

**SECTION 06 16 43  
EXTERIOR SHEATHING**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

This section specifies gypsum board sheathing applied to frame wall construction, ready to receive subsequent finishes.

**1.2 RELATED WORK**

A. Load Bearing Framing: Section 05 40 00 Cold-Formed Metal Framing.

**1.3 SUBMITTALS**

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Samples: 1. gypsum board panels, 200 mm by 200 mm (8 inches by 8 inches), minimum size.
2. Fasteners, each type used.
3. Reinforcing tape for joints 300 mm (12 inches) long.
- C. Product Data:
1. Gypsum board sheathing.
2. Reinforcing tape.
3. Fasteners.

**1.4 DELIVERY AND STORAGE**

- A. Deliver materials in containers with labels legible and intact.
- B. Store materials so as to prevent damage or contamination.

**1.5 APPLICABLE PUBLICATIONS**

- A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only.
- B. ASTM International (ASTM):
1. ASTM C473 Standard Test Methods for Physical Testing of Gypsum Panel Products.
2. ASTM C518 Standard Testing Method for Steady-State Thermal Transmission Properties by Means of Heat Flow Meter Apparatus.
3. ASTM C1002 Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
4. ASTM C1177 Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
5. ASTM C1280 Standard Specification for Application of Gypsum Sheathing.
6. ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environment Chamber.

7. ASTM D6329 Standard Guide for Developing Methodology for Evaluating the Ability of Indoor Materials to Support Microbial Growth Using Static Environmental Chambers.
8. ASTM E72 Standard Test Methods of Conducting Strength Tests of Panels for Building Construction.
9. ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials.

C. Gypsum Association (GA): GA-253 Application of Gypsum Sheathing.

## **1.2 WARRANTY: MANUFACTURERS WARRANTY**

- A. Five years against manufacturing defects.

## **PART 2 - PRODUCTS**

### **2.1 FIBERGLASS MAT GYPSUM SHEATHING**

A. Fiberglass gypsum sheathing with square edge, conform to ASTM C1177.

B. Property Minimum Average Value

1. Thickness 13 mm (1/2 inch)
2. Minimum Width 800 mm (32 inches)
3. Weight 1.9 lbs/sf
4. Racking Strength (Ultimate, not design value) (ASTM E72): Not less than 540 pounds per square foot, dry.
5. Flexural Strength, Parallel (ASTM C473): 80 lbf, parallel.
6. Humidified Deflection (ASTM C1177): Not more than 2/8 inch.
7. Permeance (ASTM E96): 23 perms.
8. R-Value (ASTM C518): 0.56.
9. Mold Resistance (ASTM D3273): 10, in a test as manufactured.
10. Microbial Resistance (ASTM D6329, GREENGUARD 3-week protocol).

### **2.2 FIRE-RATED FIBERGLASS-MAT FACED GYPSUM SHEATHING: ASTM C1177, TYPE X:**

A. Properties:

1. Thickness: 5/8 inch.
2. Width: 4 feet.
3. Weight: 2.5 lb/sq. ft.
4. Edges: Square.
5. Surfacing: Fiberglass mat face, back, and long edges.
6. Racking Strength (Ultimate, not design value) (ASTM E72): Not less than 654 pounds per square foot, dry.
7. Flexural Strength, Parallel (ASTM C1177): 100 lbf, parallel.
8. Humidified Deflection (ASTM C1177): Not more than 1/8 inch.
9. Permeance (ASTM E96): Not more than 17 perms.
10. R-Value (ASTM C518): 0.67.
11. Mold Resistance (ASTM D3273): 10, in a test as manufactured.

12. Microbial Resistance (ASTM D6329, GREENGUARD 3-week protocol): Will not support microbial growth.

B. Location: Provide where indicated on drawings.

### **2.3 ACCESSORY MATERIALS**

A. Steel Drill Screws: ASTM C1002. Corrosion resistant treated.

B. Joint Reinforcing Tape:

1. Minimum 100 mm (4-inches) wide open mesh alkali resistant.
2. Glass fiber mesh polymer coated as recommended by Cement Board manufacturer.

## **PART 3 - EXECUTION**

### **3.1 ENVIRONMENTAL REQUIREMENTS**

A. Do not install units when temperature is below 4.5 degrees Celsius (40 degrees F).

B. Do not install joint reinforcing tape when temperature is below 10 degrees Celsius (50 degrees F).

### **3.2 INSTALLATION**

A. Remove wrapping and separate to allow air circulation for not less than seven days before installation.

B. Installing Sheathing: Comply with GA-253 and with manufacturer's written instructions.

1. Fasten gypsum sheathing to cold-formed metal framing with screws.
2. Secure units to framing members with screws spaced not more than 200 mm (8 inches) on center and not closer than 9.75 mm (3/8-inch) from the edge of the unit.
3. Install screws so that the screw heads are flush with the surface of unit.
4. Install boards with a 9.5-mm (3/8-inch) gap where non-load-bearing construction abuts structural elements.
5. Install boards with a 6.4-mm (1/4-inch) gap where they abut masonry or similar materials that might retain moisture, to prevent wicking.
6. Install vertical control joints not over 4.87 m (16 feet) on center unless shown otherwise, maintain alignment.
7. Stop units at edges of building expansion joints.
8. Minimum bearing over framing members: 19 mm (3/4-inch.)
9. Seal sheathing joints according to sheathing manufacturer's written instructions.
  - a. Apply glass-fiber sheathing tape to glass-mat gypsum sheathing joints and apply and trowel silicone emulsion sealant to embed entire face of tape in sealant. Apply sealant to exposed fasteners with a trowel so fasteners are completely covered. Seal other penetrations and openings.

- C. Joint and Surface Treatment: Apply joint reinforcing tape over joints, exposed edges, and corners using adhesive recommended by manufacturer.
- D. Leave surface flush and ready to receive subsequent finishes.

**3.3 PROTECTION AND REPAIR**

- A. Protect board with temporary coverings against moisture until subsequent finish is applied.
- B. Patch and repair damaged surface prior to application of subsequent finish.
  - 1. Fill cracks.
  - 2. Replace loose, spalling or missing joint finish.
  - 3. Replace broken or damaged boards.

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