

UL Evaluation Report

UL ER3660-01

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DIVISION: 09 00 00 - FINISHES

Sub-level 2: 09 20 00 – Plaster and Gypsum Board

Sub-level 3: 09 21 00 – Plaster and Gypsum Board Assemblies

Sub-level 4: 09 21 16 – Gypsum Board Assemblies

Sub-level 3: 09 29 00 – Gypsum Board

Sub-level 4: 09 29 82 – Gypsum Board Fireproofing

COMPANY:

CertainTeed Gypsum, Inc.

20 Moores Road Malvern, PA 19355

www.certainteed.com

Gina.L.Onodera@saint-gobain.com

1. SUBJECT:

GlasRoc® Sheathing and GlasRoc® Sheathing Type X. GlasRoc Sheathing is also referred to as GlasRoc® or EGRG, when provided in a 1/2 inch thickness. GlasRoc Sheathing Type X is also referred to as GlasRoc® or EGRG when provided in a 5/8 inch thickness.

For the purpose of this report, the products will be referred to as GlasRoc® Sheathing to represent the 1/2 inch thick product, and GlasRoc® Sheathing Type X to represent the 5/8 inch thick product.



2. SCOPE OF EVALUATION

Compliance with the following codes:

- 2018, 2015, 2012, 2009, 2006 International Building Code® (IBC)
- 2018, 2015, 2012, 2009, 2006 International Residential Code® (IRC)
- 2018, 2015, 2012 International Green Construction Code (IgCC)

The products were evaluated for the following properties:

- Physical properties
- Structural
- Surface Burning Characteristics
- Noncombustibility
- Fire-resistance-rated construction

3. REFERENCED DOCUMENTS

- ANSI/UL 263 (ASTM E 119), Fire Tests of Building Construction and Materials, 14th edition with revisions through January 31, 2019.
- ANSI/UL 723 (ASTM E 84), Test for Surface Burning Characteristics of Building Materials, 11th edition with revisions through April 19, 2018.
- ASTM E 136-16, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C.
- ASTM E 330-14, Standard Test Method for Structural Performance of Exterior Window, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
- ASTM C 1177-13, Standard Specification for Glass Mat Gypsum Substrate for use as Sheathing

4. USES

GlasRoc® Sheathing and GlasRoc® Sheathing Type X are used as exterior wall sheathing and as exterior soffit board complying with ASTM C 1177 as specified in Table [2506.2](#) of the IBC or Section [R702.3.1](#) of the IRC, as applicable. The sheathing is intended for use as solid sheathing behind a variety of exterior wall cladding materials on buildings of all construction types under the IBC and buildings under the IRC. The sheathing may be used to resist transverse wind loads when installed in accordance with Section 6.2.1 and racking loads due to wind and seismic forces when installed in accordance with Section 6.2.2. GlasRoc® Sheathing Type X may be used as a component of a fire-resistance-rated wall assembly when installed in accordance with Section 6.3.

5. PRODUCT DESCRIPTION

5.1 General:

GlasRoc® Sheathing and GlasRoc® Sheathing Type X are glass mat gypsum substrates with water-resistant cores and surfaces and embedded glass mats beneath the surface of each face. The exterior face is coated with a polymer coating. GlasRoc® Sheathing and GlasRoc® Sheathing Type X are manufactured to conform to physical property requirements specified in Section 5 of ASTM C 1177.

GlasRoc® Sheathing and GlasRoc® Sheathing Type X have flame spread indices of 25 or less when tested in accordance with ANSI/UL 723 (ASTM E 84) and are classified as noncombustible building materials in accordance with ASTM E 136.

To verify the amount of recycled content that GlasRoc® Sheathing and GlasRoc® Sheathing Type X contribute to Sections 901.4.1.1 and 901.4.1.1.1 of the 2018 IgCC and Section [505.2.2](#) of the 2015 and

2012 IgCC, please refer to UL's [Sustainable Products Database](#) for these products. These products also comply with Section 801.4.2.6.1 of the 2018 IgCC and Section [806.5](#) of the 2015 and 2012 IgCC for acoustical ceiling tiles and wall systems and A108.5 Total VOC limit project elective. Refer to UL's [GREENGUARD](#) certification of these products.

5.2 GlasRoc® Sheathing:

GlasRoc® Sheathing is 1/2 inch (12.7 mm) thick, 48 (1219 mm) inches wide, and is available in lengths of 96, 108, and 120 inches (2438, 2743, and 3048 mm).

5.3 GlasRoc® Sheathing Type X:

GlasRoc® Sheathing Type X is 5/8 inch (15.9 mm) thick, 48 inches (1219 mm) wide, and is available in lengths of 96, 108, and 120 inches (2438, 2743, and 3048 mm).

6. INSTALLATION

6.1 General:

GlasRoc® Sheathing and GlasRoc® Sheathing Type X must be installed in accordance with ASTM C 1280, Standard Specification for Application of Gypsum Sheathing, as described in Section [2508.2](#) of the IBC or Section [R702.3.5](#) of the IRC, the manufacturer's published installation instructions, and this report. A copy of the installation instructions must be available at all times on the jobsite during installation.

When installed on exterior walls, the sheathing must be covered with an approved water-resistive barrier in accordance with Section [1404.2](#) of the IBC, or Section [R703.2](#) of the IRC, and an approved exterior wall covering. The sheathing must not be used as a nailing base, and any mechanical attachments of exterior coverings must be made directly to the framing. All fasteners must be driven so that the heads are at or slightly below the surface of the sheathing without fracturing the core.

6.2 Structural Design:

6.2.1 Transverse Wind Resistance: GlasRoc® Sheathing and GlasRoc® Sheathing Type X may be used to resist transverse wind loads when installed as described in Tables 1 and 2. Design wind loads are determined in accordance with Section 1709.5.2 of the 2018 and 2015 IBC, Section 1710.5.2 of the 2012 IBC, Section 1715.5.2 of the 2009 IBC, 1714.5.2 of the 2006 IBC, and/or Section [R703.1.2](#) of the 2018, 2015, 2012 and 2009 IRC, and Section R613.6 of the 2006 IRC, as applicable. The design wind loads must not exceed the allowable transverse wind loads shown in Tables 1 and 2.

6.2.2 Shear Resistance: GlasRoc® Sheathing and GlasRoc® Sheathing Type X may be used as components of conventional light-framed walls for resisting shear loads in accordance with Section [2505](#) of the IBC and as described in Sections 6.2.2.1 and 6.2.2.2 of this report.

6.2.2.1 Prescriptive Wall Bracing: GlasRoc® substrate is equivalent to gypsum sheathing for use as bracing to resist lateral loads due to wind and seismic forces. When installed as prescribed by code for gypsum sheathing, the glass mat gypsum substrate may be used as wall bracing in accordance with Section 2308.6.3, Method GB of the 2018 and 2015 IBC, Section [2308.9.3](#), Method 5, of the 2012, 2009 and 2006 IBC, or in accordance with Section [R602.10.4](#), Method GB of the 2018, 2015, and 2012 IRC, Section [R602.10.2](#), Method GB of the 2009 IRC or Section [R602.10.3](#), Method 5 of the 2006 IRC, as applicable.

6.2.2.2 Engineered Shear Walls: GlasRoc® substrate may be used as a component of engineered shear walls when designed in accordance with Section 2306.3 of the 2018, 2015 and 2012 IBC, Section 2306.7 of the 2009 IBC, or Section [2305.3](#) of the 2006 IBC for wood framed walls or Section 2211.2 of the 2018 IBC, Section [2211.6](#) of the 2015 and 2012 IBC, Section [2210.6](#) of the 2009 IBC, or Section

[2210.5](#) of the 2006 IBC, as applicable, for light steel framed walls. The design wind and seismic loads must not exceed the allowable racking shear capacity for gypsum sheathing shown in Table [2306.3\(3\)](#) of the 2018, 2015 and 2012 IBC, Table [2306.7](#) of the 2009 IBC or Table [2306.4.5](#) of the 2006 IBC. Design wind load must be determined in accordance with Section [1609](#) of the IBC. Design seismic loads must be determined in accordance with Section [1613](#) of the IBC.

Structural members, systems and components, including boundary studs and plates, must be anchored to resist design forces and to provide continuous load paths for these forces to the foundation.

6.3 UL Fire-resistance-rated Wall Assemblies:

Refer to the UL Fire Resistance Certification information for UL File R3660 ([CKNX](#)) for applicable design coverage and details. Fire resistance ratings are only applicable when the assemblies are constructed in accordance with the published design.

6.4 Thermal Barrier:

GlasRoc® Sheathing and GlasRoc® Sheathing Type X may be used as a thermal barrier for foam plastic insulation in accordance with Section [2603.4](#) of the IBC or Section [R316.4](#) of the IRC when installed in accordance with Section 6.1.

7. CONDITIONS OF USE

GlasRoc® Sheathing and GlasRoc® Sheathing Type X as described in this report, comply with, or are suitable alternatives to what is specified in, those codes listed in Section 2.0 of this report, subject to the following conditions:

7.1 The products must be manufactured, identified, and installed in accordance with this report, the manufacturer's published installation instructions, and the applicable code. If there is a conflict between the manufacturers published installation instructions and this report, this report governs.

7.2 When the products described in this report are not installed as an engineered shear wall, as described in Section 6.2.2, the stud walls must be braced by other materials in accordance with the applicable code.

7.3 Shear walls using these materials must not be used to resist forces imposed by masonry and/or concrete walls.

7.4 See UL Online Certifications Directory for products evaluated as a part of fire-resistance-rated assemblies in accordance with UL 263, Gypsum Board ([CKNX](#)).

7.5 See UL Online Certifications Directory for products evaluated for flame spread in accordance with UL 723, Gypsum Board ([BWFR](#)).

7.6 GlasRoc® Sheathing and GlasRoc® Sheathing Type X are manufactured at the following locations under the UL LLC Classification and Follow-Up Service Program, which includes audits in accordance with the quality elements of ICC-ES Acceptance Criteria for Quality Documentation, AC10.

US and Canadian manufacturing locations:

US Locations	Canadian Locations
Carrollton, KY	Ville STE-Catherine, Quebec, Canada
Nashville, AR	Calgary, Alberta, Canada
Seattle, WA	

8. SUPPORTING EVIDENCE

8.1 Manufacturer's product literature and quality documentation.

8.2 UL Classification reports in accordance with UL 263 (ASTM E 119). See UL Product Certification Categories, Gypsum Board ([CKNX](#)).

8.3 UL Classification reports in accordance with UL 723 (ASTM E 84) and ASTM E 136. See UL Product Certification Categories, Gypsum Board ([BWFR](#)).

8.4 Reports of physical property testing in accordance with ASTM C 473, for compliance with ASTM C 1177.

8.5 Reports of transverse load tests in accordance with ASTM E 330.

8.6 Documentation of quality system elements described in AC10.

9. IDENTIFICATION

GlasRoc® Sheathing and GlasRoc® Sheathing Type X (alternatively labeled as GlasRoc® or EGRG), as described in this evaluation report, are identified by a marking bearing the report holder's name (CertainTeed Gypsum, Inc.), the plant identification, the product designation, the UL Classification Mark, and the evaluation report number UL ER3660-01. The validity of the evaluation report is contingent upon this identification appearing on the product or UL Classification Mark certificate.

10. USE OF UL EVALUATION REPORT

10.1 The approval of building products, materials or systems is under the responsibility of the applicable authorities having jurisdiction.

10.2 UL Evaluation Reports shall not be used in any manner that implies an endorsement of the product, material or system by UL.

10.3 The current status of this report, as well as a complete directory of UL Evaluation Reports may be found at UL.com via our UL Product iQ:

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TABLE 1 – ALLOWABLE TRANSVERSE WIND LOADS FOR (psf) GLASROC® SHEATHING AND GLASROC® SHEATHING TYPE X IN ENGINEERED WOOD CONSTRUCTION^{1,2,3,5,6}

SHEATHING TYPE	MAXIMUM STUD SPACING ⁴ (in.)	FASTENER TYPE	FASTENER SPACING (in.)	ALLOWABLE LOAD (psf)
GlasRoc®	16	Roofing nails ⁷ 7/16-inch head x 1-1/2 inches long	4,8	22
		Type W No. 6 bugle head screws 1-1/4 inches long	4,8	24
	24	Roofing nails ⁷ 7/16-inch head x 1-1/2 inches long	4,8	17
		Type W No. 6 bugle head screws 1-1/4 inches long	4,8	16
GlasRoc® Type X	16	Roofing nails ⁷ 7/16-inch head x 1-3/4 inches long	4,8	24
		Type W No. 6 bugle head screws 1-1/4 inches long	4,8	30
	24	Roofing nails ⁷ 7/16-inch head x 1-1/2 inches long	4,8	17
		Type W No. 6 bugle head screws 1-3/8 inches long	4,8	16

For SI: 1 inch = 25.4 mm

1 pound per lineal foot (plf) = 14.6 N/m

1 pound per square foot (psf) = 48 Pa

¹The sheathing is installed with the long dimension either parallel or perpendicular to the studs.

²All ends and edges of sheathing must be supported by framing members, except where edges or ends are perpendicular to studs.

³The nails and screws must have a minimum edge distance of 3/8 inch (9.5 mm).

⁴Wall studs are nominally 2-by-4 No. 1 grade Douglas-fir-larch with a minimum specific gravity of 0.50.

⁵Allowable values are for short-term wind loads.

⁶Wood stud walls sheathed with GlasRoc® Sheathing or GlasRoc® Sheathing Type X must not be used to resist horizontal loads from concrete or masonry walls.

⁷For properties of the roofing nails, refer to ASTM F 1667.

⁸ First value indicates fastener spacing around perimeter, second value indicates fastener spacing in field.

TABLE 2 – ALLOWABLE TRANSVERSE WIND LOADS (psf) FOR GLASROC® SHEATHING AND GLASROC® SHEATHING TYPE X IN ENGINEERED STEEL STUD CONSTRUCTION^{1,2,3,5}

SHEATHING TYPE	MAXIMUM STUD SPACING ⁴	FASTENER TYPE	FASTENER SPACING ⁶ (in.)	ALLOWABLE LOAD (psf)
GlasRoc®	16	1-1/4 inch #6 bugle drywall screws	4, 4	-26
			4,8	-20
			8,8	+38
			8,8	-18
GlasRoc® Type X	8	1-1/4 inch #6 bugle drywall screws	4,4	-58
			4,8	-51
	16	1-1/4 inch #6 bugle drywall screws	4,4	-30
			4,8	-23
			8,8	-27
			8,8	+47
	24 ⁶	1-1/4 inch #6 bugle drywall screws	4,4	-18
			4,8	-16
			8,8	+29

For SI: 1 inch = 25.4 mm
 1 pound per lineal foot (plf) = 14.6 N/m
 1 pound per square foot (psf) = 48 Pa

¹The sheathing is installed with the long dimension either parallel or perpendicular to the studs.
²All ends and edges of sheathing must be supported by framing members, except where edges or ends are perpendicular to studs.
³The screws must have a minimum edge distance of 3/8 inch (9.5 mm).
⁴Wall studs are nominally 3-5/8-by-1-5/8 No. 18 gauge steel studs.
⁵Allowable values are for short-term wind loads.
⁶First value indicates fastener spacing around perimeter, second value indicates fastener spacing in field.

