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PRODUCT: ROCKWOOL Mineral Fiber Thermal Insulation of the following Types:

- COMFORTBATT®
- COMFORTBOARD® 80
- COMFORTBOARD® 110
- TOPROCK® DD
- MULTIFIX™

REPORT HOLDER: ROXUL INCORPORATED.

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CSI DIVISION: Thermal and Moisture Protection

CSI SECTION: 07 21 00 – Thermal Insulation
07 22 00 – Roof and Deck Insulation

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

EVALUATED: Thermal Insulation – Physical Performance
Surface Burning Characteristics
Fire-resistance Rated Construction
Non-Combustibility
Noncombustible Protection Time for Mass Timber



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CODE EVALUATION REPORT

1.0 APPROVED FOR FOLLOWING:

APPROVED TYPES OF CONSTRUCTION:	Type IAB, Type IIAB, Type IIIAB, Type IV, Type VAB
APPROVED USE:	Thermal insulation for use in walls, floors ceilings and roofs in Types I-V construction. Noncombustible Protection Rating for Mass Timber Elements.
APPROVED INSTALLATIONS:	<ul style="list-style-type: none"> • Bearing and non-load bearing exterior and interior walls. • Floors / ceilings. • Roofs including fire-classified roof assemblies. • Attics and Crawlspace as an ignition barrier.

2.0 DESCRIPTION:

2.1 General:

ROCKWOOL Comfortbatt®, Comfortboard® 80, Comfortboard® 110, Toprock® DD, and Multifix™ products are mineral wool type, thermal insulation as defined by the 2021 / 2018 / 2015 IBC. The products are installed on the site as outlined in this report, and function as a non-structural thermal insulation component of the finished wall, floor, ceiling or roof assembly.

ROCKWOOL Comfortbatt®, Comfortboard® 80, Comfortboard® 110, Toprock® DD, and Multifix™ products are classified as non-combustible through evaluation to ASTM E136 as defined by the 2021 / 2018 / 2015 IBC and 2021 / 2018 / 2015 IRC.

ROCKWOOL Comfortboard® 80, Comfortboard® 110 products provide a noncombustible protection time of 40 minutes at 1.5-inch (38 mm) thickness and 80-minutes at 3-inch (76 mm) thickness for the protection of mass timber as specified in the 2021 IBC Section 703.6, when installed in accordance with Section 4.6 and Section 8.3 of this report.

ROCKWOOL Comfortbatt®, Comfortboard® 80, Comfortboard® 110, Toprock® DD, and Multifix™ products are available in the following options:

Table 1. ROCKWOOL COMFORTBATT®, COMFORTBOARD® 80, COMFORTBOARD® 110, TOPROCK® DD, AND MULTIFIX™ PRODUCT OPTIONS¹

PRODUCT		LENGTH		WIDTH		THICKNESSES	
		inches	mm	inches	mm	inches	mm
Comfortbatt®	Wood Stud	47	1193	15.25, 23	387, 584	3.5, 5.5, 7.25, 9.5	89, 140, 184, 241
	Steel Stud	48	1219	16.25, 24.25	413, 616	2.5, 3.5, 6, 7.25, 8	64, 89, 152, 184, 203
Comfortboard® 80		48	1219	24, 36, 48, 72, 96	610, 914, 1219, 1829, 2438	1 – 5 @ ½ inch increments	25- 127 @ 13 mm increments
Comfortboard® 110		48	1219	24, 36, 48, 72, 96	610, 914, 1219, 1829, 2438	1 – 5 @ ½ inch increments	25- 127 @ 13 mm increments
Toprock® DD		48	1219	48	1219	2 – 6 @ ½ inch increments	51- 152 @ 13 mm increments
Multifix™		48	1219	48	1219	2 – 4 @ ½ inch increments	51- 104 @ 13 mm increments

Note 1: Additional product options are available from ROCKWOOL for the products listed above on request.



2.2 PRODUCTS

2.2.1 COMFORTBATT®: Comfortbatt® mineral wool thermal insulation, is of minimum density 1.8 lbs/ft³ (28.8 kg/m³). The product is a semi-rigid thermal insulation for friction fit installation in steel stud and wood stud cavities. Comfortbatt® has a flame spread index of 25 or less and smoke development index of 50 or less when evaluated to ASTM E84, meeting a Class A interior finish rating per Section 803.1.1 of the 2021 / 2018 / 2015 IBC, and is approved for use in within plenums where exposed to airflow as required by Section 602.2.1 of the IMC 2018 / 2015. Comfortbatt® is classified as noncombustible and is approved for use as interior insulation. Applications include use in Fire-resistance rated assemblies as outlined in Sections 4.4 and 8.2 of this report.

Comfortbatt® is a Type I mineral wool batt insulation complying with ASTM C665.

Thermal resistance values for Comfortbatt® can be found in Section 8.1 of this report.

2.2.2 COMFORTBOARD® 80: Comfortboard® 80 mineral wool thermal insulation, is of nominal density 8 lbs/ft³ (128 kg/m³) and has a minimum compressive resistance at 10% deformation of 2.3 psi (332 lbs/ft² / 15.9 kPa). Comfortboard® 80 has a flame spread index of 25 or less and smoke development index of 50 or less when evaluated to ASTM E84, meeting a Class A interior finish rating per Section 803.1.1 of the 2021 / 2018 / 2015 IBC, and is approved for use in within plenums where exposed to airflow as required by Section 602.2.1 of the IMC 2021 / 2018 / 2015. Comfortboard® 80 is classified as noncombustible and is approved for use as interior insulation, exterior insulation above grade, exterior insulation below grade around the foundation perimeter, and as under concrete slab when used within compressive limits noted above.

Comfortboard® 80 is a Type IVB Category 2 mineral wool insulation board, complying with ASTM C612.

Comfortboard® 80 is approved for use as a thermal insulation component in vaulted and cathedral ceilings of wood framed construction under the 2021 / 2018 / 2015 IRC.

Thermal resistance values for Comfortboard® 80 can be found in Section 8.1 of this report.

2.2.3 COMFORTBOARD® 110: Comfortboard® 110 mineral wool thermal insulation, is of nominal density 11 lbs/ft³ (176 kg/m³) and has a minimum compressive resistance at 10% deformation of 4.1 psi (590 lbs/ft² / 28.3 kPa). Comfortboard® 110 has a flame spread index of 25 or less and smoke development index of 50 or less when evaluated to ASTM E84, meeting a Class A interior finish rating per Section 803.1.1 of the 2021/ 2018 / 2015 IBC, and is approved for use in within plenums where exposed to airflow as required by Section 602.2.1 of the IMC 2021 / 2018 / 2015. Comfortboard® 110 is classified as noncombustible and is approved for use as interior insulation, exterior insulation above grade, exterior insulation below grade around the foundation perimeter, and as under concrete slab when used within compressive limits noted above.

Comfortboard® 110 is a Type IVB Category 2 mineral wool insulation board, complying with ASTM C612.

Comfortboard® 110 is approved for use as a thermal insulation component in vaulted and cathedral ceilings of wood framed construction under the 2021 / 2018 / 2015 IRC.

Thermal resistance values for Comfortboard® 110 can be found in Section 8.1 of this report.



2.2.4 TOPROCK® DD: Toprock® DD mineral wool thermal insulation, is dual density uncoated insulation board for exterior flat and low-slope roofing applications. The product's top layer is of nominal density 13.75 lbs/ft³ (220 kg/m³) and bottom layer is of nominal density 9.75 lbs/ft³ (156 kg/m³) and has a minimum compressive resistance at 10% deformation of 10.9 psi (1566 lbs/ft² / 75 kPa). Toprock® DD has a flame spread index of 25 or less and smoke development index of 50 or less when evaluated to ASTM E84, meeting a Class A interior finish rating per Section 803.1.1 of the 2021 / 2018 / 2015 IBC. Toprock® DD is classified as noncombustible and can be considered the non-combustible substrate (deck), when used as part of a fire-classified roof assembly evaluated in accordance with ASTM E108 as required in Section 1505 of the 2021 / 2018 / 2015 IBC and R902 of the 2021 / 2018 / 2015 IRC. The roof deck assembly incorporating Toprock® DD that have met the requirements of UL 1256 comply with Section 1508.1 of the 2021 / 2018 / 2015 IBC and Section R906.1 of the 2021 / 2018 / 2015 IRC. The anchorage of exterior roof coverings are to be to the underlying deck structure and not rely on Toprock® DD for anchorage capacity.

Toprock® DD is a Type I Class I mineral fiber insulation board complying with ASTM C726 for use in roofing applications in accordance with Section 1508.2 of the 2021 / 2018 / 2015 IBC.

Thermal resistance values for Toprock® DD can be found in Section 8.1 of this report.

2.2.5 MULTIFIX™: Multifix™ mineral wool thermal insulation, is dual density glass fiber coated insulation board for flat and low-slope roofing applications. The product's top layer is of nominal density 13.75 lbs/ft³ (220 kg/m³) and bottom layer is of nominal density 9.75 lbs/ft³ (156 kg/m³) and has a minimum compressive resistance at 10% deformation of 10.9 psi (1566 lbs/ft² / 75 kPa). Multifix™ has a flame spread index of 25 or less and smoke development index of 50 or less when evaluated to ASTM E84, meeting a Class A interior finish rating per Section 803.1.1 of the 2021 / 2018 / 2015 IBC. MULTIFIX™ is considered the non-combustible substrate (deck), when used as part of a fire-classified roof assembly evaluated in accordance with ASTM E108 as required in Section 1505 of the 2021 / 2018 / 2015 IBC and R902 of the 2021 / 2018 / 2015 IRC. The roof deck assembly incorporating MULTIFIX™ that have met the requirements of UL 1256 comply with Section 1508.1 of the 2021 / 2018 / 2015 IBC and Section R906.1 of the 2021 / 2018 / 2015 IRC. Anchorage of exterior roof coverings are to be to the underlying deck structure, and not rely on Multifix™ for anchorage capacity.

Multifix™ is a Type I Class I mineral fiber insulation board complying with ASTM C726 for use in roofing applications in accordance with Section 1508.2 of 2021 / 2018 / 2015 IBC.

Thermal resistance values for Multifix™ can be found in Section 8.1 of this report.

3.0 DESIGN:

ROCKWOOL Comfortbatt®, Comfortboard® 80, Comfortboard® 110, Toprock® DD, and Multifix™ mineral wool products are non-structural elements of approved wall, floor, ceiling, or roof assembly. The use of these products as thermal insulation building elements does not require design and is to be in accordance with the applicable code.



4.0 INSTALLATIONS:

4.1 General:

Installation of ROCKWOOL Comfortbatt®, Comfortboard® 80, Comfortboard® 110, Toprock® DD, and Multifix™ products must comply with the manufacturer's published installation instructions, this report, and the applicable code(s). Where conflicts exist, this report and the applicable building code shall govern.

4.1.1 Special Inspection:

Use of ROCKWOOL Comfortbatt®, Comfortboard® 80, Comfortboard® 110, Toprock® DD, and Multifix™ do not require special inspection.

4.2 Interior:

4.2.1.1 COMFORTBATT®: Comfortbatt® has a Class A interior finish rating and can be left exposed to occupancy after installation. Comfortbatt® is intended for friction fit application, for placement between studs and joists filling the cavity. Installation Comfortbatt® is not to be considered for resisting transverse or racking shear loading for the underlying wall assembly.

Comfortbatt® installed in the wall or roof cavity is considered a thermal component in the overall thermal performance of the assembly. Dew point consideration for this product installation is advised.

4.2.1.2 COMFORTBOARD® 80: Comfortboard® 80 has a Class A interior finish rating and can be left exposed to occupancy after installation. Comfortboard® 80 is required to be anchored with fasteners into underlying framing members, with fasteners required to be of sufficient capacity to resist gravity loads of the insulation weight. Installation of Comfortboard® 80 is not to be considered for resisting transverse or racking shear loading for the underlying wall assembly.

Comfortboard® 80 when installed on the interior surface can be considered in the overall thermal performance of the wall assembly. Dew point consideration for installation of this product is advised.

4.2.1.3 COMFORTBOARD® 110: Comfortboard® 110 has a Class A interior finish rating and can be left exposed to occupancy after installation. Comfortboard® 110 is required to be anchored with fasteners into underlying framing members, with fasteners required to be of sufficient capacity to resist gravity loads of the insulation weight. Installation of Comfortboard® 110 is not to be considered for resisting transverse or racking shear loading for the underlying wall assembly.

Comfortboard® 110 installed on the interior can be considered in the overall thermal performance of the wall assembly. Dew point consideration for this product installation is advised.

4.2.1.4 TOPROCK® DD: Toprock® DD is not intended for interior installation.

4.2.1.5 MULTIFIX™: Multifix™ is not intended for interior installation.

4.2.2 Use as an Alternate to Code Prescribed Thermal Barrier.

ROCKWOOL Comfortboard® 80 and Comfortboard® 110 are approved for use as an alternative to a code prescribed thermal barrier for protection of up to 4 inches (102 mm) thickness foam plastic insulation, through qualification testing to NFPA 275 as required by Section 2603.4 of the 2021 / 2018 / 2015 IBC and Section R316.4 of the 2021 / 2018 / 2015 IRC when installed in accordance with the following:

Installation requires a minimum 2 inches (51 mm) thickness ROCKWOOL Comfortboard® 80 or Comfortboard® 110 product installed ensuring joints are compressed during installation closing all

gaps. Vertical joints are to be offset a minimum of 1" (25 mm). Wall installations require a minimum of two 6-inch (152 mm) length Insulfast fasteners installed along the vertical centerline of each Comfortboard® 80 or Comfortboard® 110 product at one-third panel length. Ceiling installation requires a minimum of five 8-inch (204 mm) length #14 screws with 1.5-inch (38 mm) diameter steel washers per Comfortboard® 80 or Comfortboard® 110 product, with fasteners installed 3 inches (76 mm) from each corner, and one fastener located in the center of the mineral board panel. No foam plastic is to be left exposed after installation of the ROCKWOOL Comfortboard® 80 or Comfortboard® 110 product installation. Foam plastic is not to exceed 4 inches (102 mm) installed thickness.

4.2.3 Attic and Crawlspace:

ROCKWOOL Comfortbatt®, Comfortboard® 80 and Comfortboard® 110 products are permitted for use in attic and crawlspace applications, including for use as a prescribed ignition barrier over foam plastic insulation used in areas of limited entry, when installed at a minimum of 1.5 inches (38 mm) thickness as outlined in Section 2603.4.1.6 of the 2021 / 2018 / 2015 IBC and Section R316.5.3 and R316.5.4 of the 2021 / 2018 / 2015 IRC. The foam plastic insulation is required to be fully covered with no exposed foam after installation.

ROCKWOOL Toprock® DD and Multifix™ products are not intended for use in attic and crawlspace applications.

4.3 Exterior:

4.3.1 COMFORTBATT®: Comfortbatt® is approved for use as thermal insulation in exterior walls. Product installation requires friction fitting between exterior wall members, ensuring complete fill of the cavity.

Comfortbatt® is not intended for use in continuous exterior insulation applications. This installation and use are outside the scope of this report.

Comfortbatt® is approved for use in fire-resistance rated applications when installed in accordance with Section 4.4 of this report.

Comfortbatt® is approved for use in Types I-IV construction when installed in accordance with Section 4.5 of this report.

Comfortbatt® is not intended for use in below grade exterior applications. This installation and use are outside the scope of this report.

Comfortbatt® is not intended for use in under concrete slab insulation applications. This installation and use are outside the scope of this report.

4.3.2 COMFORTBOARD™ 80: Comfortboard® 80 is approved for use as continuous exterior insulation. Product installation requires sufficient anchoring to ensure gravity loading due to the insulation self-weight are resisted.

Installation of a code prescribed water-resistive barrier, air barrier, and vapor barrier in the exterior wall are to be in accordance with the governing code and approved by the local authority having jurisdiction.

Comfortboard® 80 is approved for use in Types I-IV construction when installed in accordance with Section 4.5 of this report.

Comfortboard® 80 is approved for use as exterior below grade continuous insulation without termite protection including areas defined as "very heavy" infestation per Figure 2603.8 of the 2021 / 2018 / 2015 IBC and Figure R301.2(6) of the 2021 / 2018 / 2015 IRC.



Comfortboard® 80 is approved for use as under concrete slab insulation where the compressive strength at 10% deformation for application of 332 psf (15.9 kPa) is not exceeded.

4.3.3 COMFORTBOARD™ 110: Comfortboard® 110 is approved for use as continuous exterior insulation. Product installation requires sufficient anchoring to ensure gravity loading due to the insulation self-weight are resisted.

Installation of a code prescribed water-resistive barrier, air barrier, and vapor barrier in the exterior wall are to be in accordance with the governing code and approved by the local authority having jurisdiction.

Comfortboard® 110 is approved for use in Types I-IV construction is approved for use in Types I-IV construction when installed in accordance with Section 4.5 of this report.

Comfortboard® 110 is approved for use as exterior below grade continuous insulation without termite protection including areas defined as “very heavy” infestation per Figure 2603.8 of the 2021 / 2018 / 2015 IBC and Figure R301.2(6) of the 2021 / 2018 / 2015 IRC.

Comfortboard® 110 is approved for use as under concrete slab insulation where the compressive strength at 10% deformation of 585 psf (28.0 kPa) is not exceeded.

4.3.4 TOPROCK® DD: Toprock® DD is approved for use as above-deck thermal insulation where the approved roof assembly has been evaluated to UL 1256. Attachment of the approved roof covering for resisting wind loads is to be through the Toprock® DD layer, into the underlying roof structure in accordance with the approved roof coverings installation instructions and the applicable code.

Where installed as a component of a roof assembly over sheathing, Toprock® DD can be considered a non-combustible layer, for use with Class A roof fire classified systems requiring installation over a non-combustible sheathing.

Toprock® DD is not intended for use in below grade exterior applications. This installation and use are outside the scope of this report.

4.3.5 MULTIFIX™: Multifix™ is approved for use as above-deck thermal insulation where the approved roof assembly has been evaluated to UL 1256. Attachment of the approved roof covering for resisting wind loads is to be through the Multifix™ layer, into the underlying roof structure in accordance with the approved roof coverings installation instructions and the applicable code.

Where installed as a component of a roof assembly over sheathing, Multifix™ can be considered a non-combustible layer, for use with Class A roof fire classified systems requiring installation over a non-combustible sheathing.

Multifix™ is not intended for use in below grade exterior applications. This installation and use are outside the scope of this report.



4.4 FIRE-RESISTANCE RATED CONSTRUCTION

4.4.1 COMFORTBATT®: Comfortbatt® thermal insulation can be used as a component in fire-resistance rated walls and partitions outlined in Table 721.1(2) of the 2021 / 2018 / 2015 IBC, where the code referenced wall and partition assembly is approved for use with mineral fiber insulation batts friction fit between wall studs. Comfortbatt® thermal insulation can be used as a component in a fire-resistance rated floor and roof systems outlined in 2021 / 2018 / 2015 IBC Table 721.1(3), where the code referenced floor or roof assembly is approved for use with mineral fiber insulation batts friction fit between floor or ceiling members.

4.4.2 COMFORTBOARD® 80 and COMFORTBOARD® 110: Comfortboard® 80 and Comfortboard® 110 thermal insulation used in floor / ceiling applications, installed at a minimum nominal density of 8 lbs/ft³ (128 lbs/ft³) and minimum 3-inches (76 mm) thickness and anchored into ANSI/APA PRG320 cross-laminated timber of minimum 5-ply, for a total minimum thickness of 6-7/8-inches (175 mm) complies as an unrestrained restricted load-bearing floor / ceiling assembly for use in fire-resistance rated applications, where the load is restricted to 82% design load determined following load resistance factor design (LRFD) methodology. The Comfortboard® is required installed with steel screws and minimum 2-inch (51 mm) diameter steel washers or steel plates numbering a minimum of five (5) per insulation board. See Section 8.3 of this report for additional details.

4.4.3 TOPROCK® DD and MULTIFIX™: Toprock® DD and Multifix™ thermal insulation can be used as a component in a calculated fire-resistance rated assemblies as outlined in Section 722 of the 2021 / 2018 / 2015 IBC (see Figure 722.2.2.3(2)) as a mineral board specified component.

4.5 TYPES I-IV (NON-COMBUSTIBLE) CONSTRUCTION

4.5.1 COMFORTBATT®: Comfortbatt® thermal insulation is classified as non-combustible and can be used as a component in building elements in Types I-IV construction when installed in accordance with the manufacturer's installation instructions and this report.

4.5.2 COMFORTBOARD® 80 and COMFORTBOARD® 110: Comfortboard® 80 and Comfortboard® 110 thermal insulation is classified noncombustible and can be used as an exterior insulation component in Types I-IV construction.

Where Comfortboard® 80 and Comfortboard® 110 are used in an assembly of Types I-IV construction in buildings > 40 ft (12.2 m) height and the water resistive barrier is the only combustible component, the exterior wall cladding shall be brick, concrete, stone, terra cotta, stucco or steel with minimum thickness as outlined in Table 1404.2 of the 2021 IBC and Table 1405.2 of the 2018 / 2015 IBC.

Where Comfortboard® 80 and Comfortboard® 110 are used in an assembly of Types I-IV construction in buildings > 40 ft (12.2 m) height and the water resistive barrier is the only combustible component where the water-resistive barrier has a flame spread of ≤ 25 and smoke developed index of ≤ 450 when evaluated in accordance with ASTM E84 or UL 723 and meets the following criteria when evaluated to ASTM E1354 at the intended installed thickness in horizontal orientation, with an applied heat flux of 50 kW/m²:

Peak heat release rate of ≤ 150 kW/m²

- Total heat release of ≤ 20 MJ/m²
- Effective heat of combustion of ≤ 17 MJ/kg

The assembly is required to have a non-combustible cladding installed.

4.5.3 TOPROCK® DD: Toprock® DD® thermal insulation is classified as non-combustible and can be used as a component in building elements in Types I-IV construction, where used in a roof fire classified assembly specifying Toprock® DD. Installation of the roof fire classified assembly is to be in accordance with the approved agency listing.

Toprock® DD when installed as a component of a roof assembly over sheathing, can be considered a non-combustible layer, for use with Class A roof fire classified systems requiring installation over a non-combustible sheathing.

4.5.4 MULTIFIX™: Multifix™ thermal insulation is classified as non-combustible and can be used as a component in building elements in Types I-IV construction, where used in a roof fire classified assembly specifying Multifix™. Installation of the roof fire classified assembly is to be in accordance with the approved agency listing.

Multifix™ when installed as a component of a roof assembly over sheathing, can be considered a non-combustible layer, for use with Class A roof fire classified systems requiring installation over a non-combustible sheathing.

4.6 NONCOMBUSTIBLE PROTECTION TIME RATING (MASS TIMBER PROTECTION)

4.6.1 COMFORTBOARD® 80 and COMFORTBOARD® 110: When installed in accordance with section 8.3 of this report, ROCKWOOL Comfortboard® 80 and Comfortboard® 110 products provide a 40-minute noncombustible protection time at 1.5-inch (38 mm) thickness and 80-minute noncombustible protection time at 3-inch (76 mm) thickness where installed as a single or multiple layer system for the protection of mass timber elements including ceilings, walls, beams and columns.

5.0 LIMITATIONS

- Installation of the ROCKWOOL Comfortbatt®, Comfortboard® 80, Comfortboard® 110, Toprock® DD, and Multifix™ products are to comply with the applicable codes, this report and the manufacturer's installation instructions.
- ROCKWOOL Comfortboard® 80 and Comfortboard® 110 products installed as a thermal barrier for protection of foam plastics shall be installed in accordance with Section 4.2.2 of this report.
- Rockwool Comfortbatt®, Comfortboard® 80 and Comfortboard® 110 products when used in attic and crawlspace applications for protection of foam plastics as an ignition barrier shall be installed in accordance with Section 4.2.3 of this report.
- ROCKWOOL Comfortbatt®, Comfortboard® 80, Comfortboard® 110, Toprock® DD, AND Multifix™ products are required to be installed with a code-compliant water-resistive barrier prior to cladding application when installed on the exterior of the building above grade.
- ROCKWOOL Comfortbatt®, Comfortboard® 80, Comfortboard® 110, Toprock® DD, AND Multifix™ products used in fire-resistance rated construction are to be installed in accordance with Section 4.4 of this report.
- ROCKWOOL Comfortbatt®, Comfortboard® 80, Comfortboard® 110, Toprock® DD, AND Multifix™ products used in Types I-IV Construction are to be installed in accordance with Section 4.5 of this report.
- ROCKWOOL Comfortboard® 80 and Comfortboard® 110 in applications requiring compressive resistance, are to be used within the deformation and loading requirements as outlined in Section 8.1 of this report.
- ROCKWOOL Comfortbatt®, Comfortboard® 80, Comfortboard® 110, Toprock® DD, AND Multifix™ products are manufactured in Milton, ON, Grand Forks, BC, Byhalia, MS and Kearneysville, WV with inspections by QAI Laboratories.

6.0 SUPPORTING INFORMATION:

The following data has been evaluated the ROCKWOOL Comfortbatt®, Comfortboard® 80, Comfortboard® 110, Toprock® DD, and Multifix™ products:

- Data outlining compliance for surface burning characteristics evaluated to ASTM E84.
- Data outlining compliance of Type IVB Category 2 mineral wool insulation board per ASTM C612.
- Data outlining compliance of Type I Class I mineral fiber insulation board per ASTM C726
- Data outlining compliance with ASTM E136 as non-combustible material.
- Data outlining termite resistance per ASTM D3345.
- Thermal resistance testing per ASTM C518.

7.0 MARKING:

ROCKWOOL Comfortbatt®, Comfortboard® 80, Comfortboard® 110, Toprock® DD, AND Multifix™ products complying with this report, include the following information:

- Manufacturer's Name
- Manufacturing Address
- Product Name
- Date of Manufacture
- QAI CER_{US}-1004
- QAI Logo outlined below





CODE EVALUATION REPORT

8.0 RESULTS / RATINGS AND DETAILS:

8.1 THERMAL RESISTANCE OF ROCKWOOL COMFORTBATT®, COMFORTBOARD® 80, COMFORTBOARD® 110, TOPROCK® DD, AND MULTIFIX™ PRODUCTS¹

THICKNESS Inches (mm)	THERMAL RESISTANCE VALUES (R-VALUES)				
	COMFORTBATT®	COMFORTBOARD® 80	COMFORTBOARD® 110	TOPROCK® DD	MULTIFIX™
1	*	4.2	4.2	*	*
1.25	*	5.3	5.3	*	*
1.5	*	6.3	6.3	*	*
2	*	8.4	8.4	7.8	7.8
2.5	*	11	11	9.8	9.8
3	*	13	13	12	12
3.5	15	15	15	14	14
4	*	17	17	16	16
4.5	*	19	19	18	18
5	*	21	21	20	20
5.5	24	*	*	21	21
6	*	*	*	23	23
7.25	31	*	*	*	*
9.5	41	*	*	*	*

* Products not available in noted thickness.

1. Thermal resistance evaluated per ASTM C518 at 75°F (23°C) mean temperature.

For RSI, divide noted R-value with 5.679 for values in metric (m²*K/W).

8.2 COMPRESSIVE RESISTANCE OF ROCKWOOL COMFORTBOARD® 80, COMFORTBOARD® 110, TOPROCK® DD, AND MULTIFIX™ PRODUCTS

COMPRESSIVE RESISTANCE AT 10% DEFORMATION, psf (kPa)			
COMFORTBOARD® 80	COMFORTBOARD® 110	TOPROCK® DD	MULTIFIX™
2.3 psi (332 lbs/ft ³ / 15.9 kPa)	4.1 psi (585 lbs/ft ³ / 28.0 kPa)	12 psi (1728 lbs/ft ³ / 75 kPa)	12 psi (1728 lbs/ft ³ / 75 kPa)

8.3 FIRE-RESISTANCE RATED ASSEMBLIES / NONCOMBUSTIBLE PROTECTION RATINGS

STANDARDS	RATINGS	Minimum Thickness Inches (mm)
ASTM E119 / CAN/ULC S101	4-Hour Unrestrained Restricted Load Bearing (82%) ¹	3-inches (76 mm)
2021 International Building Code Section 703.6 Referencing ASTM E119	40-minutes Noncombustible Protection Time ²	1.5-inches (38 mm)
	80-minutes Noncombustible Protection Time ²	3-inches (76 mm)

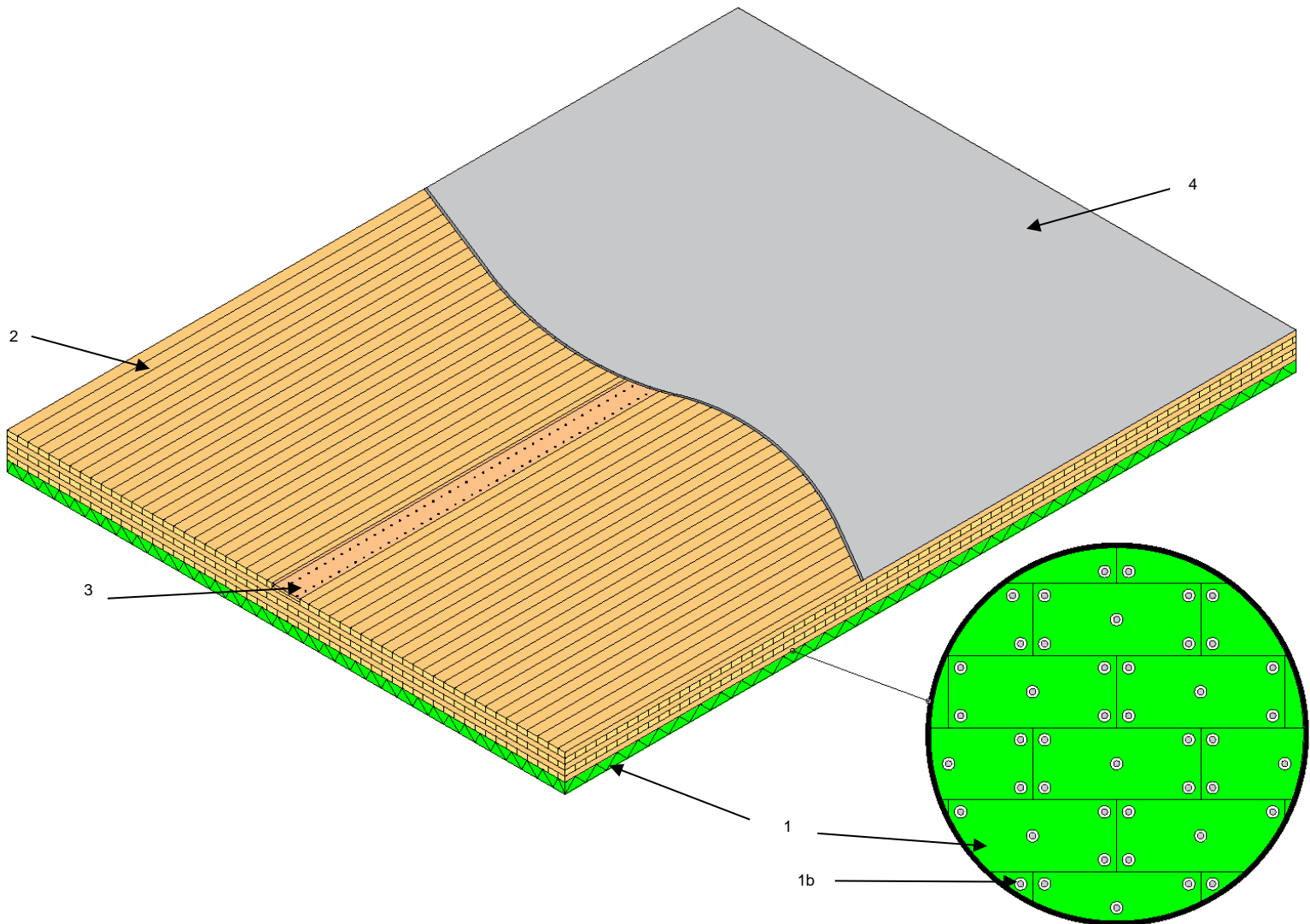


Figure 1. Mass Timber Floor / Ceiling Assembly Including Noncombustible Protection



CODE EVALUATION REPORT

No.	COMPONENT	DESCRIPTION		
1	Mineral Board Insulation	Type:	Comfortboard® 80 or Comfortboard® 110 of minimum nominal 8 lbs/ft ³ (128 kg/m ³) density.	
		Minimum Thickness:	ASTM E119 / CAN/ULC S101 Fire-Resistance Rating	Noncombustible Protection Time Rating Section 703.6 2021 IBC
			3-inches (76 mm).	1.5 inches (38 mm) = 40 minutes 3-inches (76 mm) = 80 minutes
Installation:	Comfortboard® can be installed as a single layer or as multiple layers to a minimum total thickness for fire-resistance ratings and noncombustible protection time ratings for thicknesses shown above. Single Layer: Joints are to be pressed tight at time of insulation to remove gaps between boards. Rows of boards have joints offset. Multiple Layers: Layers are to have joints offset a minimum of 12-inches (305 mm) between layers.			
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:	ASTM E119 4-hour Assembly: 5-ply Cross-Laminated Timber (CLT) complying with PRG-320 specification and listed by an approved agency. Noncombustible Protection Time: Mass timber elements complying with the 2021 International Building Code or state governing codes.	
		Minimum Thickness:	ASTM E119 4-hour assembly: 5-ply CLT of minimum 6-7/8 inches (175 mm) depth. Noncombustible Protection Time: Per engineering design.	
		Installation:	Installation of the mass timber and CLT connections are 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: 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.

STANDARDS	RATINGS	Minimum Thickness Inches (mm)
2021 International Building Code Section 703.6 Referencing ASTM E119	40-minutes Noncombustible Protection Time ¹ 80-minutes Noncombustible Protection Time ¹	1.5-inches (38 mm) 3-inches (76 mm)

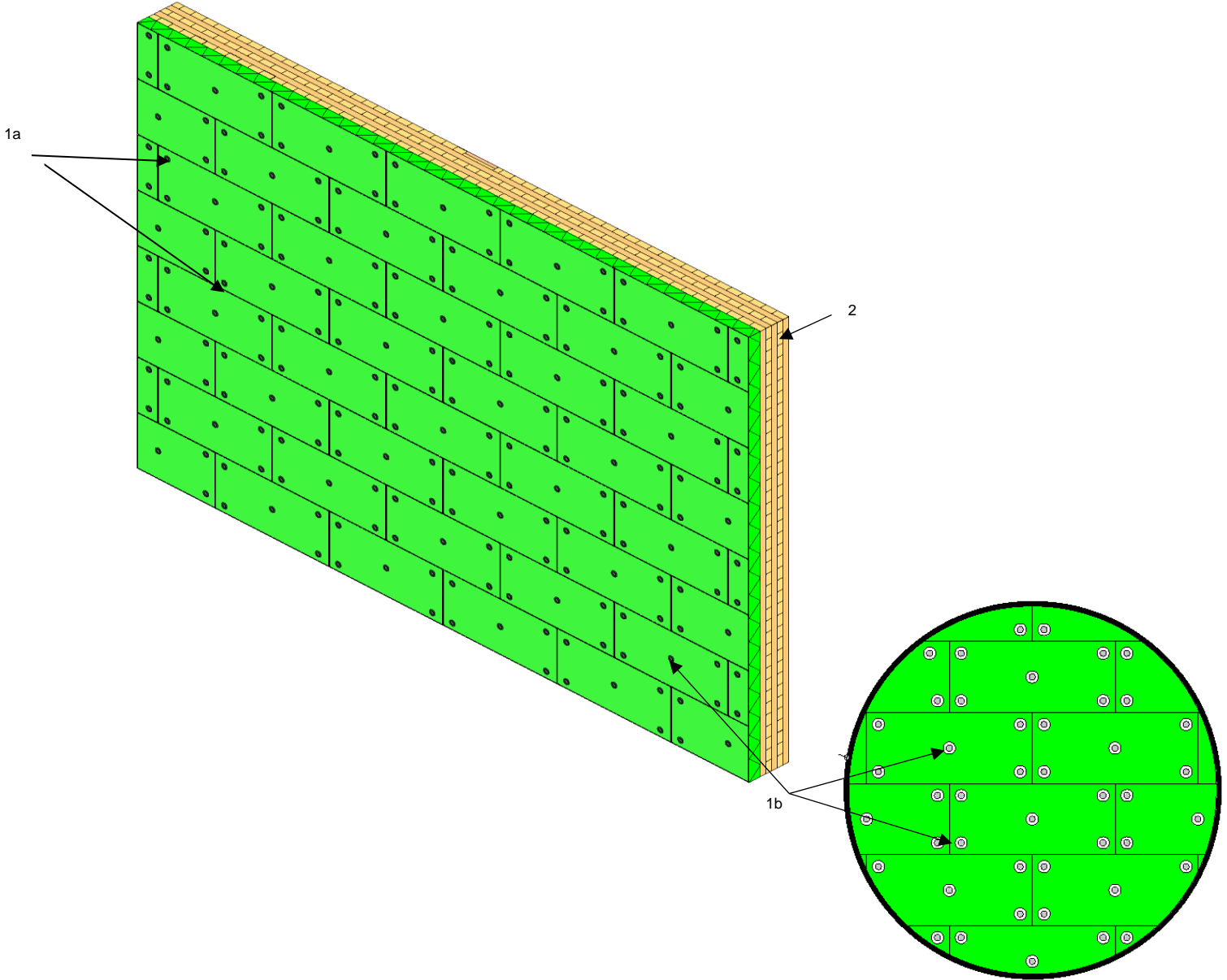


Figure 2. Mass Timber Wall Including Noncombustible Protection



CODE EVALUATION REPORT

No.	COMPONENT	DESCRIPTION		
1	Mineral Board Insulation	Manufacturer:	ROCKWOOL	
		Type:	Comfortboard® 80 or Comfortboard® 110 of minimum nominal 8 lbs/ft ³ (128 kg/m ³) density.	
		Minimum Thickness:	Noncombustible Protection Time Rating Section 703.6 2021 IBC	Encapsulation Rating per CAN/ULC S146
			1.5 inches (38 mm) = 40 minutes 3-inches (76 mm) = 80 minutes	4-inches (102 mm)
Installation:	<p>Comfortboard® can be installed as a single layer or as multiple layers to a minimum total thickness for noncombustible protection time ratings for thicknesses shown above.</p> <p>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-inch (51 mm) diameter washers or plates 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:	Encapsulation Rating per CAN/ULC S146: Mass timber elements complying with the National Building Code of Canada or Provincial governing codes.	
			Noncombustible Protection Time per ASTM E119: Mass timber elements complying with the 2021 International Building Code or state governing codes.	
		Minimum Thickness:	Encapsulation Rating per CAN/ULC S146: Per engineering design.	
			Noncombustible Protection Time per ASTM E119: 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.			

Note 1: Noncombustible Protection Time applies for installations of mass timber elements including walls, columns and beams where installed in accordance with items 1b shown above.

8. 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.

9. REFERENCED STANDARDS

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

ASTM C612 *Standard Specification for Mineral Fiber Block and Board Thermal Insulation.*

ASTM C726 *Standard Specification for Mineral Wool Roof Insulation Board.*

ASTM E136 *Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750°C.*

ASTM D3345 *Standard Test Method for Laboratory Evaluation of Wood and Other Cellulosic Materials for Resistance to Termites.*

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