

Product Information Bulletin

PlastiSpan® and PlastiSpan HD Insulation NBC 2010 and 2015 Insulating Sheathing Requirements

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This bulletin provides general material and installation requirements for **PlastiSpan®** and **PlastiSpan HD** insulation used as an insulating sheathing board in conformance with the National Building Code of Canada (NBC) 2010 and 2015. The table below provides material properties as per CAN/ULC-S701.1 (formerly CAN/ULC-S701), the National Standard of Canada for moulded expanded polystyrene (EPS) insulation.

Material Properties ^{1, 2}	Units	Type 1	Type 2
Thermal Resistance <i>Minimum per 25 mm (1 inch)</i> ASTM C518	m ² ·°C/W (ft ² ·h·°F/BTU)	0.65 (3.75)	0.70 (4.04)
Compressive Resistance <i>Minimum @ 10% Strain</i> ASTM D1621	kPa (psi)	70 (10)	110 (16)
Flexural Strength <i>Minimum</i> ASTM C203	kPa (psi)	170 (25)	240 (35)
Water Vapour Permeance ³ <i>Maximum</i> ASTM E96	ng/(Pa·s·m ²) (Perms)	300 (5.2)	200 (3.5)
Water Absorption ⁴ <i>Maximum</i> ASTM D2842	% By volume	6.0	4.0
Dimensional Stability <i>Maximum</i> ASTM D2126	% Linear Change	1.5	1.5
Limiting Oxygen Index <i>Minimum</i> ASTM D2863	%	24	24
Flame Spread Rating CAN/ULC S102.2	NA	290	
Smoke Developed Classification CAN/ULC S102.2	NA	Over 500	

¹ Material properties are third party certified to CAN/ULC-S701.1, **Standard for Thermal Insulation, Polystyrene Boards**, under an Intertek third party certification program. See Intertek Code Compliance Research Report CCRR-1072 for additional information.

² PlastiSpan and PlastiSpan HD insulation are listed by the Canadian Construction Materials Centre (CCMC) under evaluation listing numbers 12424-L (Type 1) and 12425-L (Type 2).

³ WVP values quoted are maximum values for 25-mm (1-inch) thick samples with natural skins intact. Lower values will result for thicker materials.

⁴ The water absorption laboratory test method involves complete submersion under a head of water for 96 hours. The water absorption values above are applicable to specific end-use design requirements only to the extent that the end-use conditions are similar to test method requirements.

1. Scope:

1.1. NBC 2010 and 2015:

- 1.1.1. Article 9.23.10.2. – Bracing and Lateral Support
- 1.1.2. Article 9.23.17.1. – Required Sheathing
- 1.1.3. Article 9.23.17.2. – Thickness, Rating and Material Standards
- 1.1.4. Article 9.23.17.3. – Attachment of Cladding to Sheathing
- 1.1.5. Article 9.27.3.3. – Required Sheathing Membrane and Installation
- 1.1.6. Article 9.27.3.4. – Insulating Sheathing in Lieu of Sheathing Membrane
- 1.1.7. Article 9.27.5.1. – Attachment of Cladding
- 1.1.8. Article 9.27.5.4. – Size and Spacing of Fasteners
- 1.1.9. Article 9.27.5.7. – Penetration of Fasteners

2. Materials:

2.1. Insulation Materials:

- 2.1.1. **PlastiSpan** and **PlastiSpan HD** insulating sheathing do not provide bracing and lateral support required in Article 9.23.10.2. Where bracing is required, it shall be provided as per Sentence 9.23.10.2.(3).
- 2.1.2. **PlastiSpan** insulation meets the requirements of CAN/ULC-S701.1, Type 1 and is listed with the Canadian Construction Materials Centre (CCMC) under evaluation listing 12424-L.
- 2.1.3. **PlastiSpan HD** insulation meets the requirements of CAN/ULC-S701.1, Type 2 and is listed with the CCMC under evaluation listing 12425-L.
- 2.1.4. When required to provide solid backing for exterior cladding per Article 9.23.17.1 the minimum thickness of **PlastiSpan** or **PlastiSpan HD** insulating sheathing must be 38 mm (1 ½”) as per Table 9.23.17.2.A.
- 2.1.5. Sentence 9.27.3.3.(1) state that where exterior insulating sheathing is used at least one layer of sheathing membrane shall be applied beneath cladding.
- 2.1.6. Sentences 9.27.3.4.(1) and 9.27.3.4.(2) state that where exterior insulating sheathing with an integral sheathing membrane is installed and the joints of the rigid insulating sheathing panels are lapped or detailed to ensure drainage of water to the exterior of the wall or all joints must be sealed, a separate sheathing membrane is not required.

2.2. Other Materials:

- 2.2.1. Caulking adhesives shall be compatible with polystyrene insulation conforming to CSGB 71-GP-24M, Adhesive, Flexible, for Bonding Cellular Polystyrene Insulation.
- 2.2.2. Sheathing tape used shall be any commercially available sheathing tape such as 3M, Tuck Tape, Tyvek or equivalent.
- 2.2.3. Foam-in-place non-expanding polyurethane foam shall be commercially available material compatible with polystyrene insulation.
- 2.2.4. Fasteners must be minimum 3.2 mm (1/8”) diameter with heads or washers at least 12.7 mm (1/2”) in diameter, where the cladding is applied directly against the insulation, and at least 25.4 mm (1”) diameter, where an air space between the insulation and the cladding exists.

3. Installation:

3.1. General:

- 3.1.1. Framing, cavity insulation and vapour barrier on the inside of framing (warm side) are all to be installed following normal construction practices and in conformance with the applicable section of the NBC 2010 and 2015.

- 3.1.2. Install **PlastiSpan** or **PlastiSpan HD** insulating sheathing on the exterior of wood stud construction with the horizontal joints tightly butted together. Vertical joints shall be made over the studs.
- 3.1.3. Install **PlastiSpan** or **PlastiSpan HD** insulating sheathing using fasteners as per section 2.2.4 that extend not less than 25 mm (1") into the framing as per Sentence 9.27.5.7.(2).
- 3.1.4. When used as backing for an exterior cladding, **PlastiSpan** or **PlastiSpan HD** insulating sheathing shall be fastened to wood studs at not more than 150 mm (6") centers along vertical edges and not more than 300 mm (12") along intermediate supports as per Table 9.27.5.4.
- 3.1.5. Use a suitable material as per section 2.2.3, to seal joints which have been damaged or cut. Typical locations where the insulating sheathing may be cut include at corners or around windows and doors.
- 3.1.6. Rigid insulating sheathing shall not be used for the attachment of cladding materials as stated in Sentence 9.23.17.3.(1).
- 3.1.7. Cladding material shall be nailed to the framing members, furring members or to blocking between the framing members as stated in Sentence 9.27.5.1.(1).
- 3.1.8. Cladding materials attached on the exterior side of **PlastiSpan** or **PlastiSpan HD** insulating sheathing are to be installed following normal construction practices with all fasteners penetrating through the insulating sheathing into framing members in conformance with the applicable section of the NBC with fastener penetration as per Article 9.27.5.7.