SECTION 09-2116 - GYPSUM BOARD ASSEMBLIES

PART 1 - GENERAL

1.01 SECTION INCLUDES
A. Metal framing.
B. Gypsum board.
C. Tile backer.
D. Concealed blocking in gypsum board assemblies.
E. Design of wall framing as required to control deflection.

1.02 RELATED WORK
A. Section 05-4000 - Cold-Formed Metal Framing: Load bearing interior steel framing.
B. Section 13-4900 - Radiation Protection: Lead-lined gypsum board.

1.03 ASSEMBLY PERFORMANCE
A. Wall deflection: Minimum framing requirements are indicated. Provide additional framing or support as required to limit deflection as follows, at 5 PSF imposed load applied perpendicular to the sheathing:
   2. Other assemblies: 1/240 span.
B. For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated according to ASTM E119 by an independent testing laboratory. Products used in the assembly shall bear a classification label from the testing laboratory. Installation shall comply with GA-600 and conform to requirements of the applicable fire-resistive rating.

1.04 SUBMITTALS
A. Certified copies of test reports that describe the details of tested assembly and rating.
B. Third-party evaluation report for equivalent-gauge framing, showing compliance with ICC ES AC86.
C. Schedule showing framing depths, spacing, gauges, and details at each metal-framed wall and ceiling. For depths or gauges not specified in ASTM C754, furnish manufacturer’s span tables, verifying compliance with deflection requirements.

1.05 QUALITY ASSURANCE
A. Comply with ASTM C754 - Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
C. Gypsum wallboard materials shall be produced or recommended by a single manufacturer.

1.06 SITE CONDITIONS
A. Maintain ambient temperature above 55 degrees F beginning at least 24 hours before application of joint treatment or coatings; maintain until all materials are dry.
B. Provide adequate ventilation during and following application of adhesives and joint treatment. Provide temporary air circulators in enclosed areas lacking natural ventilation.
C. Under slow drying conditions, allow additional drying time between coats of joint treatment. During hot dry weather protect installed materials from drafts to prevent too rapid drying.

PART 2 - PRODUCTS

2.01 MANUFACTURERS
A. Acceptable manufacturers, gypsum board:
   1. CertainTeed Corp., Valley Forge, PA.
   2. Georgia-Pacific, Atlanta, GA.
   3. National Gypsum Company, Charlotte, NC.
   4. USG Corporation, Chicago, IL.
   5. Other as approved.

2.02 METAL SUPPORT MATERIALS
A. Studs: ASTM C645, runners and track to match; heavier sections where indicated or where required to achieve deflection limits. Framing members of same equivalent gauge as standard framing, certified by third-party testing with gypsum board per ICC ES AC86, are acceptable, subject to compliance with deflection and rating requirements.
   1. Walls with ceramic tile: 20 gauge minimum; equivalent gauge framing not acceptable.
   2. Walls with lead shielding: 20 gauge minimum; equivalent gauge framing not acceptable.
   3. Other walls through 8 feet tall: 3-5/8 inches deep unless otherwise indicated. 25 gauge minimum.
   4. Height greater than 8 feet: 20 gauge minimum. Provide deeper framing as required for height.
B. Furring members:
1. Hat, C-shape: ASTM C645, 0.0179 inch thick, hat shaped, C-shaped if spanning more than 4 feet.

2. Z-shaped: 1-1/4 inches wide face flange, 7/8 inch wide attachment flange, 0.018 inch thick, depth as required for insulation thickness. Provide where indicated, and for attachment to monolithic concrete or masonry walls.

C. Ceiling support runners: 1-1/2 inches steel channels, hot or cold formed, sized to comply with ASTM C754, unless indicated otherwise on the Drawings.

D. Steel backing plate: Minimum 6 inches tall by 20 gauge, Fy 50KSI steel.

E. Hanger wire: Galvanized carbon steel wire, ASTM A641, soft temper, Class I coating. Size in accordance with ANSI A42.4.

F. Anchoring devices: ANSI A42.4 applicable to substrate, sized to support at least 3 times the calculated load.

G. Rated deflection track: UL or WH classified for moving joints for indicated fire-resistive rating.

2.03 GYPSUM BOARD


B. Fire-resistant gypsum board: ASTM C1396, Type X.

C. Mold resistant gypsum board: Interior drywall resistant to mold growth, gypsum core with coated paper or glass mat fiber facings. ASTM D3273 score: 10. Georgia-Pacific DensArmor Paperless Interior Drywall, National Gypsum XP, other as approved.

D. Exterior gypsum board, exterior sheathing: Square ends and edges. One of the following.

1. ASTM C1396 gypsum sheathing board.

E. Size: 48 inches wide by thickness indicated, maximum lengths practicable to minimize number of end joints.

2.04 TILE BACKER

A. Acceptable products:

2. Other areas: CertainTeed GlasRoc Tile Backer, Georgia-Pacific Dens-Shield Tile Backer, National e2XP Tile Backer, USG Fiberock Aqua Tough Tile Backerboard.

B. Construction: Portland cement reinforced with polymer coated glass-fiber mesh, or approved gypsum core.

C. Fasteners: Screws, size and type recommended by board manufacturer.

D. Joint treatment: Glass-fiber mesh and joint cement finishing system recommended by the board manufacturer.

E. Building wrap: ASTM E1677, Type I, spunbonded olefin, nonwoven, non-perforated. DuPont Tyvek or approved. Building wrap tape as recommended by building wrap manufacturer.

2.05 ACCESSORIES

A. Drywall accessories, general: ASTM C1047.

B. Fasteners:

1. Steel framing less than 0.03 inch thick: ASTM C1002, Type appropriate for member receiving the fastener.
2. Steel framing 0.033 to 0.112 inch thick: ASTM C954.

C. Trim beads: Standard corner beads, J-trim, L-trim, and control joints as indicated or required; galvanized steel with knurled nailing flanges and raised bead.

D. Trim at vertical ACB return: USG MF8, MF10, or approved.

E. Joint treatment: ASTM C475, perforated tape or glass-fiber mesh and joint cement finishing system recommended by gypsum board manufacturer.

F. Joint compound, laminating adhesive: As recommended by gypsum board manufacturer for conditions of use.

G. Joint compound, laminating adhesive, for work after Substantial Completion: Low-dust compound, mold-resistant for mold-resistant gypsum board. National Gypsum ProForm XP Ready Mix Joint Compound With Dust-Tech or approved.

H. Grout for door frames: Gypsum plaster. USG Red Top Gypsum Plaster, USG Structo-Lite Gypsum
Plaster, or equivalent by other acceptable manufacturer.


2.06 ACoustical Control Accessories

A. Acoustical insulation: ASTM C665, Type I, fiber blanket without membrane, or Type II Class A, friction fit, thickness as indicated.

B. Acoustical sealant: ASTM C834, 1 part acrylic-latex type; non-shrinking, non-drying, non-migrating, non-staining, mildew resistant, permanently elastic, paintable; recommended for exposed interior applications involving joint movement of plus or minus 7.5 percent. Foam sealants are not acceptable.

C. Acoustical gasket: Preformed, closed cell, ASTM D1056, thicknesses required for 15 percent compression when installed; burn-resistant, fire rated for rated assemblies.

D. Insulation support: Metal insulation clips, metal wire.

E. Spray foam insulation: Polyurethane, expanding.

2.07 Cavity Shaft Wall Systems

A. Assembly: Gypsum shaft wall boards inserted between U- or J-shaped metal floor and ceiling tracks; with specially shaped studs engaged in tracks and fitted between shaftwall boards; and gypsum boards on finished side or sides applied to studs in number of layers, thicknesses, and arrangement indicated.

PART 3 - EXECUTION

3.01 Surface Preparation

A. Where board is to be adhesive-applied to new concrete, masonry, or an existing substrate material, test for moisture and for compatibility and proper adhesion of adhesive to substrate. Do not proceed until tests confirm satisfactory performance.

3.02 Installation - Metal Support Materials

A. Install runner tracks at floors, walls, ceilings, and columns where stud system abuts other work. Align accurately and fasten to substrate 24 inches o.c. and at corners and intersections.

B. Install rated deflection track at top of fire rated gypsum drywall walls and partitions.

C. Install all framing and furring at 16 inches o.c. unless otherwise noted.

D. Install double studs at each side of door and window openings. Install horizontal bracing from doubled studs to next adjacent stud as follows:

1. At each side of opening head.

2. At each side of opening at same height as strike.

E. At perimeter plates and studs where acoustical insulation is indicated, install acoustical gasket, or install 2 beads of acoustic sealant between perimeter framing and substrate.

A. Seal perimeter joints and void spaces at electrical boxes, registers, ducts, and other penetrations.

B. Install studs plumb, secure to runners. Extend framing from floor to bottom of floor or roof above, unless otherwise indicated.

C. Install ceiling suspension main runners 48 inches o.c. with hangers not exceeding 48 inches spacing along runners. Attach hangers to structure; do not hang from ducts, pipes, or conduit.

D. Attach resilient furring to provide freedom of movement intended by the manufacturer.

E. Install acoustical insulation continuously between studs in partitions with acoustic insulation. Cut and fit around obstructions. Install insulation support as required to permanently hold insulation in place.

3.03 Concealed Blocking

A. Install supplementary framing, blocking, and bracing where indicated or required for support of fixtures, equipment, casework, or similar work requiring attachment to wall.

B. Use blocking recommended by manufacturer of item to be supported. If not recommended, use one of the following.

1. Wood blocking: 2 by 6 minimum, fire-retardant treated, as specified in Section 06-1043.

2. Steel backing plate. Minimum span 3 studs.

C. Attach to framing with specified fasteners. Use quantity sufficient for applied loads, minimum three No. 10 by 3/4 inch long, wafer head screws per stud, spaced equally.

3.04 Installation - Gypsum Wallboard

A. Do not proceed until work that will be concealed by sheathing application has been completed.

B. Fasten building wrap to framing that will support backer board. Lap joints to shed water. Use minimum number of fasteners practical. If building wrap is penetrated or cut, repair damage by...
applying another piece of building wrap, to extend 6 inches beyond damaged area. Seal edges with tape recommended by building wrap manufacturer.

C. Install gypsum board with true, even surfaces, and straight sharp corners. Discard damaged or damp boards. Use full length boards where possible. Locate exposed end-butt joints as far from center of wall or ceiling as possible and stagger in alternate courses. Locate either edge or end joints over supports. Joints on opposite sides of partition shall not occur on the same support. Do not place tapered edges against cut edges or ends. Do not locate joints within 8 inches of edge of openings.

D. Butt boards together but do not force into place. Install board on both faces of stud framing extending above furred ceilings unless otherwise noted. Fasten board to framing with mechanical fasteners 12 inches o.c. at supports.

E. Form curved surfaces by carefully bending and fastening board to form a smooth curve free of flat or distorted areas. Comply with GA-226.

F. For double layer construction, apply face layer with joints offset from base layer.

G. For adhesive applications, precut and prefit face panels. Spread adhesive uniformly over entire back side of panels using a spreader recommended by the board manufacturer. After setting panel in place, apply moderate pressure over entire surface of board and install temporary nails or screws to hold in place until adhesive sets. Remove excess adhesive. Remove temporary fasteners after adhesive has set.

H. Seal perimeter joints and void spaces with acoustical sealant at electrical boxes, registers, ducts, and other penetrations in partitions indicated to receive sound attenuation blankets.

I. Provide stenciling above the ceiling at 20 foot intervals to indicate hourly fire rating, and if the partition is a smoke partition, as designated by the approved floor plans.

3.05 HOLLOW METAL DOOR AND BORROWED LIGHT FRAMES

A. At jamb anchors, spot grout or install spray foam insulation, as required to prevent anchors from moving.

B. At each opening, apply a continuous bead of acoustical sealant to jamb returns at intersection with gypsum board. Tool sealant smooth. Allow to dry before finishing door jamb.

3.06 CONTROL JOINTS

A. Install control joints where indicated on the Drawings. If not indicated, install at 30 feet o.c. maximum.

B. Control joints are optional behind finish wall panels.

C. Install at each corner of window and door openings where the distance from that corner to the next frame or control joint is more than 20 feet. Extend to 6 inches above ceiling.

3.07 DRYWALL FINISHING

A. Tape and finish exposed surfaces. Allow at least 24 hours between coats. Fill joints around pipes, electrical boxes, ducts, and other items extending through gypsum board. Comply with Gypsum Association GA-214.

1. Impact resistant gypsum board, mold-resistant gypsum board:

2. Surfaces with gloss paint: Level 5.

3. Other walls, ceilings: Level 4.


3.08 INSTALLATION OF DRYWALL TRIM ACCESSORIES

A. Where feasible, use the same fasteners to anchor trim as required to fasten gypsum board to the supports.

B. Install metal bead where drywall abuts other types of materials, and where edge of gypsum board would otherwise be exposed or semi-exposed.

1. Metal corner bead at exterior drywall corners.

2. "L" bead where work is tightly abutted to other construction.

3. "LK" bead where other work is kerfed to receive long leg of "L" bead trim.

4. "U" bead where edge is exposed, revealed, gasketed, or sealant-filled, including firestop locations and expansion joints.

5. Install control joints at locations indicated, or if not indicated, at spacing and locations required by referenced gypsum board application and finish standard.

END OF SECTION