

CertainTeed
GlasRoc[®] ROOF BOARD



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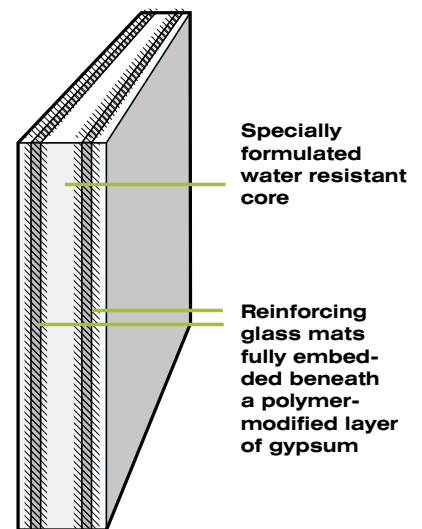
GlasRoc[®] Roof Board is a high performance, weather-resistive, glass mat gypsum-based cover board for mechanically attached low-slope commercial roofing systems.

High Performance Roof Board

GlasRoc[®] Roof Board is suited for use in mechanically attached, low-slope commercial roofing systems. GlasRoc Roof Board is a paperless, mold- and moisture-resistant gypsum cover board. The unique technology behind GlasRoc Roof Board combines reinforcing glass mats, fully embedded into a water-resistant gypsum core positioned beneath a paperless polymer-modified gypsum surface. It is an enhanced version of the patented Embedded Glass Reinforced Gypsum[™] technology developed and used by CertainTeed and its affiliates for the past 20 years. GlasRoc Roof Board offers:

- **Superior durability** – will not delaminate under normal conditions as compared to other glass mat roof boards
- **Ease of handling, less skin irritation** – fully embedded glass mats reduce irritating glass fiber exposure. Cuts like regular gypsum board, with no special tools or fasteners required for installation.
- **Exceptional strength** – Improved physical performance compared to perlite insulation and fiber board – superior resistance to damage from foot traffic and hail.
- **Excellent fire resistance** – meets CAN/ULC S107/UL 790 Class A, ASTM E 108, CAN/ULC S126/ANSI/UL 1256, FM Class 1
- **Mold and moisture resistance** – achieves highest possible score of 10 in ASTM D 3273 mold test. The superior water-resistant surface does not inhibit water vapor permeance.
- **Conformity to design and code requirements** as per ASTM C 1177

GlasRoc Roof Board Protection



Covered by U.S. Patent Nos. 6,524,679; 6,878,321; 6,866,492 and other patents pending.

buildingresponsibly[™]

CertainTeed respects the environment through the responsible development of sustainable building products and systems.

The building industry continues to look for ways to reduce impact on the environment while meeting customer demand for products that deliver beauty, comfort and performance.

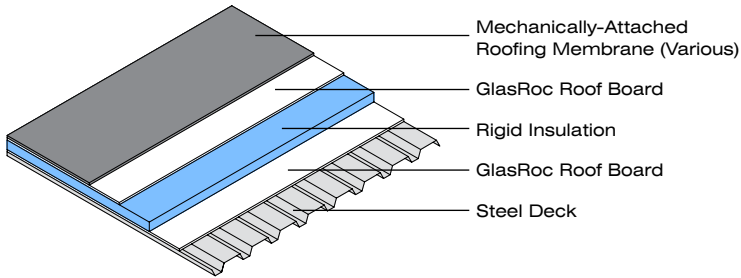
CertainTeed strives to be the preferred supplier for innovative, sustainable building products and systems.



Application Drawings

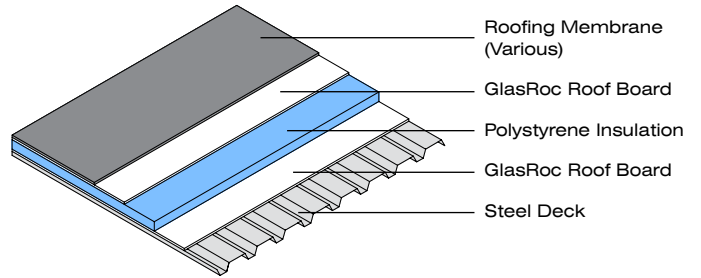
Mechanically-Attached

GlasRoc® Roof Board may be used for mechanically attached membranes.



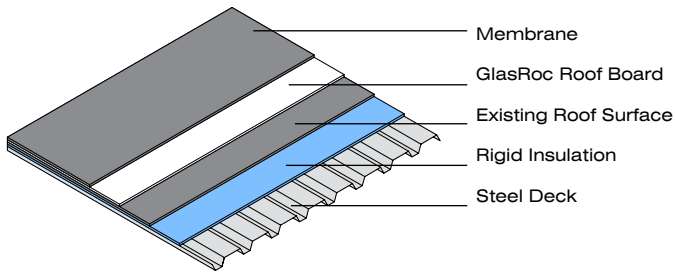
Thermal Barrier

GlasRoc Roof Board may be used as a thermal barrier for rigid foam insulations.



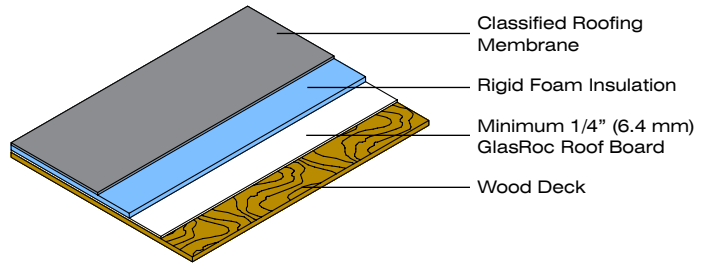
Roof Recover Board

GlasRoc Roof Board may be used as a separator layer over an existing roof system when the new system is mechanically attached.



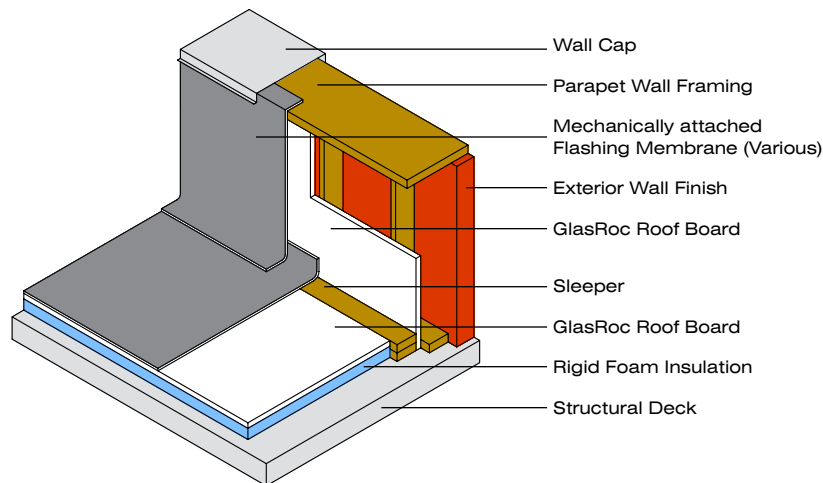
Fire Barrier Underlayment

When used as thermal barrier board below rigid foam insulation, GlasRoc Roof Board can be used on combustible decks to achieve a Class A, B or C Fire Rating per UL 790/UJC S107 testing.



Parapet Wall Substrate

GlasRoc Roof Board may be used for parapet walls when the roofing membrane is mechanically attached.



Cover Board Comparisons

Type	Description	Fire Resistance	Moisture Resistance	Strength
GlasRoc® Glass Mat Gypsum	Gypsum core with fiberglass mat on both sides. High Performance.	★★★★★	★★★★★	★★★★★
Gypsum- Fiber	Gypsum core reinforced with cellulose fibers. High Performance.	★★★★★	★★★★★	★★★★★
Paper-Faced Gypsum	Gypsum core with paper-facer on both sides.	★★★★★	★	★★★★
Perlite	Expanded perlite combined with organic fibers and binders.	★★★	★	★
Wood Fiberboard	Wood or cane fibers with binders.	★★	★	★★
Plywood/ OSB	Thin sheets of veneer in layers. Cross-laminated layers of resin-bonded wood strands.	★	★	★★★★★
Mineral Fiberboard	Molten rock, slag or glass, spun into a Fibrous material with a binding agent.	★★	★★★	★
Asphaltic Board	Fiberglass-faced asphalt board.	★★	★★★★★	★★

Fire Performance



UL Fire Data

ASTM E119 and CAN/ULC S101 Type X: 5/8" (15.9 mm) GlasRoc® Roof Board is a Type X roof board and is Classified by Underwriters Laboratories and ULC. Its outstanding fire performance means it can replace any classified or unclassified 5/8" (15.9 mm) gypsum board in an assembly in the UL Fire Resistance Directory used in the following UL "P" assemblies and "R" assemblies from the ULC Fire Resistance Directory:

UL: P225, P227, P230, P235, P254, P259, P266, P302, P508, P510, P512, P514, P518, P701, P711, P713, P714, P717, P718, P719, P720, P722, P725, P726, P727, P728, P729, P730, P731, P732, P733, P734, P735, P738, P739, P740, P741, P742, P743, P801, P811, P815, P819, P824, P825, P826, P828

ULC:

R210, R217, R221, R222, R223, R224, R225, R702, R703, R804, R805, R806

ANSI/UL 1256 and CAN/ULC S126: 1/4" (6.4 mm) GlasRoc Roof Board is a code accepted alternative to a 15-minute thermal barrier for roof assemblies per ANSI/UL 1256 and CAN/ULC S126 Steiner Tunnel "Fire Classified Construction." UL 1256/ULC S126 testing is based on resistance to internal, below-deck fires.

UL 790/ULC S107 Classification: GlasRoc Roof board has been classified by UL for use as a fire barrier over combustible and noncombustible decks in accordance with the ANSI/UL 790 and CAN/ULC S107 test standard. The UL classification includes Class A, B or C rating. This test method and classification is based on the resistance to an external fire and does not test for internal fires.

ASTM C 1177, Type X: GlasRoc Roof Board is manufactured to meet the "Type X" requirements of ASTM C 1177 for increased fire resistance beyond regular gypsum board.

FM Class 1 Approvals: FM Class 1 requires that a roof deck assembly is subjected to a series of tests – internal fire, external fire, foot traffic, impact resistance, and susceptibility to heat damage – as described in FM 4470 Approval Standard for Class 1 Roof Covers. A roof assembly must pass all these tests in order to gain a Class 1 designation. For insulated steel roof deck assemblies, FM Class 1 includes FM 4470 and FM 4450 Approval Standard for Class 1 Insulated Steel Decks Roofs.

Installation



Recommendations

Comply with the roof system manufacturer's written instructions and local code requirements. Where applicable, comply with Factory Mutual Global and Underwriters Laboratories® requirements for installation techniques. Edge joints should be located on- and parallel to- deck ribs. Stagger end joints of adjacent lengths. Install approved fasteners in accordance with the roof system manufacturer's requirements. Approved fasteners with plates should be installed flush with GlasRoc® Roof Board surface. GlasRoc Roof Board maximum flute spans are:

- 2-5/8" (67 mm) for 1/4" (6.4 mm) thickness
- 5" (125 mm) for 1/2" (12.7 mm) thickness
- 8" (200 mm) for 5/8" (15.9 mm) Type X thickness

For vertical parapet applications, 1/2" (12.7 mm) can span 16" (400 mm) oc and 5/8" (15.9 mm) can span 24" (610 mm) oc.

Limitations

- GlasRoc Roof Board is designed for use as part of a properly designed roof system. The specification and use of GlasRoc Roof Board as a roofing component is the responsibility of the design professional. CertainTeed does not offer roofing system design services.
- For use in mechanically fastened systems only. GlasRoc Roof Board is not recommended for use in torch down, fully adhered applications, spray foam, fluid applied, or in hot mop applications where the hot asphalt will be applied directly to the GlasRoc Roof Board.
- Consult and follow roofing manufacturer's specific instructions for applying their products to GlasRoc Roof Board.
- The need for a separator sheet between the GlasRoc Roof Board and the roofing membrane shall be determined by the roof membrane manufacturer or roofing systems designer.
- Upon receipt of GlasRoc Roof Board, remove all plastic and poly packaging used to protect material during transit that may trap moisture and adversely affect applications. Provide other suitable, breathable weather protection for storage to keep GlasRoc Roof Board products dry prior to installation.

- GlasRoc Roof Boards should be kept dry before, during and after installation. Do not install more GlasRoc Roof Boards than can be covered the same day by the final roof membrane system.
- Boards should be stacked flat on a level surface, not directly on the ground.
- Avoid over-use of non-vented, direct-fired heaters during winter months.
- Do not install GlasRoc Roof Boards when moisture or condensation can accumulate on the boards – such as rain, snow, heavy fog or leaks.
- For vertical parapet applications, 1/2" (12.7 mm) GlasRoc Roof Board can span 16" oc (400 mm) and 5/8" (15.9 mm) can span 24" (610 mm).
- GlasRoc Roof Board should not be subjected to abnormal excessive loads or foot traffic such as on plaza decks or under steel wheeled equipment that may fracture or damage the panels. Provide suitable roofing system protection when required.
- GlasRoc Roof Board edges and ends should be butted in typical installations. Long, uninterrupted runs of 1/4" (6.4 mm) thick GlasRoc Roof Board may require slight gapping due to higher surface temperature gain.
- The decision to use a vapor retarding membrane is the responsibility of the design professional.
- In re-roof applications the existing roof system must be completely dry throughout prior to installing GlasRoc Roof Boards.
- Conform to published spanability recommendations.

Storage

Store materials for protection against damage from weather, direct sunlight, surface contamination and construction traffic. If stored outside, stack boards flat on level supports off the ground under a breathable waterproof cover that ensures full protection from weather. Store and support boards in flat stacks to prevent sagging. Protect materials to keep them dry. Protect boards to prevent damage to edges and surfaces.

Architectural Specifications

Section 07 50 00 Membrane Roofing

PART 1-GENERAL

1.01 SUMMARY

A. Section Includes: Fiberglass Mat-Faced Gypsum Roof Board:

1.02 REFERENCES

- A. ASTM International (ASTM):
1. ASTM C472 Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete.
 2. ASTM C473 Standard Test Methods for Physical Testing of Gypsum Panel Products.
 3. ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
 4. ASTM C840 Standard Specification for Application and Finishing of Gypsum Board.
 5. ASTM C1177 Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
 6. ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials.
 7. ASTM E661 Standard Test Method for Performance of Wood and Wood-Based Floor and Roof Sheathing Under Concentrated Static and Impact Loads.

1.03 SUBMITTALS

A. Product Data: Manufacturer's specifications and installation instructions for each product specified.

1.04 QUALITY ASSURANCE

A. Regulatory Requirements: Provide products that comply with the following limits for surface burning characteristics when tested per ASTM E84 and CAN/ULC S102:

1. Flame spread: 0.
2. Smoke developed: 0.

PART 2-PRODUCTS

2.01 MANUFACTURERS

A. CertainTeed Gypsum:

1. Fiberglass Mat-Faced Gypsum Roof Board:
 - a. GlasRoc® Roof Board.

2.02 MATERIALS

A. Fiberglass Mat-Faced Gypsum Roof Board:

1. Thickness: 1/4 inch (6.4 mm)
2. Width: 4 feet (1220 mm)
3. Length: 4 feet (1220 mm); 8 feet (2440 mm)
4. Weight: 1.25 lb/sq. ft. (6.1 kg/m²)
5. Surfacing: Fiberglass mat.
6. Flexural Strength, Parallel (ASTM C473): 40 lbf (178 N) minimum.
7. Flute Span (ASTM E661): 2-5/8 inches (67 mm)
8. Permeance (ASTM E96): Not more than 40 perms (2298 ng/Pa·s·m²)
9. R-Value (ASTM C518): Not less than 0.26 (0.046 K·m²/W)
10. Water Absorption (ASTM C1177): Less than 10 percent of weight.
11. Compressive Strength (Applicable Sections of ASTM C472): 500 - 800 pounds per square inch (3400 - 5500 kPa)
12. Surface Water Absorption (ASTM C473): Not more than 2.5 grams
13. Acceptable Products:
 - a. GlasRoc Roof Board, CertainTeed Gypsum.

B. Fiberglass Mat-Faced Gypsum Roof Board:

1. Thickness: 1/2 inch (12.7 mm)
2. Width: 4 feet (1220 mm)
3. Length: 4 feet (1220 mm); 8 feet (2440 mm)
4. Weight: 1.9 lb/sq. ft. (9.3 kg/m²)
5. Surfacing: Fiberglass mat.
6. Flexural Strength, Parallel (ASTM C473): 80 lbf (356 N), minimum.
7. Flute Span (ASTM E661): 5 inches (125 mm)
8. Permeance (ASTM E96): Not more than 26 perms (1494 ng/Pa·s·m²)
9. R-Value (ASTM C518): Not less than 0.51 (0.09 K·m²/W)
10. Water Absorption (ASTM C1177): Less than 10 percent of weight.
11. Compressive Strength (Applicable Sections of ASTM C472): 500 - 800 pounds per square inch (3400 - 5500 kPa)

12. Surface Water Absorption (ASTM C473): Not more than 2.5 grams

13. Acceptable Products:

- a. GlasRoc Roof Board, CertainTeed Gypsum.

C. Fiberglass Mat-Faced Gypsum Roof Board:

1. Thickness: 5/8 inch (15.9 mm)
2. Width: 4 feet (1220 mm)
3. Length: 4 feet (1220 mm); 8 feet (2440 mm)
4. Weight: 2.4 lb/sq. ft. (11.7 kg/m²)
5. Surfacing: Fiberglass mat.
6. Flexural Strength, Parallel (ASTM C473): 100 lbf (445 N), minimum.
7. Flute Span (ASTM E661): 8 inches (200 mm)
8. Permeance (ASTM E96): Not more than 21 perms (1206 ng/Pa·s·m²)
9. R-Value (ASTM C518): Not less than 0.51 (0.09 K·m²/W)
10. Water Absorption (ASTM C1177): Less than 10 percent of weight.
11. Compressive Strength (Applicable Sections of ASTM C472): 500 - 800 pounds per square inch (3400 - 5500 kPa)
12. Surface Water Absorption (ASTM C473): Not more than 2.5 grams
13. Acceptable Products:
 - a. GlasRoc Roof Board, CertainTeed Gypsum.

PART 3-EXECUTION

3.01 INSTALLATION

A. Mechanically Attached: As recommended by roof system or as required by FM or UL/ULC guidelines.

1. Manufacturer's Recommendations:
 - a. Current "Product Catalog", CertainTeed Gypsum.

3.02 PROTECTION

A. Protect gypsum board installations from damage and deterioration until the date of Substantial Completion.

GlasRoc® Roof Board Benefits

Increased Durability

GlasRoc Roof Board resists delamination because the glass mats are fully embedded into the panel, creating a more durable, dimensionally stable panel.

Easy to Handle and Install

GlasRoc Roof Board is handled and installed like regular paper-faced gypsum board.

- Is easier to handle because skin irritations are minimized due to the fully embedded glass mats
- Can be scored and cut with a standard utility knife. No special tools required
- Snaps free after scoring only one face
- Has uniform field and edge hardness, making trimming and fastening quick and easy

Exceptional Strength

Improved physical performance compared to perlite insulation and fiber board – superior resistance to damage from foot traffic and hail.

Excellent Fire Protection

Testing in accordance with ASTM E 136 proved that GlasRoc Roof Board is noncombustible and offers superior fire performance. It has a zero Flame Spread rating and zero Smoke Developed rating when tested per ASTM E 84 (CAN/ULC-S102) for surface burning characteristics.

Mold Resistance

GlasRoc Roof Board resists mold growth. When tested in accordance with ASTM D 3273, GlasRoc Roof Board exhibited no evidence of mold or fungal growth after a period of 28 days of exposure, yielding a rating of 10.

Physical Properties	1/4" (6.4mm)	1/2" (12.7 mm)	5/8" (15.9 mm) Type X
Width, standard	4' (1220 mm)	4' (1220 mm)	4' (1220 mm)
Length, standard	4' (1220 mm) 8' (2440 mm)	4' (1220 mm) 8' (2440 mm)	4' (1220 mm) 8' (2440 mm)
Weight, lbs/sqft (kg/m ²)	1.25 (6.1)	1.9 (9.3)	2.4 (11.7)
Surfacing	Fiberglass mat	Fiberglass mat	Fiberglass mat
Flexural Strength, parallel, min lbf (N)	40 (178)	80 (356)	100 (445)
Permeance, perms (ng/Pa·s·m ²)	40 (2298)	26 (1494)	21 (1206)
R Value, °F·ft ² ·hr/Btu (K·m ² /W)	0.26 (.046)	0.51 (.09)	0.51 (.09)
Flute Spanability	2-5/8" (67 mm)	5" (125 mm)	8" (200 mm)
Linear Variation with change in Temperature, in/in°F (mm/mm°C)	9.3 x 10 ⁻⁶ (16.7 x 10 ⁻⁶)	9.3 x 10 ⁻⁶ (16.7 x 10 ⁻⁶)	9.3 x 10 ⁻⁶ (16.7 x 10 ⁻⁶)
Linear Variation with change in moisture, in/in%RH or (mm/mm%RH)	6.5 x 10 ⁻⁶	6.5 x 10 ⁻⁶	6.5 x 10 ⁻⁶
Water Absorption, % max	10	10	10
Compressive Strength, psi (kPa) nominal	500-800 (3400 - 5500)	500-800 (3400 - 5500)	500-800 (3400 - 5500)
Surface Water Absorption, grams	≤2.5	≤2.5	≤2.5
Flame Spread, Smoke Developed	0/0	0/0	0/0
Fire Classification	FM Class 1; UL/ULC Class A	FM Class 1; UL/ULC Class A	FM Class 1; UL/ULC Class A
Mold Resistance per ASTM D 3273	10	10	10

Characteristics, properties or performance of materials or systems manufactured by CertainTeed herein described are derived from data obtained under controlled test conditions. CertainTeed makes no warranties, express or implied, as to their characteristics, properties or performance under any variations from such conditions in actual construction. CertainTeed assumes no responsibility for the effects of structural movement.

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www.certainteed.com <http://blog.certainteed.com>

CertainTeed Corporation
P.O. Box 860
Valley Forge, PA 19482

Professional: 800-233-8990
Consumer: 800-782-8777

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