



PUBLISHED: December 2022
EXPIRATION: December 2023

PRODUCT(s): TECHBOARD™

REPORT HOLDER: ZS2 Technologies Ltd.

CONTACT DETAILS: 9128 52 St. SE
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CSI DIVISIONS: 06 00 00 – Wood, Plastics, and Composites Manufacturers
09 00 00 – Finishes

CSI SECTION: 06 16 00 – Sheathing
09 28 00 – Backing Boards and Underlayments

APPLICABLE CODES: 2021, 2018, 2015 International Building Code (IBC)
2021, 2018, 2015 International Residential Code (IRC)

EVALUATED: Physical Properties.
Surface-Burning Characteristics
Structural Capacity
Fire-Resistance Ratings



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CODE EVALUATION REPORT

1.0 APPROVED FOR FOLLOWING:

APPROVED TYPES OF CONSTRUCTION:	Types I-VAB
APPROVED USE:	Exterior and Interior Wall sheathing and finish. Interior Ceilings.
APPROVED INSTALLATIONS:	<ul style="list-style-type: none"> • Exterior and Interior Load-Bearing Walls. • Load-Bearing and Non-Load Bearing Fire-Resistance Rated Walls. • Ceilings (not including Fire-Resistance Rated).

2.0 DESCRIPTION:

2.1 General:

ZS2 Technologies Ltd. Techboard™ products, are nominal ½-inch (13 mm) thickness magnesium oxide (MgO) matrix with internal alkaline resistant fiberglass mesh reinforcing. Techboard™ is produced with a smooth (interior facing stud) face, and exterior rough face, to promote bonding of surface adhered finishes. Techboard™ can be used in buildings of Type I-V construction including use in fire-resistive rated assemblies when installed in accordance with this report.

Techboard™ is approved for use in non-structural applications as interior wall, ceiling finish in dry applications and as a tileable base as outlined in Section 2509.2 of the 2021 / 2018 / 2015 IBC, and as backer board material as outlined in Section R702.4.2 of the 2021 / 2018 / 2015 IRC when installed in accordance with Section 4.2 and 9.0. Techboard™ is approved for use with dryset Portland cement and latex-based Portland cement mortars. Techboard™ is not intended as interior finish in areas defined as wet per Section 2509.1 of the 2021 / 2018 / 2015 IBC. Installation in wet area applications requires finishing with materials of smooth, hard nonabsorbent surface. TechBoard™ is classified as resistant to fungi growth when evaluated in accordance with ASTM G21.

Techboard™ is approved for use in structural applications as exterior or interior sheathing, when installed in accordance with Sections 4.3, 8.1 and 9.0 of this report where the design transverse and racking shear loads do not exceed allowable loads outlined in Tables 2, 3 and 4 of this report respectively.

Techboard™ has a flame spread index of 10 or less and a smoke developed index of 5 or less in accordance with ASTM E84 meeting Class A requirements. Techboard™ has a flame spread index of less than 25 with no evidence of significant progressive combustion with a maximum flame front of less than 10.5 feet when evaluated to ASTM E84 continued for an additional 20 minutes. Techboard™ is classified as Ignition Resistant per NFPA 1144 for use in reducing structure ignition hazard resulting from wildland fire.

Techboard™ when used in fire-resistance rated applications are to be installed in accordance with Sections 4.4, and 8.2 of this report.

Techboard™ used in Types I-IV construction shall be installed in accordance with Section 4.5 of this report.



CODE EVALUATION REPORT

Techboard™ are available in the following product options.

Table 1. Techboard™ Product Options

PRODUCTS	THICKNESS		WIDTH		LENGTH	
	inches	mm	inches	mm	ft	m
Techboard™	½	13	48	1219	8	2.5
					9	2.7
					10	3.0

Note 1: Additional product sizes are available from ZS2 where thicknesses of minimum ½” (13 mm) are maintained.

3.0 DESIGN:

Techboard™ does not require design when used as non-load bearing interior finish as a base for application of tile and decorative finish, or when used as backerboard. Fasteners when used for support of interior decorum, furniture and cabinetry are to penetrate the underlying wall framing and not rely on Techboard™ as the anchorage substrate.

Techboard™ used as structural sheathing shall be used in applications where the design transverse loads do not exceed the allowable loads outlined in Table 2 of this report.

Techboard™ used as structural sheathing for resisting racking shear shall be used in applications where the design racking shear loads do not exceed the allowable loads in Table 3 of this report for maximum shear wall height to length (aspect) ratio of 1:1 when used in Seismic Design Categories A, B and C. Refer to Table 3 Footnote 4 of this report for application in Seismic Design Categories D, E and F. Fasteners when used for anchoring of exterior wall components including furring strips, strapping and exterior claddings are to penetrate the underlying wall framing and not rely on Techboard™ as the anchorage substrate.

4.0 INSTALLATIONS:

4.1 General:

Installation of Techboard™ must comply with the manufacturer’s published installation instructions, this report, and the applicable code(s). Where differences are found, this report and the applicable building code shall be followed.

4.1.1 Special Inspection:

In jurisdictions governed by the 2021 IBC where TechBoard™ forms part of the main wind force resisting system, special inspections are required per 2021 IBC Section 1705.12 in wind Exposure Category B where the basic design wind speed, *V* is 150 mph (241 km/h) or greater, or in wind Exposure Category C or D where *V* is 140 mph (225 km/h) or greater unless exempted by 2021 IBC Section 1704.2.

In jurisdictions governed by the 2018 / 2015 IBC where TechBoard™ forms part of the main wind force resisting system, special inspections are required per 2018 / 2015 IBC Section 1705.11 in wind Exposure Category B where *V_{asd}* is 120 mph (193 km/h) or greater, or in wind Exposure Category C or D where *V_{asd}* is 110 mph (177 km/h) or greater unless exempted by 2018 / 2015 IBC Section 1704.2.



Where used in Seismic Design Category C, D, E or F, special inspection is required including ongoing periodic inspection of the *seismic force resisting system* unless exempted by 2021 / 2018 / 2015 IBC Section 1704.2.

4.2 Non-Structural Applications:

Techboard™ used in non-structural applications is to be installed with minimum 1-1/4-inch (31 mm) length 6d common nails with a maximum spacing of 8 inches (204 mm) on center around the perimeter and in the field. Fasteners are to be a minimum of 1/2-inch (13 mm) from panel edges to avoid cracking or chipping of Techboard™ panels. Alternatively, installation in accordance with Section 4.3 of this report is approved for non-structural applications.

4.3 Structural Applications:

Techboard™ used in interior and exterior applications to resist transverse or racking shear forces are to be installed in accordance with Sections 4.3.1 or 4.3.2 of this report. Where used in exterior applications, a weather-resistant exterior wall envelope shall be provided and installed in accordance with the manufacturer's installation instructions and the applicable code. Installation of exterior wall envelope and components are outside the scope of this report.

4.3.1 7/16-Inch Crown x 1-1/2-inch Length Staples: Techboard™ when installed with staples, the staples are to be stainless-steel, of minimum 16-gauge (0.064 inches) (1.6 mm) diameter x 7/16-inch (11 mm) crown x 1-1/2-inch (38 mm) leg dimensions. Installation is to be in accordance with Section 9.0 of this report.

4.3.2 #8 Coarse Thread Wood Screws: Techboard™ when installed with screws, the screws are to be corrosion resistant or stainless-steel, of minimum #8 coarse thread x 2-1/2-inch (64 mm) length. Installation is to be in accordance with Section 9.0 of this report.

4.4 Use as an Alternate to Code Prescribed Thermal Barrier:

Techboard™ is approved for use as an alternative to a code prescribed thermal barrier for the protection of foam plastic insulations of types, maximum thicknesses and densities outlined in Table 4 of this report, in accordance with 2021 / 2018 / 2015 IBC Section 2603.9 and 2021 / 2018 / 2015 IRC R316.6. Techboard™ is to be installed in accordance with Sections 4.2 or Section 4.3.

4.5 FIRE-RESISTANCE RATED CONSTRUCTION

Techboard™ panels are approved for use in fire-resistance rated construction where the load is limited (restricted) to 82% design load determined in accordance with the National Design Specification Load Resistance Factor Design (LRFD) methodology for maximum 1-hour, where the fire-resistance rating is oriented interior facing fire. The construction shall be in accordance with Section 8.2 of this report. Where loads are determined in accordance with alternate design methodology, appropriate load adjustments shall be applied.

4.6 TYPES I-IV CONSTRUCTION

TechBoard™ panels are approved for use in Types I-III and V construction non-bearing interior and exterior walls and partitions where no fire-resistance rating is required. Installation is to be in accordance with Sections 4.1, 4.2, 4.3 and 8.1 and 9.0 of this report as applicable.

TechBoard™ panels are approved for use in Types I-III and V construction nonbearing and bearing interior and exterior walls and partitions where fire-resistance ratings are required. Installation is to be in accordance with Sections 4.1, 4.2, 4.3, 4.5, 8.1 and 8.2 as applicable.



5.0 LIMITATIONS

- Installation of Techboard™ products are to comply with the applicable codes, this report and the manufacturer's installation instructions. Where conflicts are found, this report and the applicable code take precedence.
- Techboard™ is not approved as a tileable substrate for use with Organic Type 1 mortars.
- TechBoard™ structural applications to resist transverse and racking shear loads shall not exceed the allowable loads in Tables 2 and 3 of this report. Connection of wall assemblies to code compliant foundations is outside the scope of this report.
- Techboard™ for use in exterior areas exposed to weather or left exposed in areas defined as wet per Section 2509.1 of the 2021 / 2018 / 2015 IBC are outside the scope of this report.
- Techboard™ is not evaluated for compatibility with metal materials. Metal in contact with TechBoard™ shall be an approved corrosion resistant type approved by the manufacturer (ZS2).
- Techboard™ used in fire-resistance rated applications are to be installed in accordance with Sections 4.5 and 8.2 of this report with a maximum applied load of 82% design load. The fire-resistance rating is applicable to interior facing fire only.
- Techboard™ products are manufactured in China with inspections by QAI Laboratories.

6.0 SUPPORTING INFORMATION:

The following data has been submitted for evaluation of Techboard™:

- Data outlining compliance for surface burning characteristics evaluated to ASTM E84, extended for 20 minutes.
- Data outlining compliance with ICC-ES AC308 for use as backer board, interior finish, and sheathing applications.
- Data evaluating TechBoard™ assemblies for racking shear and transverse load resistance in accordance with ASTM E72.
- Data evaluating TechBoard™ assemblies for seismic resistance in accordance with ASTM E2126.
- Data evaluating the fire-resistance rating of assemblies including TechBoard™ in accordance with ASTM E119.
- Data evaluating TechBoard™ for fungi resistance in accordance with ASTM G21.
- Evaluation of TechBoard™ for protection of expanded polystyrene foam plastic insulation at 6 inches thickness in accordance with NFPA 286 as outlined in Section 2603.9 of the 2021 / 2018 / 2015 IBC.

7.0 MARKING:

Techboard™ products complying with this report, include the following information:

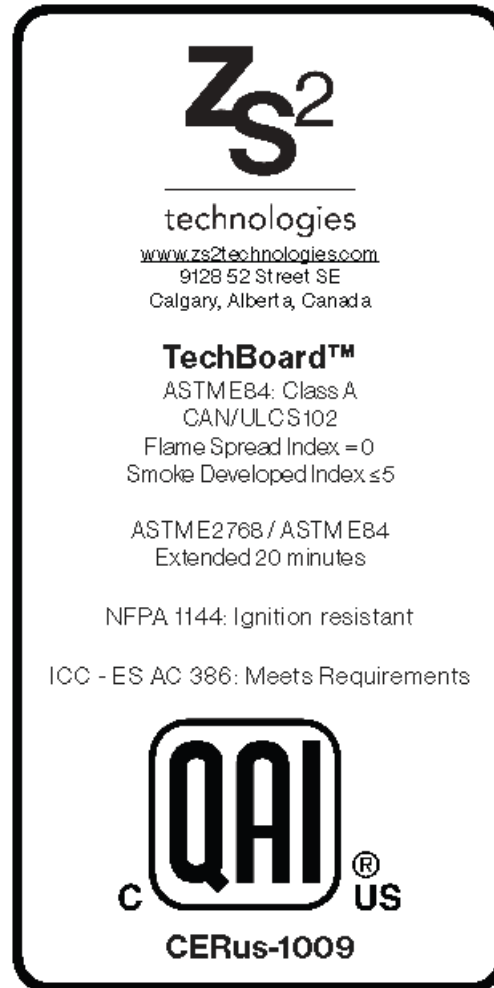


Figure 1. TechBoard™ Finished Product Label Including CERus-1009 and QAI Certification Mark



CODE EVALUATION REPORT

8.0 RESULTS / RATINGS AND DETAILS:

8.1 Allowable Load Capacities

Table 2. TechBoard™ Transverse Loading Capacities¹

NO.	MINIMUM SHEATHING	FRAMING	FASTENING	ALLOWABLE PRESSURE (psf) ²
1	½" (13 mm) TechBoard™ oriented vertically or horizontally.	Minimum 2x4 (38 mm x 89 mm) Spruce-Pine-Fir (SPF) Grade 2 or better lumber at maximum 24" (610 mm) on center.	"N"-style medium crown staples of minimum 7/16" (11 mm) crown and 1-½" (38 mm) leg. Staples are spaced at maximum 3" (76 mm) on center around the perimeter and in field of the TechBoard™ installed at ½" – ¾" (13 mm – 19 mm) edge distance.	±45
2	½" (13 mm) TechBoard™ oriented vertically or horizontally.	Minimum 2x4 (38 mm x 89 mm) SPF Grade 2 or better lumber at maximum 24" (610 mm) on center.	#8 2-½" (64 mm) length coarse thread wood screws. Screws are spaced at maximum 6" (152 mm) on center around the perimeter and in field of the TechBoard™ installed at ½" – ¾" (13 mm – 19 mm) edge distance.	±57

1. See Section 9.0 of this report for installation details.
2. Allowable racking shear load values include a Safety Factor of 3.

Table 3. TechBoard™ Racking Shear Capacities¹

NO.	MINIMUM SHEATHING	BOTTOM PLATE	TOP PLATE	FRAMING	FASTENING	MAXIMUM ASPECT RATIO	ALLOWABLE LOADING ^{1,2} (plf)
1	½" (13 mm) TechBoard™ oriented vertically.	Minimum single 2x4 (38 mm x 89 mm) SPF Grade 2 or better lumber fastened to studs with minimum two 3-1/4" (95 mm) length 12d nails.	Minimum double 2x4 (38 mm x 89 mm) SPF Grade 2 or better lumber connected with 12d common nails, 2 rows at 16" (405 mm) spacing. Top plate connected to studs with minimum two 3-1/4" (95 mm) length 12d nails.	Minimum 2x4 (38 mm x 89 mm) SPF Grade 2 or better lumber at maximum 24" (610 mm) on center.	"N"-style medium crown staples of minimum 7/16" (11 mm) crown and 1-½" (38 mm) leg. Staples are spaced at maximum 3" (76 mm) on center around the perimeter and in field of the TechBoard™ installed at ½" – ¾" (13 mm – 19 mm) edge distance.	1:1	162
2	½" (13 mm) TechBoard™ oriented vertically.	Minimum single 2x4 (38 mm x 89 mm) SPF Grade 2 or better lumber fastened to studs with minimum two 3-1/4" (95 mm) length 12d nails.	Minimum double 2x4 (38 mm x 89 mm) SPF Grade 2 or better lumber connected with 12d common nails, 2 rows at 16" (405 mm) spacing. Top plate connected to studs with minimum two 3-1/4" (95 mm) length 12d nails.	Minimum 2x4 (38 mm x 89 mm) SPF Grade 2 or better lumber at maximum 24" (610 mm) on center.	#8 2-½" (64 mm) length coarse thread wood screws. Screws are spaced at maximum 6" (152 mm) on center around the perimeter and in field of the TechBoard™ installed at ½" – ¾" (13 mm – 19 mm) edge distance.	1:1	178

1. See Section 9.0 of this report for installation details.
2. Techboard™ racking shear capacities were based off strength.
3. Allowable racking shear load values include a Safety Factor of 3.
4. No. 1 and 2 are eligible for use in both load-bearing and nonload-bearing applications in Seismic Design Categories A, B, C, D, E and F. When used in Seismic Design Categories D, E, and F, the following Seismic Design Coefficients are applied:
Response Modification Coefficient, R = 2.0 Overstrength Factor, $\Omega_0 = 2.5$ Deflection Amplification Factor $C_d = 2.0$
 - All limitations associated with this system described in ASCE 7 are to be followed.
 - Hold down devices are to be applied at the end of the shear wall assembly in accordance with the approved Engineering Design to an approved foundation.

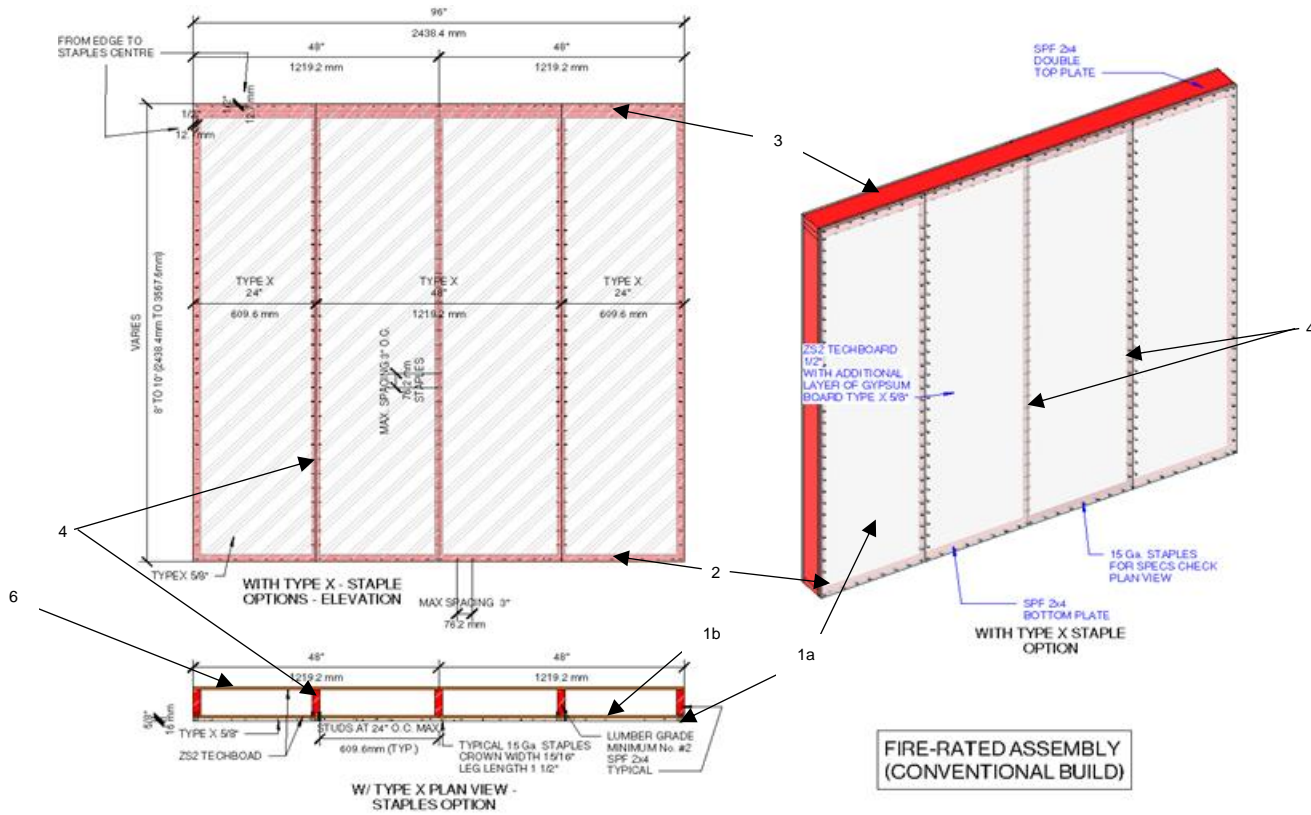


CODE EVALUATION REPORT

Table 4. TechBoard™ Foam Plastic Thermal Barrier Applications Based on Special Approval

APPROVED FOAM PLASTIC	TYPE	NOMINAL DENSITY	MAXIMUM THICKNESS
Expanded Polystyrene (EPS)	I	1.0 (lbs/ft ³) (16 kg/m ³)	6 inches (152 mm)
	VIII	1.25 (lbs/ft ³) (20 kg/m ³)	4.8 inches (122 mm)
	II	1.5 (24 kg/m ³)	4 inches (122 mm)
	IX	2.0 (32 kg/m ³)	3 inches (76 mm)

8.2 TechBoard™ Fire-Resistance Rated Assemblies



**FIRE-RATED ASSEMBLY
(CONVENTIONAL BUILD)**

Figure 2. TechBoard™ Restricted Load-Bearing¹ 1-hour Fire-Resistance Rated Wood Stud and Staple Assembly (Interior Facing Fire Only)



CODE EVALUATION REPORT

Item	COMPONENT	DESCRIPTION	
1a	Interior Finish	Type:	Single layer Type X gypsum wall board complying with ASTM C1396.
		Thickness:	Minimum 5/8 inches (16 mm).
		Installation:	The gypsum is to be anchored through the interior sheathing into the underlying framing at 8 inches (203 mm) on center around the gypsum perimeter and 12 inches (305 mm) on center spacing in the field, with minimum 2.25 inch (57 mm) length Type S drywall screws. Gypsum board joints are to be offset from Techboard™ interior sheathing joints at 24 inches (610 mm). Joints and screw heads are to be taped and mudded per industry standard.
1b	Interior Sheathing	Manufacturer:	ZS2 Inc.
		Approved Types:	Techboard™ ½" (13 mm) thickness.
		Installation:	Techboard™ is to be installed with minimum 15-gauge (1.8 mm) staples with 15/16 inch (24 mm) crown and 1.5 inch (38 mm) leg length. Staples are to be installed at maximum 3 inches (76 mm) spacing around the perimeter and in the field, maintaining minimum edge distances of ½ inch (13 mm).
2	Sill (Bottom) Plate	Type:	Single minimum nominal 2-inch x 6-inch (38 mm x 140 mm) lumber Spruce-Pine-Fir Grade #2.
		Installation:	Sill plate is to be attached to framing members with minimum two (2) 3-1/2 inch (89 mm) length 12D common nails at each framing member location.
3	Top Plate	Type:	Double minimum nominal 2 inch x 6 inch (38 mm x 140 mm) lumber Spruce-Pine-Fir Grade #2.
		Installation:	Lower top plate is to be attached to framing members with minimum two (2) 3-1/4 inch (83 mm) length 12D common nails at each framing member location. Upper top plate is to be attached to the lower plate with minimum 2.5 inch (64 mm) length common nails at 12 inch on center spacing staggered along length of the upper plate.
4	Framing	Type:	Minimum nominal 2 inch x 6 inch (38 mm x 140 mm) lumber Spruce-Pine-Fir Grade #2.
		Installation:	Framing members are to be installed to sill and top plate as described above, at maximum 24 inch (610 mm) on center spacing. Lumber is to bear the logo of an approved grading agency.
5	Optional Insulation (Not Shown)	Type:	Fiberglass batt, mineral wool, expanded polystyrene Type I per ASTM C578.
		Specifications:	Fiberglass batt and mineral wool are to comply with the applicable code. EPS is to comply with Type I specifications of ASTM C578 of maximum 1.0 lbs/ft ³ (16.0 kg/m ³) density, with a maximum flame spread index of 25 and maximum smoke development of 450 determined in accordance with ASTM E84 or UL 723. EPS is to bear the mark of an approved agency.
		Installation:	Insulation installation is to be in accordance with the insulation manufacturer's recommendations, and good insulation practice friction fit into the stud cavity.
6	Exterior Sheathing	Manufacturer:	ZS2 Inc.
		Approved Types:	Techboard™ ½" (13 mm) thickness.
		Installation:	Techboard™ is to be installed with minimum 15-gauge (1.8 mm) staples with 15/16 inch (24 mm) crown and 1.5 inch (38 mm) leg length. Staples are to be installed at maximum 3 inches (76 mm) spacing around the perimeter and in the field, maintaining minimum edge distances of ½ inch (13 mm).
7	Cladding (Not Shown)	Type:	Cladding is to comply with the applicable code for intended use.
		Installation:	Installation shall be in accordance with the applicable code, and the cladding manufacturer's installation instructions. Cladding anchoring is to penetrate the exterior sheathing into the underlying framing members and not rely on the exterior sheathing for resistance.

Note 1: Note 1: Where used in load-bearing fire-resistance rated applications, maximum applied load is restricted to 82% Load and Resistance Factor Design (LRFD) design load determined in accordance with the NDS. Where loads are calculated in accordance with alternate methodology, the appropriate load adjustments are required.

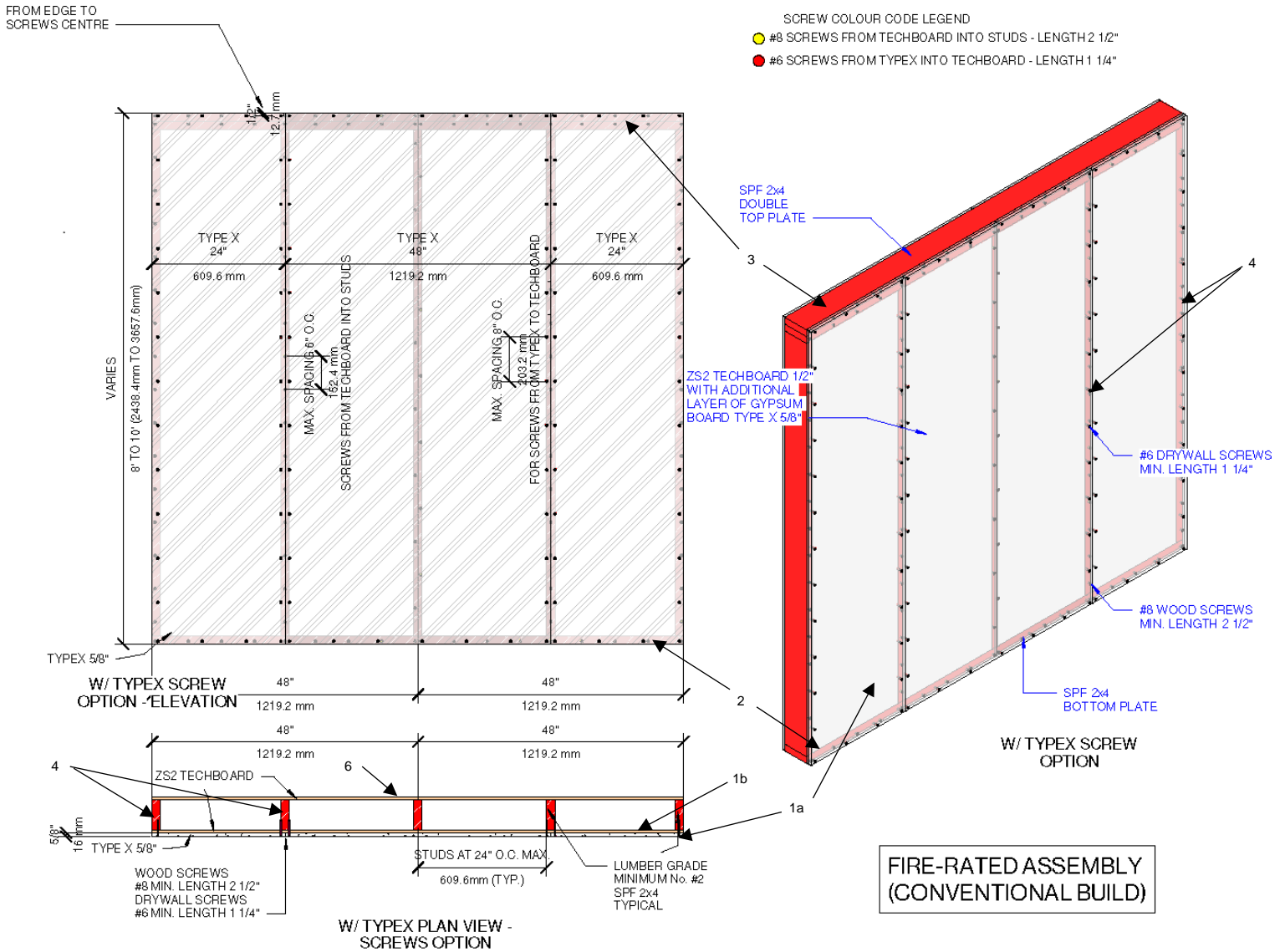


Figure 3. TechBoard™ Restricted Load-Bearing¹ 1-hour Fire-Resistance Rated Wood Stud and #8 Coarse Thread Wood Screw Assembly (Interior Facing Fire Only)

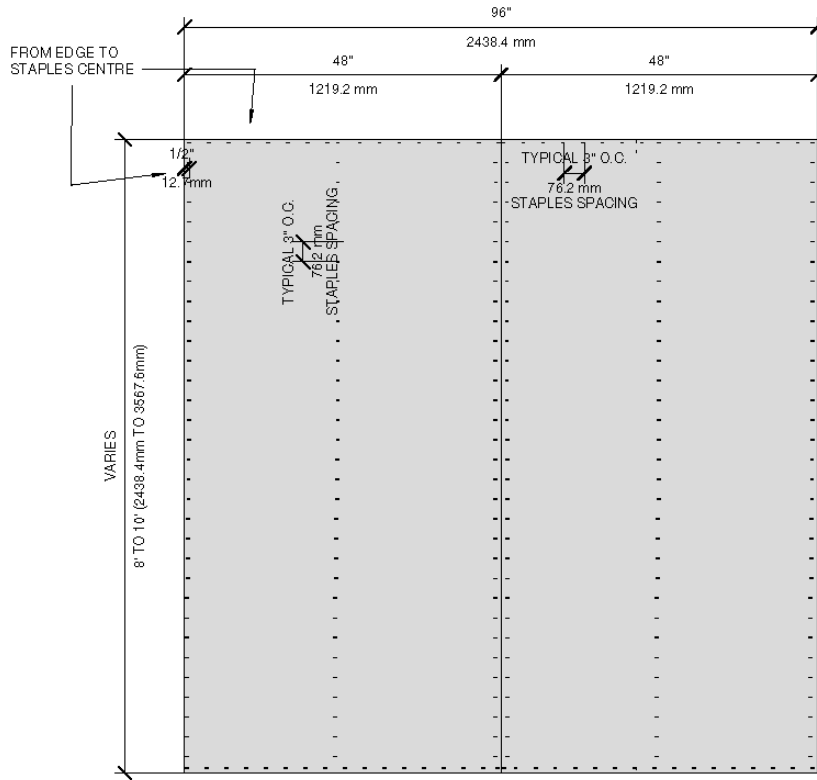


CODE EVALUATION REPORT

Item	COMPONENT	DESCRIPTION	
1a	Interior Finish	Type:	Single layer Type X gypsum wall board complying with ASTM C1396.
		Thickness:	Minimum 5/8 inches (16 mm).
		Installation:	The gypsum is to be anchored through the interior sheathing into the underlying framing at 8 inches (203 mm) on center around the gypsum perimeter and 12 inches (305 mm) on center spacing in the field, with minimum 2.25 inch (57 mm) length Type S drywall screws. Gypsum board joints are to be offset from Techboard™ interior sheathing joints at 24 inches (610 mm). Joints and screw heads are to be taped and mudded per industry standard.
1b	Interior Sheathing	Manufacturer:	ZS2 Inc.
		Approved Types:	Techboard™ ½" (13 mm) thickness.
		Installation:	Techboard™ is to be installed with minimum #8 2.5-inch (64 mm) length coarse thread wood screws. Screws are to be installed at maximum 8 inches (204 mm) spacing around the perimeter and in the field, maintaining minimum edge distances of ½ inch (13 mm).
2	Sill (Bottom) Plate	Type:	Single minimum nominal 2 inch x 6 inch (38 mm x 140 mm) lumber Spruce-Pine-Fir Grade #2.
		Installation:	Sill plate is to be attached to framing members with minimum two (2) 3-1/2 inch (89 mm) length 12D common nails at each framing member location.
3	Top Plate	Type:	Double minimum nominal 2 inch x 6 inch (38 mm x 140 mm) lumber Spruce-Pine-Fir Grade #2.
		Installation:	Lower top plate is to be attached to framing members with minimum two (2) 3-1/4 inch (83 mm) length 12D common nails at each framing member location. Upper top plate is to be attached to the lower plate with minimum 2.5 inch (64 mm) length 6D common nails at 12 inch on center spacing staggered along length of the upper plate.
4	Framing	Type:	Minimum nominal 2 inch x 6 inch (38 mm x 140 mm) lumber Spruce-Pine-Fir Grade #2.
		Installation:	Framing members are to be installed to sill and top plate as described above, at maximum 24 inch (610 mm) on center spacing. Lumber is to bear the logo of an approved grading agency.
5	Optional Insulation (Not Shown)	Type:	Fiberglass batt, mineral wool, expanded polystyrene Type I per ASTM C578.
		Specifications:	Fiberglass batt and mineral wool are to comply with the applicable code. EPS is to comply with Type I specifications of ASTM C578 of maximum 1.0 lbs/ft ³ (16.0 kg/m ³) density, with a maximum flame spread index of 25 and maximum smoke development of 450 determined in accordance with ASTM E84 or UL 723. EPS is to bear the mark of an approved agency.
		Installation:	Insulation installation is to be in accordance with the insulation manufacturer's recommendations, and good insulation practice friction fit into the stud cavity.
6	Exterior Sheathing	Manufacturer:	ZS2 Inc.
		Approved Types:	Techboard™ ½" (13 mm) thickness.
		Installation:	Techboard™ is to be installed with minimum #8 2.5 inch (64 mm) length coarse thread wood screws. Screws are to be installed at maximum 8 inches (204 mm) spacing around the perimeter and in the field, maintaining minimum edge distances of ½ inch (13 mm).
7	Cladding (Not Shown)	Type:	Cladding is to comply with the applicable code for intended use.
		Installation:	Installation shall be in accordance with the applicable code, and the cladding manufacturer's installation instructions. Cladding anchoring is to penetrate the exterior sheathing into the underlying framing members and not rely on the exterior sheathing for resistance.

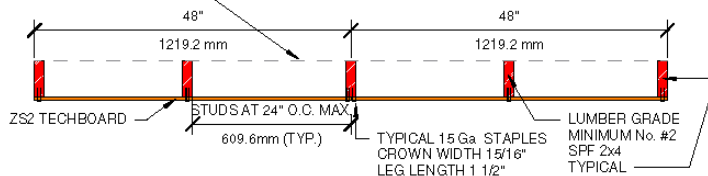
Note 1: Note 1: Where used in load-bearing fire-resistance rated applications, maximum applied load is restricted to 82% Load and Resistance Factor Design (LRFD) design load determined in accordance with the NDS. Where loads are calculated in accordance with alternate methodology, the appropriate load adjustments are required.

9.0 TechBoard™ Product Installation Details

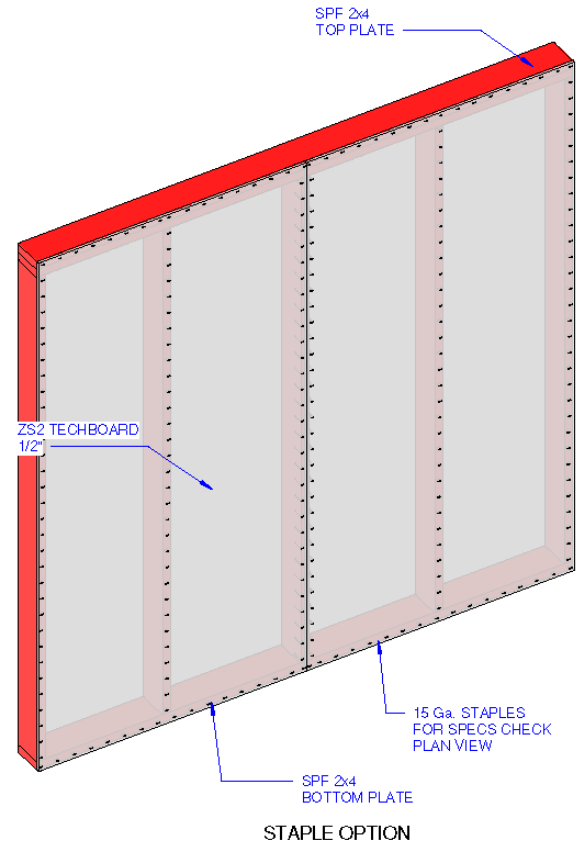


INTERIOR FINISH AND STUD INSULATION NOT SHOWN AND TO BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE CODE

STAPLE OPTIONS - ELEVATION



PLAN VIEW - STAPLES OPTION



STAPLE OPTION

Figure 4. TechBoard™ Wood Stud and Staple Installation Detail

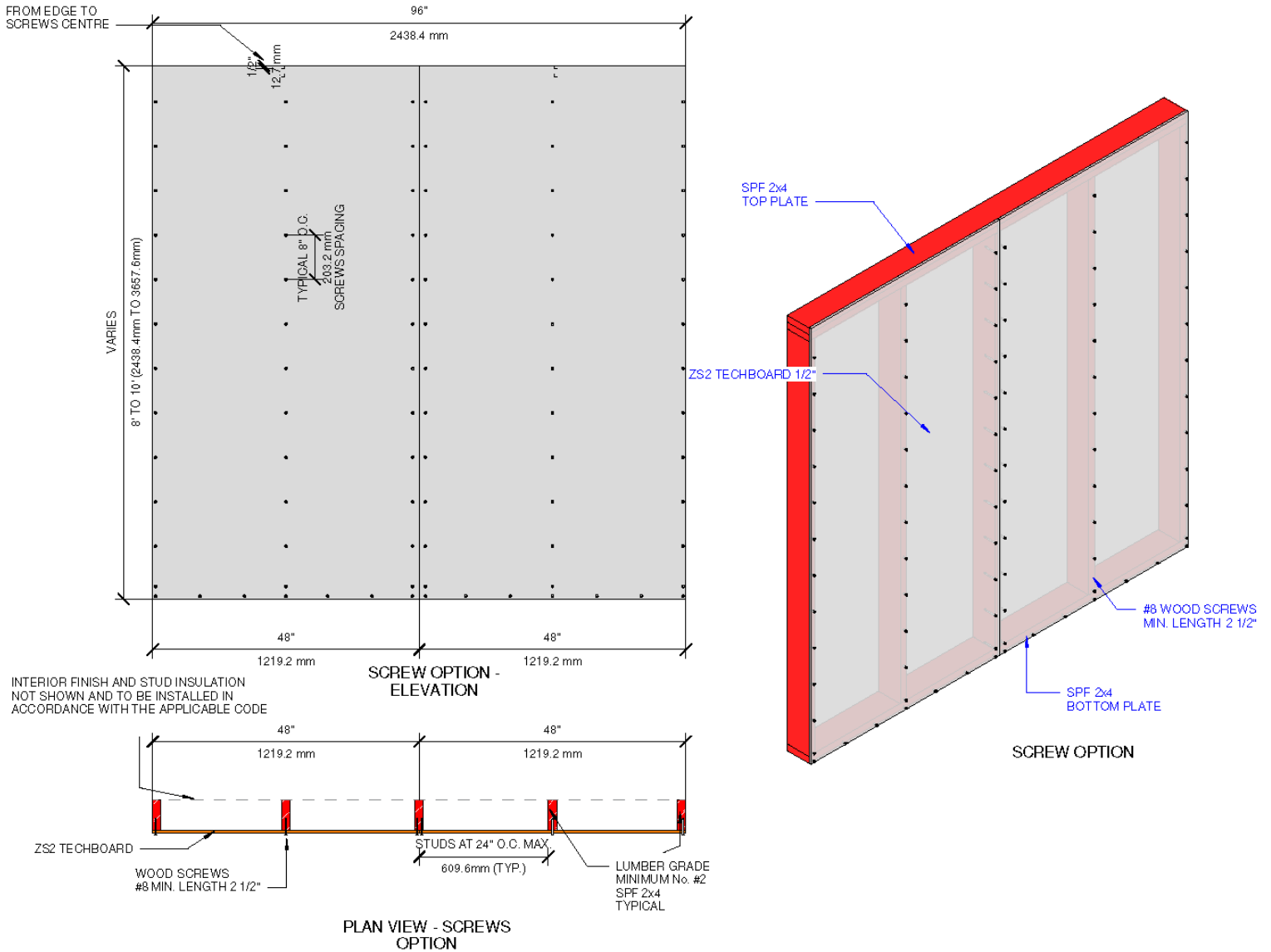


Figure 5. Techboard™ Wood Stud and #8 Coarse Thread Wood Screw Installation Detail

10.0 ELIGIBILITY OF REPORT

QAI's Code Evaluation Report complies with the 2021 / 2018 / 2015 IBC Section 104.11 *Alternative materials, design and methods of construction and equipment* subsection 104.11.1 *Research Reports*. Supporting data has been evaluated by QAI for compliance of the noted materials and assemblies to the applicable code by QAI, and *approved* source as detailed below.

The attached report has been reviewed by a QAI Registered Professional Engineer approved by the specific state Board of Professional Engineers noted on the specific P.E. seal(s).

Per section 1703 of the IBC, QAI is an independent third-party testing, inspection and certification agency accredited by the International Accreditation Service, Inc. (IAS) for this specific scope (see IAS PCA-118, PCA-119). QAI can confirm that based on its IAS accreditation it meets IBC Section 1703.1 on Independence, Section 1703.1.2 on Equipment and Section 1703.1 on Personnel.

This Evaluation report has been designed to meet the performance requirements of IBC Section 1703.4 and contains the required information to show the product, material or assembly meets the applicable code requirements.

The product is labeled per section IBC 1703 and subject to follow-up inspection per IBC 1703.6 using QAI IAS accredited ISO 17020 inspection program (see IAS AA-635, AA-723).

For more information regarding QAI Laboratories, please visit www.qai.org.



The above is an example of the QAI registered Listing mark. The Listing mark may only be used by the Report Holder per the QAI service agreement on products defined in this report. The 'us' indicator in the 8 o'clock position indicates the product complies with the properties evaluated with limitations outlined in this report for use in the US market. A 'c' indicator in the 4 o'clock position indicates the product has been evaluated for use in the Canadian market.

11.0 REFERENCED STANDARDS

ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials.*

ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials.*

ASTM E72 *Standard Test Methods of Conducting Strength tests of Panels for Building Construction.*

ASTM E2126 *Standard Test Methods for Cyclic (Reversed) Load Test For Shear Resistance of Vertical Elements of the Later Force Resisting Systems for Buildings.*

NFPA 1144 *Standard for Reducing Structure Ignition Hazards from Wildland Fire.*

ASCE 7 *Minimum Design Loads and Associated Criteria for Buildings and Other Structures.*