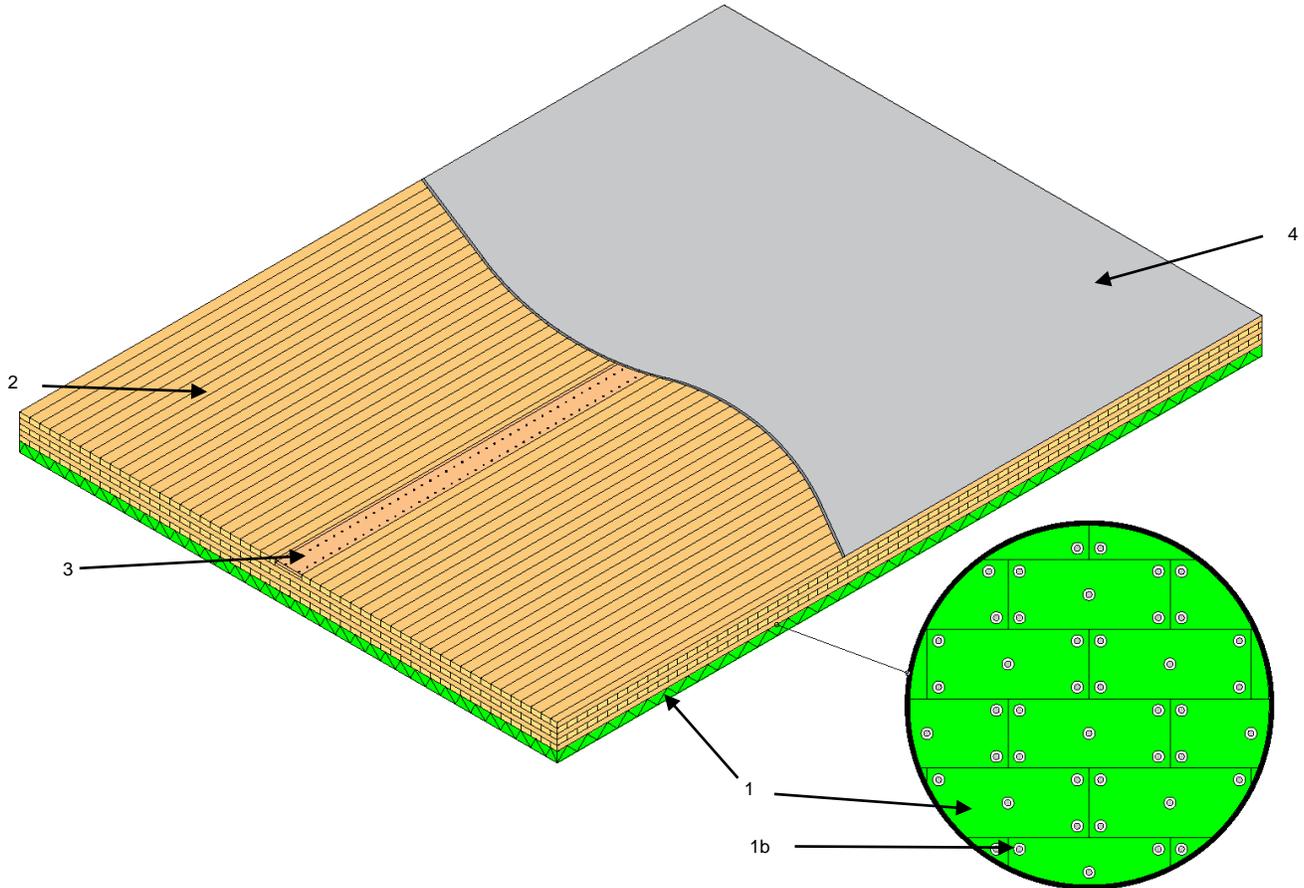


**QAI Design B1067-1j – ROXUL INC. dba ROCKWOOL – UNRESTRAINED AND RESTRICTED LOAD BEARING<sup>1</sup> FLOOR/CEILING AND MASS TIMBER PROTECTION**

STANDARDS	RATINGS
ASTM E119 / CAN/ULC S101	4-Hour Unrestrained Restricted Load Bearing (82%) <sup>1</sup>
CAN/ULC S146	≥ 50-minutes Encapsulation Rating <sup>2</sup>
2021 International Building Code Section 703.6 Referencing ASTM E119	80-minutes Noncombustible Protection Time <sup>2</sup>



No.	COMPONENT	DESCRIPTION						
1	Mineral Board Insulation	Type: Comfortboard® 80 or Comfortboard® 110 of minimum nominal 8 lbs/ft <sup>3</sup> (128 kg/m <sup>3</sup> ) density.						
		Minimum Thickness:						
		Installation:						
		<table border="1"> <thead> <tr> <th>ASTM E119 / CAN/ULC S101 Fire-Resistance Rating</th> <th>Noncombustible Protection Rating Section 703.6 IBC</th> <th>Encapsulation Rating per CAN/ULC S146</th> </tr> </thead> <tbody> <tr> <td>3-inches (76 mm).</td> <td>3-inches (76 mm).</td> <td>4-inches (102 mm)</td> </tr> </tbody> </table>	ASTM E119 / CAN/ULC S101 Fire-Resistance Rating	Noncombustible Protection Rating Section 703.6 IBC	Encapsulation Rating per CAN/ULC S146	3-inches (76 mm).	3-inches (76 mm).	4-inches (102 mm)
ASTM E119 / CAN/ULC S101 Fire-Resistance Rating	Noncombustible Protection Rating Section 703.6 IBC	Encapsulation Rating per CAN/ULC S146						
3-inches (76 mm).	3-inches (76 mm).	4-inches (102 mm)						
		<p>Comfortboard® can be installed as a single layer or as multiple layers to a minimum total thickness ≥ 3-inches (76 mm) for fire-resistance ratings and noncombustible protection ratings. Total installed thickness of a single layer or as multiple layers is to be a minimum of ≥ 4-inches (102 mm) for encapsulation ratings per CAN/ULC S146.</p> <p>Single Layer: Joints are to be pressed tight at time of insulation to remove gaps between boards. Rows of boards have joints offset.</p> <p>Multiple Layers: Layers are to have joints offset a minimum of 12-inches (305 mm) between layers.</p>						

1b	Fastener	Type:	Steel fasteners paired with steel washers or plates.
		Minimum Size:	2-inches (51 mm) diameter of sufficient length for 2-inch (51 mm) penetration.
		Installation:	Minimum of five (5) washers evenly distributed across the Comfortboard® is required for anchoring. A suggested installation pattern is shown. Fastening with additional fasteners is permitted where the fasteners are uniformly distributed to retain the Comfortboard® in a fire event. Consult Rockwool's Fastening Guidelines for more information.
2	Mass Timber	Type:	<b>ASTM E119 4-hour Assembly:</b> 5-ply Cross-Laminated Timber (CLT) complying with ANSI/APA PRG-320 specifications and listed by an approved agency. <b>Encapsulation Rating:</b> Mass timber elements complying with the National Building Code of Canada or Provincial governing codes. <b>Noncombustible Protection Time:</b> Mass timber elements complying with the 2021 International Building Code or state governing codes.
		Minimum Thickness:	<b>ASTM E119 4-hour assembly:</b> 5-ply CLT of minimum 6-7/8 inches (175 mm) depth. <b>Encapsulation Rating:</b> Per engineering design. <b>Noncombustible Protection Time:</b> Per engineering design.
		Installation:	Installation is to be in accordance with the local codes and engineering design where applicable and is outside the scope of this listing. Sealing of adjacent mass timber elements is to be in accordance with the local governing code requirements.
3	Spline	Type:	Plywood spline.
		Minimum Size:	7-3/4-inch width x 3/4-inch thickness (197 mm width x 76 mm thickness).
		Installation:	Plywood spline is to be installed with fasteners of 4-inches (102 mm) length spaced at maximum 6-inches (152 mm) on center spacing for connection adjacent panels. The spline is to be adhered into the CLT panel mortise cutouts with subfloor adhesive and sealant at time of installation.
4	Subfloor / Floor Covering	Type:	Any approved subfloor or floor covering can be installed while maintaining the fire resistance rating. Installation of the subfloor and floor covering is to be in accordance with the governing code with consideration to protection of the mass timber element.

Note 1: The above floor / ceiling assembly is limited to 82% design load determined in accordance with the National Design Specification, based off Load Resistance Factor Design (LRFD) methodology when used in fire-resistance rated applications. Determination of the appropriate load restriction for jurisdictions adopting allowable stress design, or limit state design is required.

Note 2: Encapsulation Rating and Noncombustible Protection Time apply for installations protecting floor / ceiling mass timber elements (shown), and walls, columns and beams where installed in accordance with items 1b shown above.

