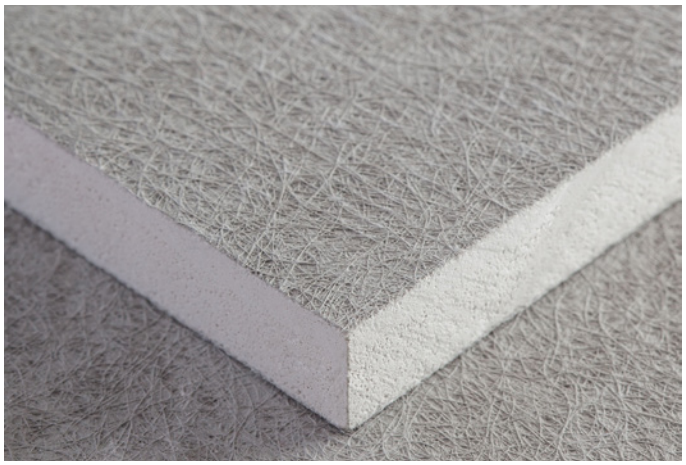
DEXcell FA® Glass Mat Roof Board



Overview

DEXcell FA Glass Mat Roof Board has heavy duty coated fiberglass facers and an enhanced mold- and moisture-resistant gypsum core. The precoated facers sealed surface technology is designed to increase the coverage of membrane adhesives and enhance the performance of the bond strength of the system. This mold- and moisture-resistant gypsum panel is a substrate board and/or cover board for commercial roofing applications. It scores and cuts easily, and it is specially coated on the front, back and sides for easily handling.

DEXcell FA Glass Mat Roof Board is approved to be used in a variety of roofing systems including fully adhered and mechanically attached single-ply membrane systems.

Basic Uses

Applications

- Use DEXcell FA Glass Mat Roof Board as a substrate board and for thermal protection in roofing assemblies. It provides increased fire safety and acoustical enhancement. It also serves as a substrate for a vapor retarder and/or continuous substrate for the application of roofing membranes. This board provides increased moisture, mold and impact resistance.
- Use it as an insulation coverboard in adhered roofing assemblies. DEXcell FA Glass Mat Roof Board protects and supports the roof membrane; provides increased fire, moisture and mold resistance; and reduces the potential for penetration damage to the membrane.
- Use it to sheath the roof side of parapet and penthouse walls.

Advantages

- Scores and snaps easily.
- Fiberglass mat on face and back has special coating for ease of use in handling and installation.
- Meets ASTM C1177.
- Meets FM Class 1 and UL Class A fire ratings for roofing systems up to unlimited slope per UL 790/ULC CAN-107.
- Approved component in specific UL fire-rated designs.
- Use it as part of a class A, B or C roof covering that has been tested in accordance with UL 1256, ULC CAN-S216 or FM 4450. No additional thermal barrier is required as per IBC 2603.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Precoated facers seal the surface allowing improved adhesive coverage and bond.
- Eliminates the need for a field-applied primer for many fully adhered roofing membrane applications.
- High-density coverboard/thermal barrier.

Installation

General

1. Install roof boards in accordance with methods described in the standards and references cited in this document.
2. Examine and inspect deck substrate to which roof boards are to be applied. Remedy all defects prior to installation of the roof boards.
3. Provide minimum ¼" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
4. Install fire-rated assemblies in accordance with the details found in the UL Fire Resistance Directory: ul.com.
5. See Physical Properties chart on next page for maximum flute span when panels are applied directly over metal decking.

Wind Uplift

1. DEXcell FA Glass Mat Roof Boards are included in numerous assemblies evaluated by Factory Mutual Global (FMG) and other independent laboratories for wind-uplift performance. For information concerning such assemblies, visit: roofnav.com.
2. Refer to roof system manufacturer's written instructions, local code requirements, Factory Mutual Global (FMG) and Underwriters Laboratories (UL) requirements for proper installation techniques.

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3. Use fasteners or adhesives specified in accordance with system requirements. Install approved fasteners with plates into the DEXcell FA Glass Mat Roof Board. Install fasteners and adhesives in compliance with the roof system manufacturer's installation recommendations and FMG Property Loss Prevention Data Sheet 1-29. Proper fastener spacing or adhesive application is essential to achieve wind-uplift performance.
4. Locate board edge joints on, and end joints parallel to, metal deck ribs. Stagger end joints of adjacent lengths of DEXcell FA Glass Mat Roof Board. In typical installations, butt board edges and ends loosely.

Safety

1. Installers should wear long pants and a long-sleeved, loose fitting shirt. Use protective gloves and special eye protection (goggles or safety glasses with side shield). Do not use a power saw to cut these products.
2. Caution: Because this product contains fiberglass, dust and glass fibers may be released during normal handling, which could result in eye or skin irritation or cause difficulty in breathing. Whenever possible, avoid contact with the skin and eyes and avoid breathing dust or fibers that may be released during installation.

REVIEW CURRENT VERSICO SPECIFICATIONS AND DETAILS FOR SPECIFIC INSTALLATION REQUIREMENTS.

Fire-Resistance Ratings

Fire and sound ratings for building systems utilizing glass mat gypsum roof boards are dependent on the thickness of the roof board, its application in conjunction with other roof assembly parts, and the manner in which the assembly is installed.

Tests for fire resistance and sound transmission performed by independent laboratories have resulted in specific ratings for roof assemblies. For maximum fire resistance and sound control, use double-layer construction. The additional mass further retards heat and noise penetration.

Fire-resistance ratings represent the results of tests on assemblies made up of specific materials in a specific configuration. When selecting construction designs to meet certain fire-resistance requirements, use caution to ensure that each component of the assembly is the one specified in the test. Further, take precaution that assembly procedures are in accordance with those of the tested assembly.

- DEXcell FA Glass Mat Roof Board (minimum ¼") meets UL Class A fire ratings for roofing systems up to unlimited slope per UL 790 and ULC CAN-S107; refer to UL Certifications Directory: ul.com.
- DEXcell FA Glass Mat Roof Board (minimum ¼") is classified in roof deck constructions in accordance with FM 4450, ANSI/UL 1256, ULC CAN-S126 to resist fire from within a building; refer to UL Certifications Directory: ul.com.
- ⅝" (15.9 mm) DEXcell FA Glass Mat Roof Board is UL Classified for use in numerous hourly rated UL assemblies, including UL "P" roof assemblies; refer to UL Certifications Directory: ul.com. Meets Type X per ASTM C1177.
- DEXcell FA Glass Mat Roof Board complies with requirements of FM 4450 and FM 4470. Meets FM Class 1.

Limitations

General

- DEXcell FA Glass Mat Roof Boards are engineered to perform within a properly designed roof system. The use of DEXcell FA Glass Mat Roof Boards as a roofing system component is the responsibility of the design professional.
- Design roof assemblies containing DEXcell FA Glass Mat Roof Boards to control vapor drive and moisture.
- Although DEXcell FA Glass Mat Roof Boards are engineered with coated fiberglass facers and high-density gypsum cores, the presence of free moisture can have an adverse effect on product performance and may compromise the installation of additional roofing system components.
- Moisture accumulation may also significantly decrease wind uplift and vertical pull resistance in the system or assembly. DEXcell FA Glass Mat Roof Boards that contain disproportionate free moisture content may require testing or replacement.
- Do not use panels as a nailing base (they are nonstructural).
- For suitability in specific roofing systems, contact roofing manufacturers on the application of their products to DEXcell FA Glass Mat Roof Boards.
- Do not expose DEXcell FA Glass Mat Roof Boards to weather conditions, dew, installation techniques or moisture drive conditions that may have adverse effects on the performance of the roof system.
- Apply only as much DEXcell FA Glass Mat Roof Boards as can be covered by a watertight roof covering the same day.
- Do not apply DEXcell FA Glass Mat Roof Boards to wet roofing substrates.

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Handling and Project Conditions

- Avoid water exposure during shipping, handling, storage, installation and after installation of roof boards.
- Remove nonbreathable shipping wrap material upon receiving and storing roof boards.
- Store roof boards off the ground and under cover. Store boards flat. Use sufficient supports extending under the entire length of roof boards to prevent sagging.
- Keep roof boards dry to minimize the potential for mold growth. Take adequate care while transporting, storing, applying and maintaining roof boards.
- Do not apply roof boards with visible signs of moisture damage or mold growth. Do not apply roof boards over other building materials where conditions exist that are favorable to mold growth.

Maintenance Following Application

- Maintain essential elements of sound weather-tight building envelope, including roofing, joint sealants, penetrations and flashings.
- Take immediate and appropriate remediation measures as soon as water leaks or condensation sources are identified.
- Perform routine cleaning and maintenance operations using methods that prevent leaks and resulting moisture saturation of roof boards.

Packaging

4' x 4' DEXcell FA Glass Mat	**¼"**	**½"**	**⅝"**
Pieces per pallet	60	48	44
Sq. Ft. per pallet	960	768	704
Weight per pallet	1,200	1,612	1,964
Sq. ft. per truck	38,400	23,040	16,900
Weight per truck, lbs.	48,000	48,384	47,139
4' x 8' DEXcell FA Glass Mat	**¼"**	**½"**	**⅝"**
Pieces per pallet	44	30	30
Sq. Ft. per pallet	1,408	960	960
Weight per pallet	1,760	2,016	2,678
Sq. ft. per truck	38,020	23,040	17,280
Weight per truck, lbs.	47,520	48,384	48,211

Any protective plastic factory packaging that is used to wrap DEXcell Roof Boards for shipment is intended to provide temporary protection from exposure to moisture only, and is not intended to provide protection during storage after delivery.

DEXcell FA Glass Mat Roof Board

Typical Properties and Characteristics

Property	¼" DEXcell FA Glass Mat	½" DEXcell FA Glass Mat	⅝" DEXcell FA Glass Mat
Thickness[1], Nominal	¼" (6.4 mm)	½" (12.7 mm)	⅝" (15.9 mm)
Width[1], Nominal	4' (1,219 mm)	4' (1,219 mm)	4' (1,219 mm)
Length[1], Standard	4' (1,219 mm), 8' (2,438 mm)	4' (1,219 mm), 8' (2,438 mm)	4' (1,219 mm), 8' (2,438 mm)
Weight, Nominal	1.2 lbs./sq. ft. (5.9 k/m^2)	2.0 lbs./sq. ft. (10 k/m^2)	2.5 lbs./sq. ft. (12 k/m^2)
Edges[1]	Square	Square	Square
Flexural Strength[1], Parallel	≥ 40 lbf. (178 N)	≥ 80 lbf. (356 N)	≥ 100 lbf. (445 N)
Bending Radius	4' (1,219 mm)	6' (1,829 mm)	8' (2,438 mm)
Thermal Resistance[4]	R = .23	R = .43	R = .5
Permeance[5]	25 perms	24 perms	23 perms
Water Absorption[1] (% of Weight)	≤ 5%	≤ 5%	≤ 5%
Surface Water Absorption[7]	≤ 1.0g	≤ 1.0g	≤ 1.0g
Surfacing	Coated Fiberglass	Coated Fiberglass	Coated Fiberglass
Flute Spanability[6]	2 ⅝" (66.7 mm)	5" (127 mm)	8" (203 mm)
Compressive Strength[7]	900 psi	900 psi	900 psi
Mold Resistance[8], ASTM D3273	Score of 10	Score of 10	Score of 10
Product Standard Compliance	ASTM C1177	ASTM C1177	ASTM C1177
Fire-Resistance Characteristics			
Core Type	Regular	Regular	Type X
UL Type Designation	DEXcell	DEXcell	FSW-6
Combustibility[2]	Non-combustible	Non-combustible	Non-combustible
Surface Burning Characteristics[3]	Class A	Class A	Class A
Flame Spread[3]	0	0	0
Smoke Development[3]	0	0	0
Fire Classification	UL Classified, FM Approved	UL Classified, FM Approved	UL Classified, FM Approved

[1] Specified values per ASTM C1177, tested in accordance with ASTM C473.
[2] Tested in accordance with ASTM E136.
[3] Tested in accordance with ASTM E84.
[4] Tested in accordance with ASTM C518.
[5] Tested in accordance with ASTM E96.
[6] Tested in accordance with ASTM E661.
[7] Tested in accordance with ASTM C473.
[8] Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.

Applicable Standards and References

- ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*
- ASTM C518 *Standard Test Method for Steady-State Thermal* Transmission Properties by Means of the Heat Flow Meter Apparatus
- ASTM C1177 *Standard Test Method for Glass Mat Gypsum Substrate for Use as Sheathing*
- ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*
- ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*
- ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*
- ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials.*
- ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750˚C*
- ASTM E661 *Standard Test Method for Performance of Wood and Wood-Based Floor and Roof Sheathing Under Concentrated Static and Impact Loads*
- Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*
- Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*

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