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## SECTION 092900 - GYPSUM BOARD

### **TIPS:**

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## PART 1 - GENERAL

### 0.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

### 0.2 SUMMARY

A. Section Includes:

1. Interior gypsum board.
2. Exterior gypsum board for ceilings and soffits.
3. Tile backing panels.
4. Texture finishes.

B. Related Requirements:

1. Section 061600 "Sheathing" for gypsum sheathing for exterior walls.
2. Section 092216 "Non-Structural Metal Framing" for non-structural framing and suspension systems that support gypsum board panels.

3. Section 092116.23 "Gypsum Board Shaft Wall Assemblies" for metal shaft-wall framing, gypsum shaft liners, and other components of shaft-wall assemblies.
4. Section 092613 "Gypsum Veneer Plastering" for gypsum base for veneer plaster and for other components of gypsum-veneer-plaster finishes.
5. Section 093013 "Ceramic Tiling" for cementitious backer units installed as substrates for ceramic tile.

### 0.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. LEED Submittals:
  1. Product documentation for Credit MR 4 Recycled Content: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating contractor cost for each product having recycled content.
  2. Product documentation for Credit MR 5 Regional Materials: For products and materials to comply with requirements for regional materials, provide documentation indicating location of product or material manufacturing location and the point of extraction, harvest, or recovery for each raw material. Include distance to Project, contractor cost for each regional material, and percent by weight that is considered regional.
- C. Samples: For the following products:
  1. Trim Accessories: Full-size Sample in **12-inch- (300-mm-)** long length for each trim accessory indicated.
  2. Textured Finishes: [**Manufacturer's standard size**] **<Insert size>** for each textured finish indicated and on same backing indicated for Work.

### 0.4 QUALITY ASSURANCE

- A. Mockups: Before beginning gypsum board installation, install mockups of at least **100 sq. ft. (9 sq. m)** in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.
  1. Install mockups for the following:
    - a. Each level of gypsum board finish indicated for use in exposed locations.
    - b. Each texture finish indicated.
  2. Apply or install final decoration indicated, including painting and wallcoverings, on exposed surfaces for review of mockups.
  3. Simulate finished lighting conditions for review of mockups.
  4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

## 0.5 DELIVERY, STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

## 0.6 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.
- B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
  - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or blotchy surface contamination and discoloration.

## PART 2 - PRODUCTS

### 0.1 PERFORMANCE REQUIREMENTS

- A. Moisture- and Mold-Resistant Assemblies: Provide and install moisture- and mold-resistant glass-mat gypsum wallboard products with moisture-resistant surfaces complying with ASTM C 1658 and ASTM C 1177 where indicated on Drawings and in all locations which might be subject to moisture exposure during construction.
- B. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
- C. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.
- D. Low-Emitting Materials: For ceiling and wall assemblies, provide materials and construction identical to those tested in assembly and complying with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

### 0.2 GYPSUM BOARD, GENERAL

- A. Recycled Content of Gypsum Panel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than <Insert number> percent.

## B. Regional Materials:

1. For LEED MR 5, Option 1 compliance, gypsum panel products shall be manufactured within **500 miles (800 km)** of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within **500 miles (800 km)** of Project site.
2. For LEED MR 5, Option 2 compliance, gypsum panel products shall comply with following extraction and manufacturing criteria: (Distance by rail/3) + (Distance by inland waterway/2) + (Distance by seal/15) + (Distance by all other means) < **500 miles (800 kilometers)**.

- C. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

## 0.3 INTERIOR GYPSUM BOARD

- A. Basis-of-Design Product: The design for each type of gypsum board and related products is based on Georgia-Pacific Gypsum products named. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:

1. American Gypsum.
2. CertainTeed Corp.
3. Lafarge North America Inc.
4. National Gypsum Company.
5. PABCO Gypsum.
6. Temple-Inland.
7. USG Corporation.
8. <**Insert manufacturer's name**>.

- B. Gypsum Wallboard: ASTM C 1396/C 1396M.

1. Basis-of-Design Product: Georgia-Pacific Gypsum; "**DensArmor Plus High-Performance Interior Panel** [**ToughRock Gypsum Board**]."
2. Thickness: **1/2 inch (12.7 mm)**.
3. Long Edges: Tapered.

- C. Gypsum Board, Type X: ASTM C 1396/C 1396M.

1. Basis-of-Design Product: Georgia-Pacific Gypsum; "**DensArmor Plus Fireguard High-Performance Interior Panel** [**ToughRock Fireguard Gypsum Board**]."
2. Thickness: **5/8 inch (15.9 mm)**.
3. Long Edges: Tapered.

- D. Flexible Gypsum Board: ASTM C 1396/C 1396M. Manufactured to bend to fit radii and to be more flexible than standard regular-type gypsum board of same thickness.

1. Basis-of-Design Product: Georgia-Pacific Gypsum; "ToughRock FlexRoc Gypsum Board".
2. Thickness: **1/4 inch (6.4 mm)**.
3. Long Edges: Tapered.

- E. Gypsum Ceiling Board: ASTM C 1396/C 1396M.
1. Basis-of-Design Product: Georgia-Pacific Gypsum; "[**DensArmor Plus High-Performance Interior Panel**] [**ToughRock CD Ceiling Board**]."
  2. Thickness: **1/2 inch (12.7 mm)**.
  3. Long Edges: Tapered.
- F. Foil-Backed Gypsum Board: ASTM C 1396/C 1396M.
1. Core: [**As indicated on Drawings**] [**3/8 inch (9.5 mm), regular type**] [**1/2 inch (12.7 mm), regular type**] [**5/8 inch (15.9 mm), Type X**] [**Type C as required by fire-resistance-rated assembly indicated on Drawings**].
  2. Long Edges: [**Tapered**] [**Tapered and featured (rounded or beveled) for prefilling**].
- G. Abuse-Resistant Gypsum Board: ASTM C 1629/C 1629M, [**Level 1**] [**Level 2**] [**Level 3**].
1. Basis-of-Design Product: Georgia-Pacific Gypsum; "[**DensArmor Plus Abuse-Resistant Panel**] [**ToughRock Abuse-Guard Gypsum Board**]".
  2. Thickness: **5/8 inch (15.9 mm)**.
  3. Long Edges: Tapered.
- H. Impact-Resistant Gypsum Board: ASTM C 1629/C 1629M.
1. Basis-of-Design Product: Georgia-Pacific Gypsum; "DensArmor Plus Impact-Resistant Panel".
  2. Thickness: **5/8 inch (15.9 mm)**.
  3. Long Edges: Tapered.
  4. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.
- I. Moisture- and Mold-Resistant Gypsum Board: ASTM C 1396/C 1396M. With moisture- and mold-resistant core and paper surfaces.
1. Basis-of-Design Product: Georgia-Pacific-P Gypsum; "[**DensArmor Plus High-Performance Interior Panel**] [**DensArmor Plus Fireguard High-Performance Interior Panel**] [**DensArmor Plus Fireguard C High-Performance Interior Panel**] [**ToughRock Mold-Guard Gypsum Panel**]"
  2. Core: [**As indicated**] [**1/2 inch (12.7 mm), regular type**] [**5/8 inch (15.9 mm), Type X**] [**1/2 inch (12.7 mm), type C**] [**5/8 inch (15.9 mm), Type C**].
  3. Long Edges: Tapered.
  4. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

#### 0.4 SPECIALTY GYPSUM BOARD

- A. Gypsum Board, Type C: ASTM C 1396/C 1396M. Manufactured to have increased fire-resistive capability.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Georgia-Pacific Gypsum; "[**DensArmor Plus Fireguard C High-Performance Interior Panel**] [**ToughRock Fireguard C Gypsum Board**]" or a comparable product by one of the following:

- a. American Gypsum.
  - b. CertainTeed Corp.
  - c. Lafarge North America Inc.
  - d. National Gypsum Company.
  - e. PABCO Gypsum.
  - f. Temple-Inland.
  - g. USG Corporation.
  - h. <Insert manufacturer's name>.
2. Thickness: As required by fire-resistance-rated assembly indicated on Drawings.
  3. Long Edges: Tapered.
- B. Glass-Mat Interior Gypsum Board: ASTM C 1658/C 1658M. With fiberglass mat laminated to both sides. Specifically designed for interior use.
1. Products: Subject to compliance with requirements, **[provide the following]** **[provide one of the following]** **[available products that may be incorporated into the Work include, but are not limited to, the following]**:
    - a. Georgia-Pacific Gypsum LLC; DensArmour Plus.
    - b. <Insert manufacturer's name; product name or designation>.
  2. Core: [As indicated] **[1/2 inch (12.7 mm), regular type]** **[1/2 inch (12.7 mm), Type C]** **[5/8 inch (15.9 mm), Type X]** **[5/8 inch (15.9 mm), Type C]** **[5/8 inch (15.9 mm), abuse resistant]** **[5/8 inch (15.9 mm), impact resistant]**.
  3. Long Edges: Tapered.
  4. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.
- C. Acoustically Enhanced Gypsum Board: ASTM C 1396/C 1396M. Multilayer products constructed of two layers of gypsum boards sandwiching a viscoelastic sound-absorbing polymer core.
1. Products: Subject to compliance with requirements, **[provide the following]** **[provide one of the following]** **[available products that may be incorporated into the Work include, but are not limited to, the following]**:
    - a. National Gypsum Company; Sound Break.
    - b. Quiet Solution, Quiet Rock.
    - c. <Insert manufacturer's name; product name or designation>.
  2. Core: [As indicated] **[1/2 inch (12.7 mm), regular type]** **[1/2 inch (12.7 mm), Type X]** **[5/8 inch (15.9 mm), regular type]** **[5/8 inch (15.9 mm), Type X]** **[1-3/8 inch (35 mm), regular type]**.
  3. Long Edges: Tapered.
- D. Skim-Coated Gypsum Board: ASTM C 1396/C 1396M. Manufactured with a factory-applied skim coat.
1. Products: Subject to compliance with requirements, **[provide the following]** **[provide one of the following]** **[available products that may be incorporated into the Work include, but are not limited to, the following]**:

- a. Lafarge North America Inc.; Rapid Deco L5.
  - b. <Insert manufacturer's name; product name or designation>.
2. Core: [As indicated] [**1/2 inch (12.7 mm), regular type**] [**5/8 inch (15.9 mm), Type X**].
  3. Long Edges: Tapered.

## 0.5 EXTERIOR GYPSUM BOARD FOR CEILINGS AND SOFFITS

- A. Exterior Gypsum Soffit Board: ASTM C 1396/C 1396M, with manufacturer's standard edges.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Georgia-Pacific Gypsum; "ToughRock Soffit Board" or a comparable product by one of the following:
    - a. American Gypsum.
    - b. CertainTeed Corp.
    - c. Lafarge North America Inc.
    - d. National Gypsum Company.
    - e. PABCO Gypsum.
    - f. Temple-Inland.
    - g. USG Corporation.
    - h. <Insert manufacturer's name>.
  2. Core: [As indicated] [**1/2 inch (12.7 mm), regular type**] [**5/8 inch (15.9 mm), Type X**].
- B. Glass-Mat Gypsum Sheathing Board: ASTM C 1177/C 1177M, with fiberglass mat laminated to both sides and with manufacturer's standard edges.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Georgia-Pacific Gypsum; "DensGlass Sheathing" or a comparable product by one of the following:
    - a. CertainTeed Corp.
    - b. National Gypsum Company.
    - c. USG Corporation.
    - d. <Insert manufacturer's name>.
  2. Core: [As indicated] [**1/2 inch (12.7 mm), regular type**] [**5/8 inch (15.9 mm), Type X**].
- C. Cellulose Fiber-Reinforced Gypsum Sheathing Board: ASTM C 1278/C 1278M, gypsum sheathing, with manufacturer's standard edges.
1. Products: Subject to compliance with requirements, [**provide the following**] [**provide one of the following**] [**available products that may be incorporated into the Work include, but are not limited to, the following**]:
    - a. USG Corporation; Fiberock Aqua-Tough.
    - b. <Insert manufacturer's name; product name or designation>.
  2. Type and Thickness: [**Regular, 1/2 inch (13 mm)**] [**Type X, 5/8 inch (15.9 mm)**] thick.

3. Size: [48 by 96 inches (1219 by 2438 mm)] [48 by 108 inches (1219 by 2743 mm)] [48 by 120 inches (1219 by 3048 mm)] [1200 by 2400 mm] [1200 by 2750 mm] [1200 by 3050 mm].

D. Glass-Mat Gypsum Interior Board: ASTM C 1658/1658M, with fiberglass mat laminated to both sides and with manufacturer's standard edges.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Georgia-Pacific Gypsum; "DensArmor Plus" or a comparable product by one of the following:
  - a. National Gypsum Company.
  - b. <Insert manufacturer's name>.
2. Core: [As indicated] [1/2 inch (12.7 mm), regular type] [5/8 inch (15.9 mm), Type X].
3. Long Edges: Tapered.

#### 0.6 TILE BACKING PANELS

A. Glass-Mat, Water-Resistant Backing Board: ASTM C 1178/C 1178M, with manufacturer's standard edges.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Georgia-Pacific Gypsum; "DensShield Tile Backer" or a comparable product by one of the following:
  - a. CertainTeed Corp.
  - b. <Insert manufacturer's name>.
2. Core: [As indicated on Drawings] [1/2 inch (12.7 mm), regular type] [5/8 inch (15.9 mm), Type X].
3. Long Edges: Square.
4. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

B. Cementitious Backer Units: ANSI A118.9 and ASTM C 1288 or 1325, with manufacturer's standard edges.

1. Products: Subject to compliance with requirements, [provide the following] [provide one of the following] [available products that may be incorporated into the Work include, but are not limited to, the following]:
  - a. C-Cure; C-Cure Board 990.
  - b. CertainTeed Corp.; FiberCement [Underlayment] [BackerBoard].
  - c. Custom Building Products; [Wonderboard] [EasyBoard].
  - d. FinPan, Inc.; [Util-A-Crete Concrete Backer Board] [EZ Backer] [ProTEC].
  - e. James Hardie Building Products, Inc.; [Hardiebacker] [Hardiebacker 500].
  - f. National Gypsum Company, Permabase Cement Board.
  - g. USG Corporation; DUROCK Cement Board.
  - h. <Insert manufacturer's name; product name or designation>.



2. Thickness: [**1/4 inch (6.4 mm)**] [**1/2 inch (12.7 mm)**] [**5/8 inch (15.9 mm)**] [**As indicated**].
3. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

## 0.7 TRIM ACCESSORIES

### A. Interior Trim: ASTM C 1047.

1. Material: [**Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized steel sheet**] [**Galvanized or aluminum-coated steel sheet or rolled zinc**] [**Plastic**] [**Paper-faced galvanized steel sheet**].
2. Shapes:
  - a. Cornerbead.
  - b. Bullnose bead.
  - c. LC-Bead: J-shaped; exposed long flange receives joint compound.
  - d. L-Bead: L-shaped; exposed long flange receives joint compound.
  - e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
  - f. Expansion (control) joint.
  - g. Curved-Edge Cornerbead: With notched or flexible flanges.

### B. Exterior Trim: ASTM C 1047.

1. Material: [**Hot-dip galvanized steel sheet, plastic, or rolled zinc**] <Insert material>.
2. Shapes:
  - a. Cornerbead.
  - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
  - c. Expansion (Control) Joint: One-piece, rolled zinc with V-shaped slot and removable strip covering slot opening.

### C. Aluminum Trim: Extruded accessories of profiles and dimensions indicated.

1. Manufacturers: Subject to compliance with requirements, [**provide products by the following**] [**provide products by one of the following**] [**available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following**]:
  - a. Fry Reglet Corp.
  - b. Gordon, Inc.
  - c. Pittcon Industries.
  - d. <Insert manufacturer's name>.
2. Aluminum: Alloy and temper with not less than the strength and durability properties of **ASTM B 221 (ASTM B 221M)**, Alloy 6063-T5.
3. Finish: [**Corrosion-resistant primer compatible with joint compound and finish materials specified**] <Insert requirements for Class II anodic finishes and factory-painted, baked-enamel finishes>.

## 0.8 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C 475/C 475M.
- B. Joint Tape:
1. Interior Gypsum Board: Paper.
  2. Exterior Gypsum Soffit Board: Paper.
  3. Exterior Glass Mat Gypsum Soffit: Fiberglass mesh.
  4. Glass-Mat Gypsum Wallboard: 10-by-10 fiberglass mesh.
  5. Glass-Mat Gypsum Sheathing Board: 10-by-10 fiberglass mesh.
  6. Tile Backing Panels: As recommended by panel manufacturer.
- C. Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
1. Prefilling: At open joints[, **rounded or beveled panel edges,**] and damaged surface areas, use setting-type taping compound.
    - a. Basis-of-Design Product: Georgia-Pacific Gypsum; "[**ToughRock Setting Compound**] [**ToughRock Sandable Setting Compound**]."
  2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use [**setting-type taping**] [**drying-type, all-purpose**] compound.
    - a. Basis-of-Design Product: Georgia-Pacific Gypsum; "[**ToughRock Setting Compound**] [**ToughRock Sandable Setting Compound**] [**ToughRock Ready Mix All-Purpose Joint Compound**]."
    - b. Use setting-type compound for installing paper-faced metal trim accessories.
  3. Fill Coat: For second coat, use [**setting-type, sandable topping**] [**drying-type, all-purpose**] compound.
    - a. Basis-of-Design Product: Georgia-Pacific Gypsum; "[**ToughRock Setting Compound**] [**ToughRock Sandable Setting Compound**] [**ToughRock Ready Mix All-Purpose Joint Compound**] [**ToughRock Ready Mix Topping Joint Compound**]."
  4. Finish Coat: For third coat, use [**setting-type, sandable topping**] [**drying-type, all-purpose**] compound.
    - a. Basis-of-Design Product: Georgia-Pacific Gypsum; "[**ToughRock Setting Compound**] [**ToughRock Sandable Setting Compound**] [**ToughRock Ready Mix All-Purpose Joint Compound**] [**ToughRock Ready Mix Topping Joint Compound**]."
  5. Skim Coat: For final coat of Level 5 finish, use [**setting-type, sandable topping compound**] [**drying-type, all-purpose compound**] [**high-build interior coating product designed for application by airless sprayer and to be used instead of skim coat to produce Level 5 finish**].

- a. Basis-of-Design Product: Georgia-Pacific Gypsum; "[**ToughRock Setting Compound**] [**ToughRock Sandable Setting Compound**] [**ToughRock Ready Mix All-Purpose Joint Compound**] [**ToughRock Ready Mix Topping Joint Compound**]."

D. Joint Compound for Exterior Soffit Applications:

1. Basis-of-Design Product: Georgia-Pacific Gypsum; "ToughRock Setting Compound."
2. Exterior Gypsum Soffit Board: Use setting-type taping compound and setting-type, sandable topping compound.
3. Glass-Mat Gypsum Sheathing Board: As recommended by sheathing board manufacturer.

E. Joint Compound for Tile Backing Panels:

1. Glass-Mat, Water-Resistant Backing Panel: As recommended by backing panel manufacturer.
2. Cementitious Backer Units: As recommended by backer unit manufacturer.

## 0.9 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

- B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.

1. Laminating adhesive shall have a VOC content of [50] <Insert value> g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
2. Laminating adhesive shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

- C. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

1. Use screws complying with ASTM C 954 for fastening panels to steel members from **0.033 to 0.112 inch (0.84 to 2.84 mm)** thick.
2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

- D. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.

1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
2. Recycled Content of Blankets: Postconsumer recycled content plus one-half of preconsumer recycled content not less than <Insert number> percent.

- E. Acoustical Joint Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through

perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.

1. Products: Subject to compliance with requirements, **[provide the following]** **[provide one of the following]** **[available products that may be incorporated into the Work include, but are not limited to, the following]**:
  - a. Accumetric LLC; BOSS 824 Acoustical Sound Sealant.
  - b. Grabber Construction Products; Acoustical Sealant GSC.
  - c. Pecora Corporation; **[AC-20 FTR]** **[AIS-919]**.
  - d. Specified Technologies, Inc.; Smoke N Sound Acoustical Sealant.
  - e. USG Corporation; SHEETROCK Acoustical Sealant.
  - f. **<Insert manufacturer's name; product>**.
2. Acoustical joint sealant shall have a VOC content of **[250]** **<Insert value>** g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
3. Acoustical joint sealant shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

F. Thermal Insulation: As specified in Section 072100 "Thermal Insulation."

G. Vapor Retarder: As specified in Section 072100 "Thermal Insulation."

#### 0.10 TEXTURE FINISHES

A. Primer: As recommended by textured finish manufacturer.

B. Polystyrene Aggregate Ceiling Finish: Water-based, job-mixed, polystyrene aggregate finish with flame-spread and smoke-developed indexes of not more than 25 when tested according to ASTM E 84.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Georgia-Pacific Gypsum "ToughRock Ceiling Textures/Polystyrene"; or a comparable product by one of the following:
  - a. National Gypsum Company.
  - b. USG Corporation.
  - c. **<Insert manufacturer's name>**.

2. Texture: **[Fine]** **[Medium]** **[Coarse]**.

C. Aggregate Finish: Water-based, job-mixed, aggregated, drying-type texture finish for spray application.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Georgia-Pacific Gypsum "ToughRock Ceiling Textures/Vermiculite" or a comparable product by one of the following:
  - a. CertainTeed Corp.

- b. USG Corporation.
  - c. <Insert manufacturer's name.>
2. Texture: [**Light spatter**] [**Spatter knock-down**] <Insert texture>.
- D. Non-Aggregate Finish: Pre-mixed, vinyl texture finish for spray application.
1. Products: Subject to compliance with requirements, [**provide the following**] [**provide one of the following**] [**available products that may be incorporated into the Work include, but are not limited to, the following**]:
    - a. CertainTeed Corp.; ProRoc Easi-Tex Spray Texture.
    - b. National Gypsum Company; Perfect Spray EM Texture.
    - c. USG Corporation; BEADEX FasTex Wall and Ceiling Spray Texture.
    - d. <Insert manufacturer's name; product name or designation>.
  2. Texture: [**Orange Peel**] [**Spatter**] [**Spatter knock-down**] <Insert texture>.
- E. Acoustical Finish: Water-based, chemical-setting or drying-type, job-mixed texture finish for spray application.
1. Products: Subject to compliance with requirements, [**provide the following**] [**provide one of the following**] [**available products that may be incorporated into the Work include, but are not limited to, the following**]:
    - a. International Cellulose Corp.; SonaSpray "fc."
    - b. USG Corporation; USG Acoustical Plaster Finish.
    - c. <Insert manufacturer's name; product name or designation>.
  2. Application Thickness: [**1/2 inch (12.7 mm)**] <Insert thickness>.
  3. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
    - a. Flame-Spread Index: [**25**] <Insert value> or less.
    - b. Smoke-Developed Index: [**50**] [**450**] <Insert value> or less.
  4. NRC: [**0.55**] <Insert NRC> according to ASTM C 423.

### PART 3 - EXECUTION

#### 0.1 EXAMINATION

- A. Examine areas and substrates including welded hollow-metal frames and framing, with Installer present, for compliance with requirements and other conditions affecting performance.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

- C. Proceed with installation only after unsatisfactory conditions have been corrected.

## 0.2 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than **1/16 inch (1.5 mm)** of open space between panels. Do not force into place.
- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Form control and expansion joints with space between edges of adjoining gypsum panels.
- F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
  - 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than **8 sq. ft. (0.7 sq. m)** in area.
  - 2. Fit gypsum panels around ducts, pipes, and conduits.
  - 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow **1/4- to 3/8-inch- (6.4- to 9.5-mm-)** wide joints to install sealant.
- G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide **1/4- to 1/2-inch- (6.4- to 12.7-mm-)** wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- I. Wood Framing: Install gypsum panels over wood framing, with floating internal corner construction. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members or provide control joints to counteract wood shrinkage.
- J. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.

- K. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

### 0.3 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:

1. Wallboard Type: [**As indicated on Drawings**] [**Vertical surfaces unless otherwise indicated**].
2. Type X: [**As indicated on Drawings**] [**Where required for fire-resistance-rated assembly**] [**Vertical surfaces unless otherwise indicated**] <Insert requirements>.
3. Flexible Type: [**As indicated on Drawings**] [**Apply in double layer at curved assemblies**].
4. Ceiling Type: [**As indicated on Drawings**] [**Ceiling surfaces**].
5. Foil-Backed Type: [**As indicated on Drawings**] <Insert requirements>.
6. Abuse-Resistant Type: [**As indicated on Drawings**] <Insert requirements>.
7. Impact-Resistant Type [**As indicated on Drawings**] <Insert requirements>.
8. Moisture- and Mold-Resistant Type: [**As indicated on Drawings**] <Insert requirements>.
9. Type C: [**As indicated on Drawings**] [**Where required for specific fire-resistance-rated assembly indicated**].
10. Glass-Mat Interior Type: [**As indicated on Drawings**] <Insert requirements>.
11. Acoustically Enhanced Type: [**As indicated on Drawings**] <Insert requirements>.
12. Skim-Coated Type: [**As indicated on Drawings**] <Insert requirements>.

- B. Single-Layer Application:

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.
2. On partitions/walls, apply gypsum panels [**vertically (parallel to framing)**] [**horizontally (perpendicular to framing)**] unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
  - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
  - b. At stairwells and other high walls, install panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly.
3. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

- C. Multilayer Application:

1. On ceilings, apply gypsum board indicated for base layers before applying base layers on walls/partitions; apply face layers in same sequence. Apply base layers at right angles to framing members and offset face-layer joints one framing member, **16 inches (400 mm)** minimum, from parallel base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly.

2. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
3. On Z-furring members, apply base layer vertically (parallel to framing) and face layer either vertically (parallel to framing) or horizontally (perpendicular to framing) with vertical joints offset at least one furring member. Locate edge joints of base layer over furring members.
4. Fastening Methods: [**Fasten base layers and face layers separately to supports with screws**] [**Fasten base layers with screws; fasten face layers with adhesive and supplementary fasteners**].

D. Laminating to Substrate: Where gypsum panels are indicated as directly adhered to a substrate (other than studs, joists, furring members, or base layer of gypsum board), comply with gypsum board manufacturer's written recommendations and temporarily brace or fasten gypsum panels until fastening adhesive has set.

E. Curved Surfaces:

1. Install panels horizontally (perpendicular to supports) and unbroken, to extent possible, across curved surface plus **12-inch- (300-mm-)** long straight sections at ends of curves and tangent to them.
2. For double-layer construction, fasten base layer to studs with screws **16 inches (400 mm)** o.c. Center gypsum board face layer over joints in base layer, and fasten to studs with screws spaced **12 inches (300 mm)** o.c.

#### 0.4 APPLYING EXTERIOR GYPSUM PANELS FOR CEILINGS AND SOFFITS

A. Apply panels perpendicular to supports, with end joints staggered and located over supports.

1. Install with **1/4-inch (6.4-mm)** open space where panels abut other construction or structural penetrations.
2. Fasten with corrosion-resistant screws.

#### 0.5 APPLYING TILE BACKING PANELS

A. Glass-Mat, Water-Resistant Backing Panels: Comply with manufacturer's written installation instructions and install at [**showers, tubs, and where indicated**] [**locations indicated to receive tile**]. Install with **1/4-inch (6.4-mm)** gap where panels abut other construction or penetrations.

B. Cementitious Backer Units: ANSI A108.11, at [**showers, tubs, and where indicated**] [**locations indicated to receive tile**].

C. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.



## 0.6 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints **[at locations indicated on Drawings]** **[according to ASTM C 840 and in specific locations approved by Architect for visual effect]**.
- C. Interior Trim: Install in the following locations:
  - 1. Cornerbead: Use at outside corners **[unless otherwise indicated]**.
  - 2. Bullnose Bead: Use **[at outside corners]** **[where indicated]** **<Insert requirements>**.
  - 3. LC-Bead: Use **[at exposed panel edges]** **<Insert requirements>**.
  - 4. L-Bead: Use **[where indicated]** **<Insert requirements>**.
  - 5. U-Bead: Use **[at exposed panel edges]** **[where indicated]** **<Insert requirements>**.
  - 6. Curved-Edge Cornerbead: Use at curved openings.
- D. Exterior Trim: Install in the following locations:
  - 1. Cornerbead: Use at outside corners.
  - 2. LC-Bead: Use **[at exposed panel edges]** **<Insert requirements>**.
- E. Aluminum Trim: Install in locations **[indicated on Drawings]** **<Insert requirements>**.

## 0.7 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints[, **rounded or beveled edges,**] and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
  - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
  - 2. Level 2: **[Panels that are substrate for tile]** **[Panels that are substrate for acoustical tile]** **[Where indicated on Drawings]** **<Insert locations>**.
  - 3. Level 3: **[Where indicated on Drawings]** **<Insert locations>**.
  - 4. Level 4: **[At panel surfaces that will be exposed to view unless otherwise indicated]** **<Insert locations>**.
    - a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."
  - 5. Level 5: **[Where indicated on Drawings]** **<Insert locations>**.

- a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."
- E. Glass-Mat Gypsum Sheathing Panel: Finish according to manufacturer's written instructions for use as exposed soffit board.
- F. Glass-Mat Faced Panels: Finish according to manufacturer's written instructions.
- G. Cementitious Backer Units: Finish according to manufacturer's written instructions.

#### 0.8 APPLYING TEXTURE FINISHES

- A. Surface Preparation and Primer: Prepare and apply primer to gypsum panels and other surfaces receiving texture finishes. Apply primer to surfaces that are clean, dry, and smooth.
- B. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture[ **matching approved mockup and**] free of starved spots or other evidence of thin application or of application patterns.
- C. Prevent texture finishes from coming into contact with surfaces not indicated to receive texture finish by covering them with masking agents, polyethylene film, or other means. If, despite these precautions, texture finishes contact these surfaces, immediately remove droppings and overspray to prevent damage according to texture-finish manufacturer's written recommendations.

#### 0.9 PROTECTION

- A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- C. Remove and replace panels that are wet, moisture damaged, and mold damaged.
  1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900