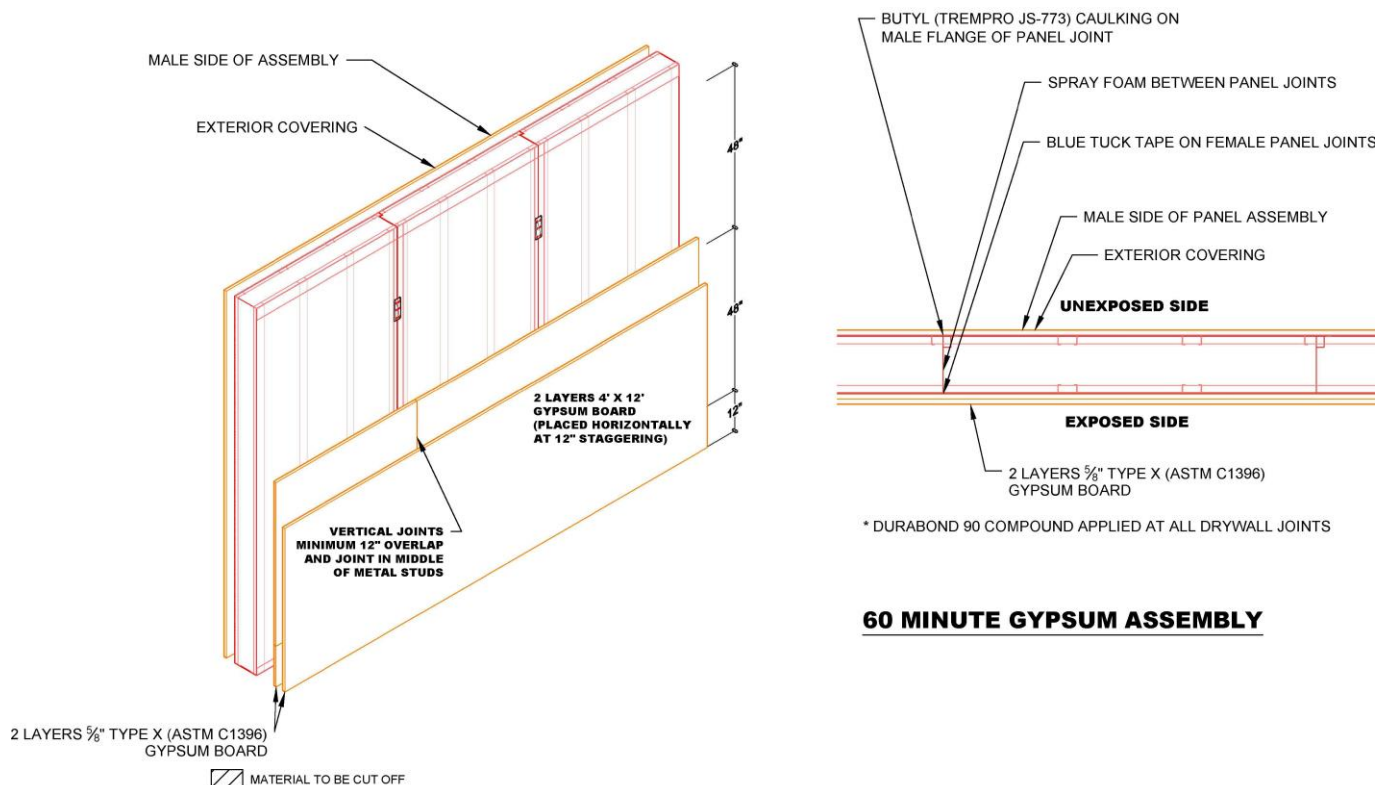


**QAI Design B1122-1a – Greenstone Building Products Ltd. – CAN/ULC-S101 / ASTM E119  
1 Hour Fire-Resistance Rated Load Bearing<sup>1</sup> Prefabricated Wall Assembly – Interior Facing Fire**



COMPONENT	DESCRIPTION	
Wall Assembly	Manufacturer:	Greenstone Insulated Composite Envelope (ICE) Panel.
	Minimum Thickness:	7.5 in. (191 mm).
	Installation Description:	ICE panels installed with 2 layers of 5/8 in. (16 mm) Type X gypsum on interior panel face. Panel connections to top track, bottom track and adjacent panels per Greenstone Connection details manual and this report. Exterior coverings as outlined below.
Wall Stud <sup>1</sup>	Minimum 20 Ga (1.25 mm <sup>1</sup> ) x 2-1/2 in. (64 mm) x 1-3/16 in. (30 mm) steel C-channel wall studs. The end studs at the joint have a 1/8 in. (3 mm) x 1 in. (25 mm) jog in the channel along the 2-1/2 in. (64 mm) dimension. Studs are to be spaced at maximum 16 in. (406 mm) on center (OC).	
Top Track <sup>1</sup>	Minimum 16 Gauge (1.65 mm) x 3-1/2 in. (89 mm) x 1-1/4 in. (32 mm) J-shaped steel channel with a 1/2 in. (13 mm) return. Fastened to the wall studs with #10x3/4 in. length (19 mm) self-tapping pan head screws.	
Bottom Track <sup>1</sup>	Minimum 2 in. (51 mm) x 2 in. (51 mm) steel angle shall be placed underneath the bottom track on both sides of the wall. Fastened to each stud with one #10x3/4 in. (19 mm) length self-tapping pan head screw.	
Connection Plates <sup>1</sup>	Minimum 18 Gauge (1.25 mm) x 6 in. (152 mm) x 2 in. (51 mm) steel plates fastened using six #10 x 3/4 in. (19 mm) self-tapping pan head screws. The plates are to be placed at maximum 2 ft (610 mm) starting 6 in. (152 mm) from panel top.	

<b>Foam Insulation</b>	Type:	Type 2 (Type II) Expanded Polystyrene (EPS) per CAN/ULC S701 / ASTM C578, listed by approved agency.
	Density:	1.65 lbs/ft <sup>3</sup>
<b>Interior Sheathing</b>	Type:	2 layers of Type X gypsum board compliant with ASTM C1396, listed by approved agency.
	Minimum Thickness:	5/8 in. (16 mm).
	Installation:	Installation is horizontal, with joints staggered a minimum 12 inches (304 mm) between layers.
	Fastener Detail:	Both layers are to be fastened at maximum 8 in. (203 mm) OC around the perimeter and in the field. The first layer is to be fastened using #6 x 1-1/4 in. (32 mm.) Type S drywall screws. The second layer shall be fastened using #6 x 2 in. (51 mm) Type S drywall screws. All screw heads are to be covered with code compliant drywall compound. Interior (2 <sup>nd</sup> layer) exposed joints to be taped and mudded per industry standard.
<b>Exterior Coverings<sup>4</sup></b>	Type:	Exterior Coverings of the Following Types: <ul style="list-style-type: none"> <li>• Fiber-cement, minimum ¼ inch (6 mm) thickness meeting ASTM C1186 Type A Grade II.</li> <li>• Cementitious stucco installed in accordance ASTM C926 or in accordance with the local building code per site.</li> <li>• Exterior Gypsum complying with ASTM C1177 of minimum ½ inch (13 mm) thickness.</li> <li>• Exposure 1 rated oriented strand board (OSB) or plywood of minimum 3/8 inch (11 mm) thickness or per Engineering Design.</li> <li>• Metal claddings complying with 2018 / 2015 International Building Code Table 1405.2 or 2015 National Building Code of Canada, or per Engineering Design.</li> </ul>
	Fastener Detail:	Exterior cladding materials are to be installed in accordance with site designs to resist the anticipated loads per the Engineering Design, or as approved by the Authority Having Jurisdiction.

Notes:

1. The maximum allowable loading for the fire-resistance rated assembly is 50% of the allowable calculated per AISI S100 or CSA S136 based on Load and Factor Reduction (LRFD) methodology.
2. All steel materials shall be size determined in accordance with CSA S136 or AISI S100 for anticipated service loading, with minimum Gauges and dimensions noted above required for fire-resistance rating.
3. The listed assembly is evaluated for interior fire only.
4. Exterior coverings shall not considered as load-bearing elements when used in fire-resistance rated applications. Consideration of structural capacity for resisting wind and seismic forces is outside the scope of this listing. Connection details for resisting anticipated service loadings are to be determined in accordance with the applicable code and approved by the authority having jurisdiction.