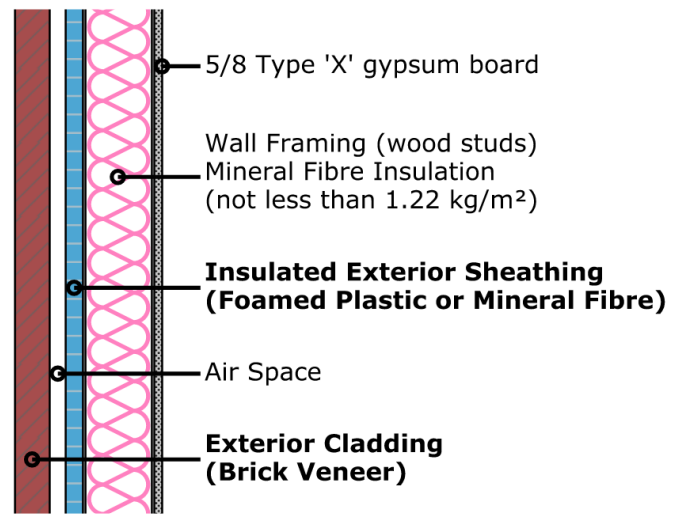


Figure 2*

***Note:** Figures 1 & 2 are intentionally simplified to emphasize fire-resistance requirements. Other environmental or building envelope requirements have been excluded for clarity.

Additional Considerations

Where the exterior wall (or building) requires non-combustible construction or non-combustible cladding, additional provisions may apply. In such cases it is essential to review the provisions of Articles 9.10.14.5., 9.10.15.5., 3.2.3.7. and Section 3.1.5. of the OBC as applicable. These requirements are in addition to the requirements outlined in SB-2 and SB-3.

Helpful Reminders

- When using Tables in the OBC, including SB-2 and SB-3, be sure to review all applicable footnotes, as they may contain critical information.
- Ensure your building permit submissions clearly identify:
 - Which assemblies require a fire-resistance rating, **and**
 - The source used to determine each rating (e.g. SB-3 and specific assembly number, SB-2 component additive method and list individual component ratings, ULC listing number, etc.).

The information provided in this bulletin is general in nature, is not intended as legal or technical advice, and should not be relied on as such.

If and when any building permit is applied for a project, all pertinent Code requirements will be reviewed at that time.

Under the Building Code Act, the local municipality is the authority having jurisdiction (AHJ) for enforcing the Act and its Regulations, and permit applicants should contact the appropriate official/AHJ with respect to any specific proposal.