

DIVISION 9

FINISHES

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ARCHITECTURE
INTERIOR DESIGN
PLANNING



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SECTION 09250

GYPSUM BOARD ASSEMBLIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Non-load-bearing steel framing and furring for gypsum board assemblies.
2. Gypsum board assemblies attached to steel framing and furring.
3. Water-resistant gypsum board.
4. Sound attenuation insulation in partition stud spaces.
5. Joint treatment materials.
6. Acoustical sealant.
7. Fasteners.
8. Partition identification (stenciling fire-rated walls).

B. Related Sections:

1. Section 05400 - Cold Formed Metal Framing: Steel studs and "C" shaped steel joists for structural framing constructed of 18 gauge or heavier material.
2. Section 07210 - Building Insulation: Thermal batt insulation.
3. Section 07840 - Firestopping.
4. Section 09255 - Exterior Sheathing: Sheathing installed on exterior walls.
5. Section 09265 - Gypsum Board Shaft Wall: Gypsum board shaft wall systems.
6. Section 09310 - Ceramic Tile: Cementitious backer units for application of tile.
7. Section 09910 - Painting: Painting of gypsum Board walls.

1.2 SUBMITTALS

- A. **Product Data:** Submit manufacturer's product specifications and installation recommendations for each product proposed.
- B. **Shop Drawings:** Show Control joint locations.
- C. **Samples:** For the following products:
1. Trim Accessories: Full-size Sample in 12-inch- (300-mm-) long length for each trim accessory indicated.

1.3 QUALITY ASSURANCE

- A. **Reference Standards:** Comply with applicable requirements of ASTM C 754 (Installation of Steel Framing Members to Receive Screw-Attached Gypsum Wallboard, Backing Board, or Water-Resistant Backing Board) and ASTM C 840 (Application and Finishing of Gypsum Board), both as supplemented by this Section.
- B. **Sound Transmission Characteristics:** For gypsum board assemblies indicated to have STC ratings, provide materials and construction identical to those of assemblies whose STC ratings were determined per ASTM E 90 and classified per ASTM E 413 by a qualified independent testing agency.

- C. **Fire-Resistance Ratings:** Where indicated, provide materials and construction identical to assemblies tested for fire resistance per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Provide indicated fire-resistance rated assemblies identified in UL "Fire Resistance Directory" or other testing and inspecting agency acceptable to authorities having jurisdiction.
- D. **Single-Source Responsibility for Finishing Materials:** Obtain finishing materials from either the same manufacturer that supplies gypsum board and other panel products or from a manufacturer acceptable to gypsum board manufacturer.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. **Deliver materials** in original packages, containers, or bundles bearing brand name and identification of manufacturer or supplier.
- B. **Store materials** inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Neatly stack gypsum panels flat to prevent sagging.
- C. **Handle gypsum board** to prevent damage to edges, ends, and surfaces. Do not bend or otherwise damage metal corner beads and trim.

1.5 PROJECT CONDITIONS

- A. **Environmental Conditions, General:** Establish and maintain environmental conditions for applying and finishing gypsum board to comply with ASTM C 840 and with gypsum board manufacturer's recommendations.
- 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.
- D. **Room Temperatures:** For attachment of gypsum board to framing, maintain not less than 40 deg F (4 deg C). For finishing of gypsum board, maintain not less than 50 deg F (10 deg C) for 48 hours prior to application and continuously after until dry. Do not exceed 95 deg F (35 deg C) when using temporary heat sources. Avoid conditions that result in gypsum veneer plaster drying too rapidly.
- E. **Protection:** Protect gypsum board products from direct exposure to rain, snow, sunlight, or other excessive weather conditions.
- F. **Ventilation:** Ventilate building spaces, as required, for drying joint treatment materials. Avoid drafts during hot dry weather to prevent finishing materials from drying too rapidly.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. **Available Manufacturers:** Subject to compliance with requirements, manufacturers offering acceptable products include, but are not limited to, the following:

1. Steel Framing and Furring:
 - a. ALABAMA METAL INDUSTRIES CORP.
 - b. METALPRO INC
 - c. CLARK STEEL FRAMING
 - d. DALE/INCOR INDUSTRIES, INC.
 - e. MARINO INDUSTRIES CORP.
 - f. GOLD BOND BUILDING PRODUCTS DIV., NATIONAL GYPSUM CO.
 - g. UNIMAST INC.
2. Grid Suspension Assemblies:
 - a. CHICAGO METALLIC CORP.
 - b. ARMSTONG.
 - c. NATIONAL ROLLING MILLS CO.
 - d. USG INTERIORS, INC.
3. Gypsum Board and Related Products:
 - a. UNITED STATES GYPSUM CO.
 - b. DOMTAR GYPSUM.
 - c. GEORGIA-PACIFIC CORP.
 - d. NATIONAL GYPSUM CO.

2.2 STEEL FRAMING COMPONENTS FOR SUSPENDED AND FURRED CEILINGS

- A. **General:** Provide components of sizes indicated but not less than that required to comply with ASTM C 754 for conditions indicated.
- B. **Cast-In-Place and Post-installed Anchors in Concrete:** Anchors of type indicated below, fabricated from corrosion-resistant materials, with holes or loops for attaching hanger wires, and with capability to sustain, without failure, a load equal to 5 times that imposed by ceiling construction, as determined from testing per ASTM E 488 conducted by a qualified independent testing agency.
 1. Cast-in-place type designed for attachment to concrete forms.
 2. Chemical anchor.
 3. Expansion anchor.
- C. **Powder-Actuated Fasteners in Concrete:** Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers of type indicated, and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing per ASTM E 1190 conducted by a qualified testing agency.
- D. **Wire Ties:** ASTM A 641, Class 1 zinc coating, soft temper, minimum 0.062 inch (1.6 mm) thick.
- E. **Wire Hangers:** ASTM A 641, Class 1 zinc coating, soft temper, minimum 0.162 inch (4.1 mm) thick.
- F. **Channels:** Cold-rolled steel, 0.0598-inch (1.5-mm) minimum thickness of base (uncoated) metal and 7/16-inch (11.1-mm) wide flanges, with ASTM A 653, G 60 (ASTM A 653M, Z 180) hot-dip galvanized coating:
 1. Carrying Channels: 1-1/2 inches (38.1 mm) deep, 475 lb/1000 feet (70 kg/100 m), unless otherwise indicated.
 2. Furring Channels: 3/4 inch (19.1 mm) deep, 300 lb/1000 feet (45 kg/100 m), unless otherwise indicated.

- G. Steel Studs for Furring:** ASTM C 645, with flange edges bent back 90 deg and doubled over to form 3/16 inch minimum lip (return). Use for primary suspension members where indicated.
1. Minimum Base Metal Thickness:
 - a. 0.0329 inch for studs less than 4 inches in depth.
 - b. 0.0283 inch for studs 4 inches or greater in depth.
 2. Depth as indicated.
 3. Protective Coating: ASTM A 653, G 40 (ASTM A 653M, Z 90) hot-dip galvanized coating.
- H. Steel Rigid Furring Channels:** ASTM C 645, hat-shaped, and minimum thickness of base (uncoated) metal 0.0179 inch (nominal 25 ga.) unless otherwise indicated. Use for secondary suspension members where indicated.
1. Depth - 7/8 inch.
 2. Protective Coating: ASTM A 653, G 40 (ASTM A 653M, Z 90) hot-dip galvanized coating.
- I. Steel Resilient Furring Channels (If Required):** Manufacturer's standard product designed to reduce sound transmission, fabricated from steel sheet complying with ASTM A 653 (ASTM A 653M) or ASTM A 568 (ASTM A 568M) to form 1/2-inch- (12.7-mm-) deep channel of the following configuration:
1. Single or Double-Leg Configuration: Asymmetric-shaped channel with face connected to a single flange by a single-slotted leg (web) or hat-shaped channel, with 1-1/2-inch- (38.1-mm-) wide face connected to flanges by double-slotted or expanded-metal legs (webs).
- J. Drywall Grid Suspension System for Interior Ceilings:** Manufacturer's standard direct-hung grid suspension system complying with ASTM C 645 and composed of main beams and cross furring members that interlock to form a modular supporting network. Provide one of the following or Architect-approved substitute system:
1. Chicago Metallic Corp. 630 (630 "Fire Front" where required to be fire-resistant rated).
 2. Armstrong Drywall suspension grid
 3. National Rolling Mills, Inc. DFS Series (DFR Series where required to be fire-resistant rated).
 4. USG Interiors, Inc. Donn Rigid X Drywall Suspension System.

2.3 STEEL FRAMING FOR WALLS AND PARTITIONS

- A. General:** Provide steel framing members complying with the following requirements:
1. Component Sizes and Spacings: As indicated but not less than that required to comply with ASTM C 754 for maximum deflection of L/360 at 5 lbs. per sq. ft. lateral loading.
 2. Protective Coating: ASTM A 653/A 653M, G60 (Z180), hot-dip galvanized.
- B. Studs and Runners:** ASTM C 645, with flange edges of studs bent back 90 degrees and doubled over to form 3/16-inch-wide minimum lip (return) and complying with the following requirements for minimum thickness of base (uncoated) metal and for depth:
1. Nominal 20 gauge minimum unless otherwise indicated on Drawings.
 2. Nominal 20 gauge minimum at walls receiving ceramic tile finish.
 3. Nominal 16 gauge minimum at door jambs (two studs at each jamb)
 4. Depth: As indicated on drawings.
- C. Vertical Deflection:** Unless otherwise indicated on Drawings, all interior non-load-bearing light gauge steel framing which extends to the structure above shall be designed to accommodate a minimum of 1/2" vertical deflection using minimum 2" extended leg ceiling runners and deflection slide clips.

1. Deflection Clip: Flex-C 3 Legged Dog
 2. Approved equal.
- D. Deflection and Firestop Track (for fire-rated partitions):** Top runner shall be designed to allow partition heads to expand and contract with movement of structure above while maintaining continuity of the fire-rated assembly. Comply with requirements of ASTM C 645 except configuration, of thickness indicated for studs and width to accommodate depth of studs indicated with flanges offset at midpoint to accommodate gypsum board thickness.
1. Provide for minimum vertical deflection specified above.
 2. Refer to drawings for details. If not detailed, provide manufacturer's standard offset configuration.
- E. Steel Rigid Furring Channels:** ASTM C 645, hat-shaped, 7/8-inch depth and 0.0179-inch (nominal 25 ga.) minimum thickness of base (uncoated) metal.
- F. Steel Channel Bridging:** Cold-rolled steel, 0.0598-inch (1.5-mm) minimum thickness of base (uncoated) metal and 7/16-inch- (11.1-mm-) wide flanges, 1-1/2 inches (38.1 mm) deep, 475 lb/1000 feet (45 kg/100 m), unless otherwise indicated.
- G. Steel Flat Strap and Backing Plate (If Required):** Steel sheet for blocking and bracing complying with ASTM A 653 (ASTM A 653M) or ASTM A 568 (ASTM A 568M), length and width as indicated, and with a minimum base metal (uncoated) thickness as follows:
1. Thickness: 0.027 inch (0.7 mm) unless otherwise indicated or otherwise required by manufacturer of items being installed.
- H. Z-Clips:** At underside of steel beams to receive fireproofing provide and securely fasten z-clips to anchor deflection tracks. Spacing and gauge shall match that of stud below.
- I. Fasteners for Metal Framing:** Provide fasteners of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel framing and furring members securely to substrates involved; complying with the recommendations of gypsum board manufacturers for applications indicated.

2.4 GYPSUM BOARD PRODUCTS

- A. General:** Provide gypsum board of types indicated in maximum lengths available to minimize end-to-end butt joints. Provide 5/8 inch thickness unless otherwise indicated.
1. Widths: 48 inches (1219 mm).
- B. Gypsum Board:** 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, 5/8 inch thick or as otherwise indicated on drawings.
1. Type: Type "X" at all locations.
 2. Edges: Tapered and featured (rounded or beveled) for prefilling.
- C. Water-Resistant Gypsum Backing Board:** ASTM C 630/C 630M or ASTM C 1396/C 1396M, 5/8 inch thick, and as follows:
1. Type X at all locations.

2.5 TRIM ACCESSORIES

- A. Accessories for Interior Installation:** Provide corner beads, edge trim, and control joints complying with ASTM C 1047 and requirements indicated below:

Material:

1. Formed sheet steel zinc coated by hot-dip process, or rolled zinc.
 2. Shapes as indicated by reference to designations in ASTM C 1047:
 - a. Cornerbead on outside corners, unless otherwise indicated.
 - b. LC-bead with both face and back flanges; face flange formed to receive joint compound. Use LC-beads for edge trim unless otherwise indicated.
 - c. One-piece control joint formed with V-shaped slot, with removable strip covering slot opening.
- B. Accessory for Curved Edges:** Cornerbead formed of metal, plastic, or metal combined with plastic, with either notched or flexible flanges that are bendable to curvature radius.
- C. Reveal Moldings:** Reveal moldings are indicated on the Drawings. Where model numbers are not indicated, Architect shall select molding. Provide manufacturer's standard extruded aluminum accessories of sizes indicated, with paintable protective coating. Finish shall be selected by Architect.
1. All trim shall consist of a fin, tapered, grooved and pre-punched for screw attachments and to accept bonding agents. The surface shall be coated with a protective film compatible with plaster, latex, polyurethane epoxy, enamel, etc. Trims are extruded aluminum, alloy 6063, temper T-5 tensile strength 31 KSI.
 2. Available Manufacturers: Subject to compliance with requirements, provide one of the following:
 - a. Fry Reglet Corp.
 - b. Gordon, Inc.
 - c. Pittcon Industries Inc.

2.6 JOINT TREATMENT MATERIALS

- A. General:** Provide materials complying with ASTM C 475/C 475M and the recommendations of both the manufacturers of sheet products and of joint treatment materials for each application indicated.
1. For filling joints and treating fasteners of water-resistant gypsum backing board for application of ceramic tile, use materials recommended by the board manufacturer for this purpose.
- B. Joint Tape for Gypsum Board:** Paper reinforcing tape, unless otherwise indicated.
- C. Joint Tape for Cementitious Backer Units:** Polymer-coated, open glass-fiber mesh.
- D. Setting-Type Joint Compounds for High Impact Gypsum Board:** Factory-packaged, job-mixed, chemical-hardening powder products formulated for prefilling gypsum board joints.
- E. Setting-Type Joint Compounds for Gypsum Board:** Factory-packaged, job-mixed, chemical-hardening powder products formulated for prefilling gypsum board joints.
- F. Drying-Type Joint Compounds for Gypsum Board:** Factory-packaged vinyl-based products formulated for both taping and topping compounds.
- G. Joint Compound for Cementitious Backer Unit:** Material recommended by cementitious backer unit manufacturer.

2.7 ACOUSTICAL SEALANT

- A. **Acoustical Sealant (for Exposed or Concealed Joints):** Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 and having flame-spread and smoke-developed ratings of less than 25 per ASTM E 84.
1. PL Acoustical Sealant; ChemRex, Inc.; Contech Brands.
 2. AC-20 FTR Acoustical and Insulation Sealant; Pecora Corp.
 3. SHEETROCK Acoustical Sealant; United States Gypsum Co.
- B. **Acoustical Sealant (for Concealed Joints):** Manufacturer's standard nondrying, nonhardening, nonskinning, nonstaining, gunnable, synthetic rubber sealant recommended for sealing interior concealed joints to reduce transmission of airborne sound. Acceptable products include the following:
1. BA-98, Pecora Corp.
 2. Tremco Acoustical Sealant, Tremco, Inc.
 3. Ohio Sealants, Inc.; Pro-Series SC-170 Rubber Base Sound Sealant.

2.8 SOUND ATTENUATION MATERIAL

- A. **Sound Attenuation Blankets:** Unfaced mineral-fiber blanket insulation produced by combining mineral fibers with thermosetting resins to comply with ASTM C 665 for Type I (blankets without membrane facing). Provide insulation with maximum flame spread of 25 and smoke development of 50 when tested in accordance with ASTM E 84.
1. Thickness: Minimum 3 1/2" thick or as required to achieve required sound rating.

2.9 MISCELLANEOUS MATERIALS

- A. **General:** Provide auxiliary materials for gypsum board construction that comply with referenced standards and recommendations of gypsum board manufacturer.
- B. **Screw Fasteners:**
1. Steel drill screws complying with ASTM C 1002 for the following applications:
 - a. Fastening gypsum board to steel members less than 0.03-inch thick.
 - b. Fastening gypsum board to wood members.
 - c. Fastening gypsum board to gypsum board.
 2. Steel drill screws complying with ASTM C 954 for fastening gypsum board to steel members from 0.033 to 0.112 inch thick.
 3. Corrosion-resistant-coated steel drill screws of size and type recommended by board manufacturer for fastening cementitious backer units.
 4. Gypsum board nails: ASTM C 514.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. **Project Conditions:** Verify that installation conditions specified in PART 1 - GENERAL have been achieved and can be maintained.
- B. **Protection:** Provide and maintain temporary protection of gypsum board from direct exposure to rain, snow, sunlight, or other excessive weather conditions.

