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SECTION 092900 - GYPSUM BOARD

TIPS:

To view non-printing **Editor's Notes** that provide guidance for editing, click on MasterWorks/Single-File Formatting/Toggle/Editor's Notes.

To read **detailed research, technical information about products and materials, and coordination checklists**, click on MasterWorks/Supporting Information.

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PART 1 - GENERAL

1.1 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 079219 "Acoustical Joint Sealants" for acoustical joint sealants installed in gypsum board assemblies.
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 092216 "Non-Structural Metal Framing" for non-structural steel framing and suspension systems that support gypsum board panels.
5. Section 092613 "Gypsum Veneer Plastering" for gypsum base for veneer plaster and for other components of gypsum-veneer-plaster finishes.
6. Section 093013 "Ceramic Tiling" for cementitious backer units installed as substrates for ceramic tile.

1.2 ACTION SUBMITTALS

A. Product Data: For the following:

1. Gypsum wallboard.
2. Gypsum board, Type X.
3. Gypsum board, Lightweight Type X.
4. Flexible gypsum board.
5. Gypsum ceiling board.
6. Foil-backed gypsum board.
7. Abuse-resistant gypsum board.
8. Impact-resistant gypsum board.
9. Mold-resistant gypsum board.
10. Gypsum board, Type C.
11. Glass-mat interior gypsum board.
12. Acoustically enhanced gypsum board.
13. Skim-coated gypsum board.
14. Exterior gypsum soffit board.
15. Glass-mat gypsum sheathing board.
16. Glass-mat, water-resistant backing board.
17. Cementitious backer units.
18. Water-resistant gypsum backing board.
19. Interior trim.
20. Exterior trim.
21. Aluminum trim.
22. Joint treatment materials.
23. Laminating adhesive.
24. Sound-attenuation blankets.
25. Acoustical sealant.
26. Textured finishes.

B. Shop Drawings: Show locations and installation of control and expansion joints, including plans, elevations, sections, details of components, and attachments to other work.

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.
- D. Samples for Initial Selection: For each type of [**trim accessory**] [**and**] [**textured finish**] indicated.
- E. Samples for Verification: 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.
- F. Sustainable Design Submittals:
1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
 2. Recycled Content: Provide manufacturer documentation for recycled content, indicating postconsumer and preconsumer recycled content.
 3. Health Product Declaration (HPD): Provide third-party verified documentation indicating that manufacturer has screened and publicly provided ingredient disclosure for each product to 1000 ppm, and has developed an action plan to mitigate known hazards.
 4. Product Certificates: For indigenous materials, indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include distance to Project, means of transportation, and cost for each indigenous material.
 5. Product Data: For adhesives and sealants, indicating VOC content.
 6. Laboratory Test Reports: For adhesives and sealants, indicating compliance with requirements for low-emitting materials.
 7. Laboratory Test Reports: For ceiling and wall materials, indicating compliance with requirements for low-emitting materials and GREENGUARD Gold (CDPH).

1.3 MOCKUPS

- A. Build mockups of at least **100 sq. ft. (9 sq. m)** in surface area to demonstrate aesthetic effects and to set quality standards for materials and execution.
1. Build 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.

1.4 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.

1.5 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C840 requirements or gypsum board manufacturer's written instructions, 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, 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.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

- A. Obtain each type of gypsum panel and joint finishing material from single source with resources to provide products of consistent quality in appearance and physical properties.

2.2 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated in accordance with ASTM E119 and CAN/ULC-S101 by an independent testing agency.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated in accordance with ASTM E90 and classified in accordance with ASTM E413 by an independent testing agency.
- C. Ceiling and wall materials to comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- D. Ceiling and wall materials to comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers." Formaldehyde emissions are not to exceed 16.5 mcg/cu. m or 13.5 ppb, whichever is less.

2.3 GYPSUM BOARD, GENERAL

- A. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than <Insert number> percent.
- B. Regional Materials: Products to be manufactured within 100 miles (160 km) of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles (160 km) of Project site.
- C. Indigenous Materials: Products to 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. If materials are transported by rail or water, the distance transported by rail or water shall be multiplied by 0.25 to determine the distance to Project site.
- D. Regional Materials: Products to 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. If materials are transported by rail or water, the distance transported by rail or water shall be multiplied by 0.25 to determine the distance to Project site.
- E. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.4 INTERIOR GYPSUM BOARD

- A. Gypsum Wallboard: ASTM C1396/C1396M.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; Regular Drywall or comparable product by one of the following:
 - a. Georgia-Pacific Gypsum LLC.
 - b. Gold Bond Building Products, LLC provided by National Gypsum Company.
 - c. USG Corporation.
 - d. <Insert manufacturer's name>.
 - 2. Thickness: [1/4-inch (6-mm)] [3/8-inch (9.5-mm)].
 - 3. Long Edges: [Tapered] [Tapered and featured (rounded or beveled) for prefilling].
- B. Lightweight Gypsum Wallboard: ASTM C1396/C1396M. Manufactured to be up to 30 percent lighter than traditional boards.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; Easi-Lite [30] [Lightweight Drywall] or comparable product by one of the following:
 - a. Georgia-Pacific Gypsum LLC.
 - b. National Gypsum Company.
 - c. USG Corporation.

- d. **<Insert manufacturer's name>**.
 2. Thickness: [**1/2 inch (12.7 mm)**] [**5/8 inch (15.9 mm)**].
 3. Long Edges: Tapered.
- C. Lightweight Type X Gypsum Wallboard: ASTM C1396/C1396M. Manufactured to be up to 10 percent lighter than traditional boards.
1. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; FireLite or comparable product by one of the following:
 - a. National Gypsum Company.
 - b. USG Corporation.
 - c. Georgia-Pacific Gypsum LLC
 - d. **<Insert manufacturer's name>**.
 2. Thickness: [**5/8 inch (15.9 mm)**].
 3. Long Edges: Tapered.
- D. Gypsum Board, Type X: ASTM C1396/C1396M.
1. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; CertainTeed Type X Gypsum Board or a comparable product by one of the following:
 - a. Georgia-Pacific Gypsum LLC.
 - b. Gold Bond Building Products, LLC provided by National Gypsum Company.
 - c. USG Corporation.
 - d. **<Insert manufacturer's name>**.
 2. Thickness: **5/8 inch (15.9 mm)**.
 3. Long Edges: [**Tapered**] [**Tapered and featured (rounded or beveled) for prefilling**].
- E. Flexible Gypsum Board: ASTM C1396/C1396M. Manufactured to bend to fit radii and to be more flexible than standard regular-type gypsum board of same thickness.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Georgia-Pacific Gypsum LLC.
 - b. Gold Bond Building Products, LLC provided by National Gypsum Company.
 - c. USG Corporation.
 - d. **<Insert manufacturer's name>**.
 2. Thickness: **1/4 inch (6.4 mm)**.
 3. Long Edges: Tapered.
- F. Gypsum Ceiling Board: ASTM C1396/C1396M.

PRODUCT MASTERSPEC LICENSED BY DELTEK, INC. TO CERTAINTEED GYPSUM; SAINT-GOBAIN

1. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; CertainTeed Easi-Lite Gypsum Board or comparable product by one of the following:
 - a. Georgia-Pacific Gypsum LLC.
 - b. Gold Bond Building Products, LLC provided by National Gypsum Company.
 - c. **<Insert manufacturer's name>**.
 2. Thickness: **1/2 inch (12.7 mm)**.
 3. Long Edges: Tapered.
- G. Foil-Backed Gypsum Board: ASTM C1396/C1396M.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Georgia-Pacific Gypsum LLC.
 - b. Gold Bond Building Products, LLC provided by National Gypsum Company.
 - c. **<Insert manufacturer's name>**.
 2. 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]**.
 3. Long Edges: **[Tapered] [Tapered and featured (rounded or beveled) for prefilling]**.
- H. Abuse-Resistant Gypsum Board: ASTM C1396/C1396M gypsum board, tested in accordance with ASTM C1629/C1629M.
1. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; CertainTeed Extreme Abuse Resistant Type X Gypsum Board with M2Tech Mold and Moisture Technology or comparable product by one of the following:
 - a. Georgia-Pacific Gypsum LLC.
 - b. Gold Bond Building Products, LLC provided by National Gypsum Company.
 - c. USG Corporation.
 - d. **<Insert manufacturer's name>**.
 2. Core: **5/8 inch (15.9 mm), Type X**.
 3. Surface Abrasion: ASTM C1629/C1629M, meets or exceeds **[Level 1] [Level 2] [Level 3]** requirements.
 4. Indentation: ASTM C1629/C1629M, meets or exceeds **[Level 1] [Level 2] [Level 3]** requirements.
 5. Soft-Body Impact: ASTM C1629/C1629M, meets or exceeds **[Level 1] [Level 2] [Level 3]** requirements.
 6. Long Edges: Tapered.
 7. Mold Resistance: ASTM D3273, score of 10 as rated in accordance with ASTM D3274.
- I. Impact-Resistant Gypsum Board: ASTM C1396/C1396M gypsum board, tested in accordance with ASTM C1629/C1629M.

PRODUCT MASTERSPEC LICENSED BY DELTEK, INC. TO CERTAINTEED GYPSUM; SAINT-GOBAIN

1. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; CertainTeed Extreme Impact Resistant Type X Gypsum Board with M2Tech Mold and Moisture Technology or comparable product by one of the following:
 - a. Georgia-Pacific Gypsum LLC.
 - b. Gold Bond Building Products, LLC provided by National Gypsum Company.
 - c. USG Corporation.
 - d. **<Insert manufacturer's name>**.
 2. Core: **5/8 inch (15.9 mm)**, Type X.
 3. Surface Abrasion: ASTM C1629/C1629M, meets or exceeds [Level 1] [Level 2] [Level 3] requirements.
 4. Indentation: ASTM C1629/C1629M, meets or exceeds [Level 1] [Level 2] [Level 3] requirements.
 5. Soft-Body Impact: ASTM C1629/C1629M, meets or exceeds [Level 1] [Level 2] [Level 3] requirements.
 6. Hard-Body Impact: ASTM C1629/C1629M, meets or exceeds [Level 1] [Level 2] [Level 3] requirements in accordance with test in Annex A1.
 7. Long Edges: Tapered.
 8. Mold Resistance: ASTM D3273, score of 10 as rated in accordance with ASTM D3274.
- J. Mold-Resistant Gypsum Board: ASTM C1396/C1396M. With moisture- and mold-resistant core and paper surfaces.
1. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; CertainTeed M2Tech Mold and Moisture Resistant Type X Gypsum Board or comparable product by one of the following:
 - a. Georgia-Pacific Gypsum LLC.
 - b. Gold Bond Building Products, LLC provided by National Gypsum Company.
 - c. USG Corporation.
 - d. **<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: Tapered.
 4. Mold Resistance: ASTM D3273, score of 10 as rated in accordance with ASTM D3274.

2.5 SPECIALTY GYPSUM BOARD

- A. Gypsum Board, Type C: ASTM C1396/C1396M. Manufactured to have increased fire-resistive capability.
1. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; CertainTeed Type C Gypsum Board or comparable product by one of the following:
 - a. Georgia-Pacific Gypsum LLC.

- b. Gold Bond Building Products, LLC provided by National Gypsum Company.
 - c. USG Corporation.
 - d. **<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 C1658/C1658M. With fiberglass mat laminated to both sides. Specifically designed for interior use.
 1. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; GlasRoc Interior [**Type X**] or comparable product by one of the following:
 - a. Georgia-Pacific Gypsum LLC.
 - b. Gold Bond Building Products, LLC provided by National Gypsum Company.
 - c. USG Corporation.
 - d. **<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: Tapered.
 4. Mold Resistance: ASTM D3273, score of 10 as rated in accordance with ASTM D3274.
- C. Acoustically Enhanced Gypsum Board: ASTM C1766. Multilayer products constructed of two layers of gypsum boards sandwiching a viscoelastic sound-absorbing polymer core.
 1. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; CertainTeed SilentFX QuickCut Type X Acoustical Gypsum Board or comparable product by one of the following:
 - a. Gold Bond Building Products, LLC provided by National Gypsum Company.
 - b. PABCO Gypsum.
 - c. **<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: Tapered.
 4. Mold Resistance: ASTM D3273, score of 10 (no mold growth) as rated in accordance with ASTM D3274.
 5. Surface Abrasion: ASTM C1629/C1629M, complies with or exceeds Level 1 requirements.
 6. Indentation: ASTM C1629/C1629M, complies with or exceeds Level 1 requirements.
 7. Soft-Body Impact: ASTM C1629/C1629M, complies with or exceeds Level 2 requirements.

2.6 EXTERIOR GYPSUM BOARD FOR CEILINGS AND SOFFITS

- A. Exterior Gypsum Soffit Board: ASTM C1396/C1396M, with manufacturer's standard edges.

1. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; Exterior Soffit [**Type C**] [**Type X**] or comparable product by one of the following:
 - a. Georgia-Pacific Gypsum LLC.
 - b. Gold Bond Building Products, LLC provided by National Gypsum Company.
 - c. USG Corporation.
 - d. **<Insert manufacturer's name>**.
 2. Core: [**As indicated on Drawings**] [**5/8 inch (15.9 mm), Type C**] [**5/8 inch (15.9 mm), Type X**].
- B. Glass-Mat Gypsum Sheathing Board: ASTM C1177/C1177M, with fiberglass mat laminated to both sides and with manufacturer's standard edges.
1. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; GlasRoc Sheathing or comparable product by one of the following:
 - a. Georgia-Pacific Gypsum LLC.
 - b. Gold Bond Building Products, LLC provided by National Gypsum Company.
 - c. USG Corporation.
 - d. **<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**].

2.7 TILE BACKING PANELS

- A. Glass-Mat, Water-Resistant Backing Board: ASTM C1178/C1178M, with manufacturer's standard edges.
1. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; GlasRoc Tile Backer or comparable product by one of the following:
 - a. Georgia-Pacific Gypsum LLC.
 - b. Gold Bond Building Products, LLC provided by National Gypsum Company.
 - c. USG Corporation.
 - d. **<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. Mold Resistance: ASTM D3273, score of 10 as rated in accordance with ASTM D3274.
- B. Cementitious Backer Units: ANSI A118.9 and ASTM C1288 or ASTM C1325, with manufacturer's standard edges.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. C-Cure.
 - b. Custom Building Products.
 - c. FinPan, Inc.
 - d. James Hardie Building Products, Inc.
 - e. PermaBASE Building Products, LLC provided by National Gypsum Company.
 - f. USG Corporation.
 - g. <Insert manufacturer's name>.
2. Thickness: [**1/4 inch (6.4 mm)**] [**1/2 inch (12.7 mm)**] [**5/8 inch (15.9 mm)**] [**As indicated on Drawings**].
3. Mold Resistance: ASTM D3273, score of 10 as rated in accordance with ASTM D3274.

C. Water-Resistant Gypsum Backing Board: ASTM C1396/C1396M, with manufacturer's standard edges.

1. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; M2Tech Mold and Moisture Board or comparable product by one of the following:
 - a. Georgia-Pacific Gypsum LLC.
 - b. Gold Bond Building Products, LLC provided by National Gypsum Company.
 - c. USG Corporation.
 - d. <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**].

2.8 TRIM ACCESSORIES

A. Interior Trim: ASTM C1047.

1. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; [**AquaBead**] [**Levelline Flex**] [**Levelline Stick**] [**NO-COAT**] Drywall Corner Trim.
2. Material: [**Paper-plastic (PET)-paper copolymer mud-applied corner**] [**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**].
3. Shapes:
 - a. [**Outside**] [**Inside**] 90-degree corner profile.
 - b. Bullnose Corner Profile: [**3/4 inch (19.0 mm)**] [**and**] [**3/8 inch (9.5 mm)**].
 - c. Flex roll corner trim for off-angles.
 - d. L-trim corner profile.
 - e. Arch Corner Trim (90 degrees) with Notched Flanges: [**3/4 inch (19.0 mm)**] [**3/8 inch (9.5 mm)**].

- f. Cornerbead.
- g. Expansion (control) joint.
- h. Curved-Edge Cornerbead: With notched or flexible flanges.
- i. Base-of-Wall Galvanized Moisture Barrier Trim: Galvanized-steel sheet, **2 inches (50 mm)** high.
 - 1) Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a) VersaDry, LLC.
 - b) **<Insert manufacturer's name>**.
- j. Base-of-Wall PVC Moisture Barrier Trim: Extruded PVC, [**1/2 inch (12.7 mm)**] [**1-3/4 inch (44 mm)**] [**3-1/2 inch (89 mm)**] high.
 - 1) Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a) Waterguard.
 - b) **<Insert manufacturer's name>**.

B. Exterior Trim: ASTM C1047.

- 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 one of the following:
 - a. Flannery, Inc.
 - b. Fry Reglet Corporation.
 - c. Gordon Inc.
 - d. Pittcon Industries.
 - e. Tamlyn.
 - f. **<Insert manufacturer's name>**.
- 2. Aluminum: Alloy and temper with not less than the strength and durability properties of **ASTM B221 (ASTM B221M)**, 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>**.

2.9 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C475/C475M.
- B. Joint Tape:
 - 1. Interior Gypsum Board: Paper.
 - a. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; Marco Spark-Perf Drywall Joint Tape.
 - 2. Exterior Gypsum Soffit Board: 10-by-10 glass mesh.
 - 3. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
 - 4. 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. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; [**EXTREME Ready Mix**] [**Ready Mixed Joint Compound**] or comparable product.
 - 2. Prefilling: At open joints[, **rounded or beveled panel edges,**] and damaged surface areas, use setting-type taping compound.
 - 3. 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. Use setting-type compound for installing paper-faced metal trim accessories.
 - 4. Fill Coat: For second coat, use [**setting-type, sandable topping**] [**drying-type, all-purpose**] compound.
 - 5. Finish Coat: For third coat, use [**setting-type, sandable topping**] [**drying-type, all-purpose**] compound.
 - 6. 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**].
- D. Joint Compound for Exterior Applications:
 - 1. Exterior Gypsum Soffit Board: Use setting-type taping compound and setting-type, sandable topping compound.
 - 2. 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.
 - 3. Water-Resistant Gypsum Backing Board: Use setting-type taping compound and setting-type, sandable topping compound.

4. <Insert products>.

2.10 AUXILIARY MATERIALS

- A. Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.
- B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
1. Adhesives to have a VOC content of [50] <Insert value> g/L or less.
 2. Adhesive shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
 3. Adhesive to comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers." Formaldehyde emissions are not to exceed 9 mcg/cu. m or 7 ppb, whichever is less.
 4. Adhesive to comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers." The building concentration of formaldehyde is not to exceed half of the indoor recommended exposure limit or 33 mcg/cu. m and that of acetaldehyde is not to exceed 9 mcg/cu. m.
- C. Steel Drill Screws: ASTM C1002 unless otherwise indicated.
1. Use screws complying with ASTM C954 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 C665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
1. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; CertainTeed CertaPro Acousta Therm Batts or comparable product.
 2. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
 3. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than <Insert number> percent.
- E. Acoustical Sealant: As specified in Section 079219 "Acoustical Joint Sealants."
1. Sealant to have a VOC content of 250 g/L or less.

2. Sealant to comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
3. Sealant to comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers." Formaldehyde emissions are not to exceed 9 mcg/cu. m or 7 ppb, whichever is less.
4. Sealant to comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers." The building concentration of formaldehyde is not to exceed half of the indoor recommended exposure limit, or 33 mcg/cu. m, and that of acetaldehyde is not to exceed 9 mcg/cu. m.

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

G. Vapor Retarder: As specified in Section 072600 "Vapor Retarders."

2.11 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 in accordance with ASTM E84.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Georgia-Pacific Gypsum LLC.
 - 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 CertainTeed Gypsum; Saint-Gobain; Wall and Ceiling Spray Textures or comparable product by one of the following:
 - a. Georgia-Pacific Gypsum LLC.
 - b. ProForm Finishing Products, LLC provided by National Gypsum Company.
 - c. USG Corporation.
 - d. **<Insert manufacturer's name>**.

2. Texture: [**Light spatter**] [**Spatter knock-down**] **<Insert texture>**.

D. Non-Aggregate Finish: Premixed, vinyl texture finish for spray application.

1. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Gypsum; Saint-Gobain; Easi-Tex Spray Texture or comparable product by one of the following:
 - a. ProForm Finishing Products, LLC provided by National Gypsum Company.
 - b. USG Corporation.
 - c. **<Insert manufacturer's name>**.
 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. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. International Cellulose Corp.
 - b. USG Corporation.
 - c. **<Insert manufacturer's name>**.
 2. Application Thickness: **[1/2 inch (12.7 mm)] <Insert dimension>**.
 3. Surface-Burning Characteristics: As determined by testing identical products in accordance with ASTM E84 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>** in accordance with ASTM C423.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates including welded hollow-metal frames and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
- 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.

3.2 INSTALLATION AND FINISHING OF PANELS, GENERAL

- A. Comply with ASTM C840.

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- 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. 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 C919 and with manufacturer's written instructions 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.

3.3 INSTALLATION OF 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. 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-shaped 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-shaped 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**] [**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 instructions 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.

3.4 INSTALLATION OF 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.

3.5 INSTALLATION OF 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 on Drawings**] [**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 on Drawings**] [**locations indicated to receive tile**].
- C. Water-Resistant Backing Board: Install where indicated with **1/4-inch (6.4-mm)** gap where panels abut other construction or penetrations.
- D. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.

3.6 INSTALLATION OF 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**] [**in accordance with ASTM C840 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 on Drawings**] **<Insert requirements>**.
 - 3. LC-Bead: Use [**at exposed panel edges**] **<Insert requirements>**.
 - 4. L-Bead: Use [**where indicated on Drawings**] **<Insert requirements>**.
 - 5. U-Bead: Use [**at exposed panel edges**] [**where indicated on Drawings**] **<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>**.

3.7 FINISHING OF 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 in accordance with ASTM C840:
 - 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 Board: 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.

3.8 APPLICATION OF 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 instructions.

3.9 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