

SECTION 09 29 00 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior gypsum board.
2. Tile backing panels.
3. Option: ~~for~~ For gypsum sheathing interior.
4. Trim accessories.
5. Joint treatment, including for gypsum sheathing installed in Section 06 16 00.
6. Acoustical sealant.

B. Related Requirements:

1. Section 06 16 00 "Sheathing" for gypsum sheathing installed at interior partitions behind interior masonry and metal panel cladding.
2. Section 07 92 00 "Joint Sealants" for joint sealant requirements installed in gypsum board assemblies.
3. Section 09 22 16 "Non-Structural Metal Framing" for nonstructural steel framing and suspension systems that support gypsum board panels.
4. Section 09 30 00 "Tiling" for cementitious backer units installed as substrates for ceramic tile.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings:

1. Locations and installation of control and expansion joints, including plans, elevations, sections, and attachment details.

1.3 MOCKUPS

A. Build mockups of at least 100 sq. ft. 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 required for use in exposed locations.
2. Apply or install final decoration required, 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 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, or 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. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated on Drawings in accordance with ASTM E90 and classified in accordance with ASTM E413; tested by a qualified testing agency.

2.3 GYPSUM BOARD, GENERAL

- A. Size: Provide panel products in maximum lengths and widths available that will minimize joints in each area and that correspond with support system specified or indicated on Drawings.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Gypsum.
 - b. CertainTeed; SAINT-GOBAIN.
 - c. Georgia-Pacific Gypsum LLC.
 - d. Gold Bond Building Products, LLC provided by National Gypsum Company.
 - e. PABCO Gypsum.
 - f. USG Corporation.

2.4 INTERIOR GYPSUM BOARD

A. Interior Gypsum Board, General:

1. All gypsum board for walls and ceilings shall ~~by~~be 5/8-inch Type X unless otherwise indicated on Drawings.
2. Panel Sizes: 48 inches wide by length required.
3. Ceilings: Use Type X, Lightweight Type X or 1/2-inch ceiling board.
4. Gypsum Wallboard, Less than 5/8-inch: For shimming and where other thicknesses are indicated on Drawings.

B. Gypsum Board, 5/8": Type X, ASTM C1396/C1396M.

1. Thickness: 5/8 inch.
2. Long Edges: Tapered.

C. AR-MR, Abuse-, Impact-, Mold-, and Moisture-Resistant Gypsum Board: ASTM C1396/C1396M, tested in accordance with ASTM C1629/C1629M.

1. Core: 5/8 inch, Type X, UL PG-5W.
2. Surface Abrasion: ASTM C1629/C1629M, meets or exceeds Level 2 requirements.
3. Indentation: ASTM C1629/C1629M, meets or exceeds Level 2 requirements.
4. Soft-Body Impact: ASTM C1629/C1629M, meets or exceeds Level 3 requirements.
5. Hard-Body Impact: ASTM C1629/C1629M, meets or exceeds Level 3 requirements.
6. Mold Resistance: ASTM D3273, score of 10 as rated in accordance with ASTM D3274.
7. Long Edges: Tapered.

D. MR, Mold-/ Moisture- Resistant Gypsum Board: ASTM C1396/C1396M; manufactured with moisture- and mold-resistant core and paper surfaces.

1. Core: 5/8 inch, Type X.
2. Mold Resistance: ASTM D3273, score of 10 as rated in accordance with ASTM D3274.
3. Long Edges: Square or tapered.

E. Gypsum Wallboard: ASTM C1396/C1396M.

1. Thickness: As indicated on Drawings:
 - a. 1/4 inch.
 - b. 3/8 inch.
 - c. 1/2 inch.
2. Long Edges: Tapered for filling or square: appropriate for application.

F. Gypsum Ceiling Board: ASTM C1396/C1396M.

1. Acceptable where ceiling supports do not exceed 16-inch centers in lieu of 5/8 inch.
2. Thickness: 1/2 inch.
3. Long Edges: Tapered.

G. Option: Interior in Lieu of Gypsum Sheathing in Section 06 16 00:

1. Glass-mat Interior Gypsum Board, Pre-rock: ASTM C1658/C1658M. With fiberglass mat laminated to both sides. Specifically designed for interior use.
 - a. Thickness: 1/2 inch.

- b. Long Edges: Tapered.
- c. Mold Resistance: ASTM D3273, score of 10 as rated in accordance with ASTM D3274.

2.5 TILE BACKING PANELS

- A. Cementitious Backer Units: ANSI A118.9 and ASTM C1288 or ASTM C1325, with manufacturer's standard edges.
 - 1. Thickness: 5/8 inch.
 - 2. Mold Resistance: ASTM D3273, score of 10 as rated in accordance with ASTM D3274.

2.6 TRIM ACCESSORIES

- A. Interior Trim: ASTM C1047.
 - 1. Material: Galvanized-steel sheet or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet .
 - 2. Shapes:
 - a. Cornerbead.
 - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - c. L-Bead: L-shaped; exposed long flange receives joint compound.
 - d. U-Bead: J-shaped; exposed short flange does not receive joint compound.
 - e. Expansion (control) joint.
- B. Aluminum Trim: Extruded accessories of profiles and dimensions indicated on Drawings.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Fry Reglet Profiles or comparable product by one of the following:
 - a. Brand X Metals, Inc
 - b. Flannery, Inc.
 - c. Gordon Inc.
 - d. Pittcon Industries
 - 2. Aluminum: Alloy and temper with not less than the strength and durability properties of ASTM B221, Alloy 6063-T5.
 - 3. Finish: Corrosion-resistant primer compatible with joint compound and finish materials specified.

2.7 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C475/C475M requirements.
 - 1. Mold-Resistant Joint Compound: Use mold-resistant formulations with mold-resistant panel products.
- B. Joint Tape:
 - 1. Interior Gypsum Board: Paper.
 - 2. Glass-Mat Faced Boards: 10-by-10 glass mesh or type recommended by board manufacturer.
 - 3. Tile Backing Panels: See Section 09 30 00 "Tiling."

- 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 and damaged surface areas, use setting-type taping compound.
 - 2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
 - 3. Fill Coat: For second coat, use drying-type, all-purpose compound.
 - 4. Finish Coat: For third coat, use drying-type, all-purpose compound.
- D. Joint Compound for Glass-Mat Applications:
 - 1. Gypsum Sheathing Board, Section 06 16 00 at Interiors: As recommended in writing by sheathing board manufacturer.
 - 2. Glass-Mat, Interior Type: As recommended in writing by board manufacturer.
- E. Joint Compound for Tile Backing Panels: In Section 09 30 00.

2.8 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 in writing by manufacturer for directly adhering gypsum panels to continuous substrate.
- C. Steel Drill Screws: ASTM C1002 unless otherwise specified or indicated on Drawings.
 - 1. Use screws complying with ASTM C954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
 - 2. For fastening cementitious backer units, use screws of type and size recommended in writing by panel manufacturer.
- D. Sound-Attenuation Blankets: ASTM C665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers as follows:
 - 1. Non-Fire-Resistance-Rated Assemblies: Glass or slag or rock wool.
- E. Acoustical Sealant: Latex joint specified in Section 07 92 00 "Joint Sealants."
- F. Primer: As recommended in writing by textured finish manufacturer.

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. Examine framing and other substrates receiving panel products. Reject framing that is not level, not plumb, not coplanar, or has other conditions affecting installation of panels including telegraphing into exposed finishes.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. For Acoustical Joint Sealant: Comply with Section 07 92 00 and the following:
 - 1. Clean out joints immediately before installing acoustical joint sealants to comply with joint-sealant manufacturer's written instructions.
 - 2. Prime joint substrates where recommended by acoustical joint-sealant manufacturer. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
 - 3. Mask and protect areas where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove masking immediately after tooling without disturbing joint seal.

3.3 INSTALLATION AND FINISHING OF PANELS, GENERAL

- A. Comply with ASTM C840 requirements.
- 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 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. 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- 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- 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. 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 requirements 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.
- J. Install sound-attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

3.4 INSTALLATION OF INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
 - 1. Gypsum Board, Type X: All vertical and horizontal surfaces indicated as Gypsum Board 5/8", unless otherwise indicated.
 - a. Storage Rooms above 8'-0" elevation.
 - 2. Gypsum Wallboard: Thicknesses less than 5/8-inch indicated on Drawings.
 - 3. AR-MR: Storage Rooms under 8'-0" elevation, interior partitions and interior face of exterior walls.
 - a. Staff 114, East: Exposed behind bench in, extending one stud bay beyond casework and 4-inches above upper cabinets.
 - 4. MR, Mold-Resistant Gypsum Board: Behind sinks and backsplashes, to underside of upper cabinets except where backsplash is solid surface.
 - 5. Glass-Mat Interior Gypsum Board: In lieu of exterior glass mat sheathing at interior partitions and interior side of exterior walls.
 - 6. Cementitious Backers: At walls and partitions scheduled for tile (TL-#) finishes, in restrooms.
 - a. Behind backsplashes extending from counter to upper cabinets.
- 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 on Drawings.
 - 2. On partitions/walls, apply gypsum panels vertically (parallel to framing) unless otherwise specified or indicated on Drawings 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 on Drawings 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 minimum, from parallel base-layer joints, unless otherwise indicated on Drawings 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 studs or furring members and face-layer joints offset at least one stud or furring member with base-layer joints unless otherwise indicated on Drawings 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 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.

3.5 INSTALLATION OF TILE BACKING PANELS

- A. Cementitious Backer Units: ANSI A108.11, at locations indicated to receive tile. Comply with requirements in Section 09 30 00 "Tiling."
1. Install with 1/4-inch gap where panels abut other construction or penetrations.
 2. At inside corners, leave 1/4-inch gap at one edge with edge extending to framing.
- B. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.
- C. Inspection: Tile backing panels is subject to approval by installer of Section 09 30 00 "Tiling."
1. Remove, repair or replace tile backer boards where installation do not comply with specified requirements.

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 in accordance with manufacturer's written instructions.
- B. Control Joints: Install control joints at locations indicated on Drawings and 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: Install at outside corners unless otherwise specified or indicated on Drawings to receive other corner finishes.
 - a. Apply paper tape at outside corners receiving other finishes.
 2. LC-Bead: Install at ~~inside corner edges~~exposed panel edges.
 - a. At each side of panels at joints where framing has differential bearing, such as at framed walls bearing on slab abutting framed headers suspended from above.
 - b. At each side of panels at movement joints.
 3. L-Bead: Install where indicated on Drawings. Use at all exposed edges abutting other Work, where bead is applied after gypsum; where insufficient clearance for LC-bead
 - a. Bottom of gypsum abutting top of plywood panels in Exterior Storage 150.
 4. U-Bead: Install at exposed panel edges.
- D. Aluminum Trim: Install in locations indicated on Drawings.

3.7 APPLICATION OF JOINT TREATMENT MATERIALS

- A. Finishing Panel Products: Treat joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare panel surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints and damaged surface areas.
- C. Apply joint tape over panel joints, except for trim products specifically indicated as not intended to receive tape. Install at inside corners.
- D. Interior Gypsum Board: Finish panels to levels indicated below and in accordance with ASTM C840:
 1. Level 1: Tape embed joints and interior angles in joint compound. Panel surfaces shall be free of excess joint compound. Tool marks and joint compound ridges are acceptable.
 - a. Locations: Ceiling plenum areas, concealed areas, and where indicated.
 2. Level 2: Tape embed joints and interior angles in joint compound with one coat of joint compound applied over joints, angles, fastener heads and accessories. Panel surfaces shall be free of excess joint compound. Tool marks and joint compound ridges are acceptable.
 - a. Locations: Panels that are substrate for tile and solid surface finishes.
 3. Level 3: Tape embed joints and interior angles in joint compound with one coat of joint compound applied over joints, angles, fastener heads and accessories. Apply one additional separate coat of joint compound over the taped joints, angles, fastener heads and accessories. Panel surfaces shall be free of excess joint compound. Finish joint compound smooth and free of tool marks and joint compound ridges.
 - a. Locations: Walls and ceilings scheduled to receive medium- or heavy- texturing and walls scheduled to receive other panelized finishes.

- 1) Storage room walls.
 - b. Primer and its application to surfaces are specified in Section 09 91 23 "Interior Painting."
 4. Level 4: Tape embed joints and interior angles in joint compound with one coat of joint compound applied over joints, angles, fastener heads and accessories. Apply two additional separate coats of joint compound over the taped joints. Apply one additional separate coat of joint compound over angles, fastener heads and accessories. Panel surfaces shall be free of excess joint compound. Finish joint compound smooth and free of tool marks and joint compound ridges.
 - a. Locations: At panel surfaces that will be exposed to view unless otherwise indicated.
 - b. Primer and its application to surfaces are specified in Section 09 91 23 "Interior Painting."
 5. Level 5: Tape embed joints and interior angles in joint compound with one coat of joint compound applied over joints, angles, fastener heads and accessories. Apply two additional separate coats of joint compound over the taped joints. Apply one additional separate coat of joint compound over angles, fastener heads and accessories. Apply an additional thin skim coat of joint compound or latex flat sealer to the entire surface. Panel surfaces shall be free of excess joint compound. Finish joint compound smooth and free of tool marks and joint compound ridges.
 - a. Provide finish without camber more than 1/32-inch in 4 feet and 1/16-inch in 6 feet.
 - b. Locations: None.
 - E. Glass-Mat Faced Panels: Finish in accordance with manufacturer's written instructions.
 - F. Cementitious Backer Units: In Section 09 30 00.
 - G. Acoustical Joint Sealant: Included partitions with sealant joints at top and bottom of gypsum board panels..
 1. Comply with Section 07 92 00 and acoustical manufacturer's written requirements.
 2. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical joint sealant. Install acoustical joint sealants at both faces of partitions, at perimeters, and through penetrations. Comply with ASTM C919, ASTM C1193, and manufacturer's written instructions for closing off sound-flanking paths around or through assemblies, including sealing partitions to underside of floor slabs above acoustical ceilings.
 3. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of acoustical joint sealants and of products in which joints occur.
- 3.8 PROTECTION
- A. Protect adjacent surfaces from joint compound and promptly remove from floors and other non-gypsum board surfaces. Repair surfaces stained, marred, or otherwise damaged during gypsum board installation and finishing.
 - B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

- C. Protect acoustical joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated acoustical joint sealants immediately so installations with repaired areas are indistinguishable from original work.
- D. 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