

BUILDING PRODUCTS LISTING PROGRAM

Customer: ZS2 Technologies Limited
Class: Structural Panels
Location: Calgary, Alberta
Website: <https://zs2technologies.com>

Listing No. B1141
Project No. B1141-2 Edition 1

Effective Date: December 15, 2023
Last Revised Date: December 15, 2023
Expires: N/A

| | | |
|--------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Standard(s): | Testing Application Standard (TAS) 201 | <i>Impact Test Procedures.</i> |
| | Testing Application Standard (TAS) 202 | <i>Criteria for testing Impact and Nonimpact Resistant Building Envelope Components Using Uniform Static Air Pressure.</i> |
| | Testing Application Standard (TAS) 203 | <i>Criteria for Testing Products Subject to Cyclic Wind Pressure Loading.</i> |
| | ASTM E84 | <i>Standard Test Method for Surface Burning Characteristics of Building Materials.</i> |
| | ASTM D1929 | <i>Standard Test Method for Determining Ignition Temperature of Plastics.</i> |
| | ASTM C578 | <i>Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.</i> |
| | NFPA 286 | <i>Standard Methods of Fire Tests for Evaluating Contribution of all and Ceiling Interior Finish to Room Fire Growth.</i> |

Product: TechPanel™ Structurally Insulated Panels.

Markings: Product is marked with labels supplied by ZS2 Technologies Ltd. The label includes:

- ZS2 name and address
- Product name
- Date of manufacture
- QAI Listing number (B1141)
- Flame Spread / Smoke Developed Rating (FSI < 25, SDI < 450)
- QAI listing number: B1142-2
- QAI logo with 'us' identifier shown below:



Labels are applied to palletized finished products to ensure visibility on the jobsite.

Models / Ratings: The following outlines TechPanel™ performance determined in accordance with the noted standards.

TechPanel™ foam plastic core component is classified as Type I expanded polystyrene (EPS) thermal insulation complying with ASTM C578.

TechPanel™ has the following surface burning characteristics determined in accordance with ASTM E84:

| TECHPANEL™ SURFACE BURNING CHARACTERISTICS PER ASTM E84 | | | | | |
|------------------------------------------------------------|------------------|----------|--------------------|-----------------------|-------|
| PRODUCTS | MAX. THICKNESSES | | FLAME SPREAD INDEX | SMOKE DEVELOPED INDEX | CLASS |
| | inches | mm | | | |
| TechPanel™ Surface | ½ | 12 | 0 | ≤ 5 | A |
| TechPanel™ EPS Core | 6.5 | (164 mm) | ≤ 25 ¹ | ≤ 450 | -2 |

Note 1: Ceiling measurement only. This measurement is conducted through determination of flame spread index and smoke developed index with the removal of any contribution of molten materials ignited on the floor of the tunnel assembly.

Note 2: Classification is for interior finish. As core is EPS foam plastic insulation, this material is not intended for interior surface exposure, and is not provided a “Class” rating, as this core is required protected by a code prescribed thermal barrier.

TechPanel™ EPS foam plastic core component has a spontaneous ignition temperature ≥ 650°F when evaluated in accordance with ASTM D1929.

TechPanel™ compliant NFPA 286 alternate thermal barrier configurations:

| SKINS | CORE DENSITY (maximum) | CORE THICKNESS (maximum) | SPLINE | JOINT TREATMENT | INSTALL |
|-----------------------|-----------------------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|------------|
| Minimum ½” TechBoard™ | Type I (1.0 lbs/ft ³) | 5.5 inches | Double 2x6 SPF #2. Lumber is adhered and fastened at 6 inches on center 2 rows of nails 0.120 diameter head of 3 inches length. | Joint treatment including taping and mudding is optional. | Walls Only |

TechPanel™ compliant TAS 201, TAS 202, TAS 203 configurations^{1,2,3,4}

| SKINS | CORE | PANEL THICKNESS (minimum) | HEIGHT (maximum) | SPLINE | TAS 201 RATING | TAS 202 / TAS 203 DP ⁵ |
|------------------------------------------------------------------------------------------------------------------|------------|---------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------------------|
| Minimum 1/2" TechBoard™ attached around perimeter with 2-1/2 inch length ring shank nails at 3 inches on center. | Type I EPS | 6.5 inches | 10 ft | Double 2x6 SPF #2. Lumber is adhered and fastened at 6 inches on center 2 rows of nails 0.120 diameter head of 3 inches length. | Large Missile | 110 psf |

Note 1: TechPanel™ installation includes laminated and nailed double top and sill lumber plates, with lumber plates glued into TechPanel™. Plates are plates connected to code compliant slab and floor assemblies.

Note 2: TechPanel™ connections to slab and floor lines are required as part of Engineering Design for site and are outside the scope of this report. See manufacturer's installation instructions.

Note 3: TechPanel™ resistance to anticipated service loads, including but not limited to axial capacity, racking shear, and seismic are to be determined in accordance with the applicable code and are to be part of the Engineering Design for site approved by the authority having jurisdiction.

Note 4: TechPanel™ installation includes laminated and nailed double top and sill lumber plates, with lumber plates glued into TechPanel™. Plates are plates connected to code compliant slab and floor assemblies.

Note 5: DP = Design Pressure, determined in accordance with TAS 202 static pressure evaluation with a factor of safety of 1.5 applied, and subsequent TAS 203 cyclic evaluation.

Notes: Final acceptance of the product in the intended application is to be determined by the authority having jurisdiction.

Product is to be installed in accordance with the QAI Design Listing and manufacturer's published installation instructions by qualified installing personnel.

The materials, products or systems listed herein have been qualified to bear the QAI Listing Mark under the conditions stated with each Listing. Only those products bearing the QAI Listing Mark are considered to be listed by QAI. No warranty is expressed or implied, and no guarantee is provided that any jurisdictional authority will accept the Listing found herein. The appropriate authorities should be contacted regarding the acceptability of any given Listing. Visit the QAI Online Listing Directory located at www.qai.org for the most up to date version of this Listing and to validate that this QAI Listing is active. Questions regarding this listing may be directed to info@qai.org. Please include the listing number in the request.
