

## SECTION 09 29 00

## GYPSUM BOARD

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

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

## 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Interior gypsum board.
- B. Related Sections include the following:
  - 1. Division 05 Section "Cold-Formed Metal Framing" for load-bearing steel framing that supports gypsum board.
  - 2. Division 06 Section "Rough Carpentry" for wood framing and furring that supports gypsum board.
  - 3. Division 06 Section "Sheathing" for gypsum sheathing.
  - 4. Division 07 Section "Thermal Insulation" for insulation and vapor retarders installed in assemblies that incorporate gypsum board.
  - 5. Division 09 Section "Non-Structural Metal Framing" for non-structural framing and suspension systems that support gypsum board.
  - 6. Division 09 Section "Gypsum Board Shaft Wall Assemblies" for metal shaft-wall framing, gypsum shaft liners, and other components of shaft-wall assemblies.
  - 7. Division 09 painting Sections for primers applied to gypsum board surfaces.

## 1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples: For the following products:
  - 1. Trim Accessories: Full-size Sample in 12-inch- long length for each trim accessory indicated.
- C. Maine State Housing Authority Green Standards Submittals:
  - 1. Product Certificates for products and materials required to comply with requirements for regionally manufactured and regionally extracted and manufactured materials. Include statement indicating cost for each regionally manufactured material.

- a. Include statement indicating location of manufacturer and distance to Project for each regionally manufactured material.
- b. Include statement indicating location of manufacturer and point of extraction, harvest, or recovery for each raw material used in regionally extracted and manufactured materials. Indicate distance to Project and fraction by weight of each regionally manufactured material that is regionally extracted.

#### 1.4 PERFORMANCE REQUIREMENTS

- A. 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.
- B. 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.

#### 1.5 STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes. Stack panels flat to prevent sagging.

#### 1.6 PROJECT 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 interior products 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 splotchy surface contamination and discoloration.

### PART 2 - PRODUCTS

#### 2.1 PANELS, GENERAL

- A. Size: Provide in maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.
- B. Regional Materials: Gypsum panel products shall be manufactured within 500 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site.

## 2.2 INTERIOR GYPSUM BOARD

- A. General: Complying with ASTM C 36/C 36M or ASTM C 1396/C 1396M, as applicable to type of gypsum board indicated and whichever is more stringent.
1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. American Gypsum Co.
    - b. BPB America Inc.
    - c. G-P Gypsum.
    - d. Lafarge North America Inc.
    - e. National Gypsum Company.
    - f. PABCO Gypsum.
    - g. Temple.
    - h. USG Corporation.
- B. Regular Type:
1. Thickness: 1/2 inch.
  2. Long Edges: Tapered.
- C. Type X:
1. Thickness: 5/8 inch.
  2. Long Edges: Tapered.

## 2.3 SPECIALTY GYPSUM BOARD

- A. 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, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Georgia-Pacific Gypsum LLC; DensArmour Plus.
  2. Core: 5/8 inch, Type X.
  3. Long Edges: Tapered.
  4. Mold Resistance: ASTM D 3273, score of 10.

## 2.4 TRIM ACCESSORIES

- A. Interior Trim: ASTM C 1047.
1. Material:
    - a. Galvanized or aluminum-coated steel sheet or rolled zinc.
    - b. Plastic where abutting exterior metal doors and windows.

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. Expansion (control) joint.

## 2.5 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C 475/C 475M.
- B. Joint Tape:
  1. Interior Gypsum Wallboard: Paper.
  2. Mold-Resistant Gypsum Wallboard: 10-by-10 glass mesh.
- C. Joint Compound for Interior Gypsum Wallboard: 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 or drying-type, all-purpose compound.
    - a. Use setting-type taping with mold-resistant gypsum wallboard.
  3. Fill Coat: For second coat, use setting-type, sandable topping or drying-type, all-purpose compound.
  4. Finish Coat: For third coat, use drying-type, all-purpose compound.
  5. Skim Coat: Not required.

## 2.6 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
- B. 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 thick.
- C. 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.
- D. 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, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Pecora Corporation; AC-20 FTR or AIS-919.
    - b. USG Corporation; SHEETROCK Acoustical Sealant.
  2. Provide sealants that have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- E. Thermal Insulation: As specified in Division 07 Section "Thermal Insulation."
- F. Vapor Retarder: As specified in Division 07 Section "Thermal Insulation."
- G. Firestopping: As specified in Division 07 Section "Penetration Firestopping."

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames and framing, 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.

#### 3.2 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 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, except floors. 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. 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. Fire-Resistance-Rated Gypsum Board Assemblies: Provide firestop system at the top of fire-resistance-rated gypsum board assemblies. Provide firestop system around any structural penetration of wall assembly.
- L. Smoke-Rated Gypsum Board Assemblies: Provide a tight, taped joint at the top of smoke-rated assemblies and around any penetrations to assemblies at both side of the assembly. The use of acoustical sealant will be acceptable to fill gaps up to 3/8 inch wide.

### 3.3 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
1. Regular Type: As indicated on Drawings.
  2. Type X: Where required for fire-resistance-rated assembly.
  3. Moisture- and Mold-Resistant Type: As indicated on Drawings.
- 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 as follows:
    - a. Vertically (parallel to framing) for metal framing.
    - b. Horizontally (perpendicular to framing) for wood framing.

- c. Stagger abutting end joints not less than one framing member in alternate courses of panels.
  - d. 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 1 framing member, 16 inches 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.

### 3.4 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 or 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. LC-Bead: Use at exposed panel edges.
  3. L-Bead: Use where indicated.

### 3.5 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 and damaged surface areas.

- C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for 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: Where indicated on Drawings.
  - 3. Level 3: Where indicated on Drawings.
  - 4. Level 4: At panel surfaces that will be exposed to view, unless otherwise indicated.
    - a. Primer and its application to surfaces are specified in other Division 09 Sections.
  - 5. Level 5: Not required.

### 3.6 FIELD QUALITY CONTROL

- A. Above-Ceiling Observation: Before Contractor installs gypsum board ceilings, conduct an above-ceiling observation and report deficiencies in the Work observed. Do not proceed with installation of gypsum board to ceiling support framing until deficiencies have been corrected.
  - 1. Complete the following in areas to receive gypsum board ceilings:
    - a. Installation, insulation, and leak and pressure testing of water piping systems.
    - b. Installation of air-duct systems.
    - c. Installation of air devices.
    - d. Installation of mechanical system control-air tubing.
    - e. Installation of ceiling support framing.
    - f. Installation of Penetration Firestopping.

### 3.7 PROTECTION

- A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- B. 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 09 29 00