
SECTION 09250-GYPSUM BOARD SYSTEMS

PART 1 GENERAL

1.01 SUMMARY

- A. Section covers gypsum board and constructions including, but not limited to the following:
1. Gypsum and cement board on furred masonry walls, concrete columns and beams, partitions, and furred and suspended ceilings.
 2. Taping, splicing and joint treatment.
 3. Sound and thermal insulation for partitions and exterior walls.
 4. Gypsum board construction required to house in air conditioning ductwork and return air plenums, plumbing and electrical conduits.
 5. Fire resistant and sound transmission rated construction achieved by assemblies indicated on Drawings.
- B. Related Sections:
1. 07210 – Building Insulation.
 2. 09100 – Metal Framing.
 3. 09210 – Lathing, Plaster and Stucco.
 4. 09310 – Ceramic Tile.

1.02 REFERENCE STANDARDS

- A. Except as otherwise specified herein or shown on the Drawings, comply with the latest editions of all applicable codes and regulations including the applicable requirements of the following Reference Standards and Codes which are hereby made a part of this Section, as they relate to the gypsum board systems.
1. Gypsum Construction Handbook, latest edition, published by United States Gypsum Company.
 2. American Society for Testing and Standards (ASTM):
 - a. C11-97 Terminology Relating to Gypsum and Related Building Materials and Systems.
 - b. C36-95b Specification for Gypsum Wallboard.
 3. BOCA Code, latest Edition.
 4. The Occupational Health and Safety Administration (OSHA) Code of Federal Regulations(CFR), Volume 29.

1.03 SUBMITTALS

- A. Product data: Manufacturer's product data and published installation instructions and requirements.
- B. Samples, if requested by the Resident.
- C. Certificates:
 - 1. Certify that materials meet or exceed the requirements of this Section.
 - 2. Certification that each fire endurance rating for each assembly will provide the scheduled hourly rating in accordance with local building code.
 - 3. Certification that each partition is designed and installed to meet or exceed the specified performance design criteria.

1.04 QUALITY ASSURANCE

- A. Finish work shall be subject to inspection using a lighting level of not less than 50-foot candles at the surface of the gypsum board. Surfaces judged to be unsuitable for finishing, even if finish has been applied, shall be rejected. The Resident will direct repair or replacement of rejected work.
- B. Fire Resistance Ratings: Provide fire-resistance rated assemblies for the scheduled construction type, identical to those listed in GA-600, Fire Resistance Design Manual or to design designations in UL Fire Resistance Directory or in listing of other testing and agencies acceptable under the local building code.
- C. Single Source Responsibility: Obtain each type of gypsum board and related joint treatment materials from a single manufacturer.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver in original unopened packages bearing brand name of manufacturer. Provide protection from damage and exposure to the elements. Neatly stack boards flat to prevent sagging.
- B. Prevent damage to edges and surfaces. Do not bend or damage metal corner beads and trim.

1.06 PROJECT CONDITIONS

- A. Environmental Requirements: Proceed with installation of gypsum board materials only after building is weather tight. Establish and maintain environmental conditions for application and finishing of gypsum board to comply with ASTM C840 and manufacturer's recommendations.
 - 1. Maintain temperature in areas receiving gypsum board materials between 55 degrees and 90 degrees F. during and after installation and provide adequate ventilation.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Gypsum Wallboard:

1. Domtar Gypsum.
2. Gold Bond Building Products Div. National Gypsum Co.
3. GypGuard.
4. Georgia Pacific Corp.
5. United States Gypsum Company (USG).

B. Accessories shall be by gypsum wallboard manufacturer.

C. Other manufacturers of equal products if approved by the Resident.

2.02 MATERIALS

A. Items specified by manufacturer's name are for establishing a quality standard.

B. Gypsum Wallboard: Standard tapered edge, 5/8" thick (unless otherwise indicated), 48" wide, in lengths as long as practical to minimize number of end joints, complying with ASTM C36 and Fed. Spec. SS-L-30D. Provide the following special function boards where shown or required to meet performance and quality standards.

1. Fire Rated Gypsum Board: USG SA 927, 1/2" or 5/8" thick x 48 inches wide x longest stock length, Type "C" or Type "X", with tapered edges or accepted equivalent in locations where fire rated partitions or ceilings are indicated.
2. Moisture Resistant: ASTM C630, MR type on walls behind sinks, plumbing fixtures, and where ceramic tile is indicated; MR Type X where fire rating is required or indicated on the Drawings.
3. Plaster Base Board: ASTM C588, gypsum plaster base type (green board) where veneer plaster is scheduled, regular in non-rated locations, Type X in fire rated partitions, equal to USG Imperial Gypsum Base. Square edges optional in place of tapered.
4. Fire Rated Composite Board: 1/4" thick fiber-cement board with tapered edges over 1/2" thick Type "X" gypsum board, by GypGuard or accepted equivalent. UL V-422 for 1 hour rating.

C. Screw Fasteners: ASTM C1002, self-drilling, cadmium plated, 1-1/8" for single ply, 1-5/8" for double ply wallboard. Type S Bugle Head by USG or accepted equivalent.

D. Insulation:

1. Exterior Masonry Walls: Refer to Section 07210.
2. Stud Partitions: Mineral fiber or fiberglass batts, thickness indicated on the drawings but not less than 1", unfaced, width to fit between studs or furring,

nominal density 9 psf, ASTM C665 Type I, equal to USG Thermafiber Sound Attenuation Fire Blankets.

- E. Joint Treatment Materials: Compound and tape conforming to ASTM C475 (compound only) and Fed. Spec.SS-J-570B, equal to USG Multi-purpose Durabond 90 or as manufactured by Gypsum Wallboard manufacturer.
 - 1. Joint Tape: Perforated paper reinforcing tape and pressure sensitive open weave glass fiber reinforcing tape with compatible joint compound.
 - 2. Joint Compound: Factory-prepackaged vinyl-based.
- F. Laminating Adhesive: Recommended and approved by the manufacturer of the wallboard.
- G. Acoustic Sealant (Caulking): Tremco Acoustic Sealant, USG Acoustic Sealant, or approved equal.
- H. Trim and Accessories: White plastic, manufactured by Plastic Components, Inc., or Vinyl Corp. or USG.
 - 1. Use internal and external corner beads, casing beads, and control joints, to provide a finished job with true, straight edges against adjoining work.
 - 2. Provide expansion joints as required for conditions and according to manufacturer's recommendations.
- I. Tile Backer Boards:
 - 1. Aggregated Portland cement board with vinyl-coated, woven glass fiber embedded on both surfaces.
 - 2. Joint Reinforcement, Fasteners, Adhesives, and Grout: According to manufacturer's recommendation.
- J. Spot Grout: ASTM C475, setting-type joint compound of type recommended for spot grouting hollow metal doorframes.

PART 3 EXECUTION

3.01 INSPECTION

- A. Verify that conditions are satisfactory to receive drywall work, and free of defects affecting quality of the work.
- B. Do no work until unsatisfactory conditions are corrected.

3.02 INSTALLATION

- A. Install materials in accordance with current printed directions of their manufacturer, in compliance with applicable codes, ASTM C840 and the best standards of the trade contained

in the Gypsum Association publications.

- B. Gypsum Wallboard: Apply over steel studs or furring at right angles to framing members, with end joints over stud flanges, neatly fitting and staggered at least 24 inches. Use wallboard of maximum practical length to minimize number of end joints. Cover wall completely from floor to ceiling.
1. Arrange joints on opposite sides of the partition to occur on different studs.
 2. Where required for fire-resistive assemblies in accordance with ratings established by U.L., the Gypsum Association, and U.S. Gypsum publications, install wallboard with sheet lengths vertical. Fastenings shall conform to published standard requirements.
 3. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16 inch open space between boards. Do not force into place.
 4. Locate edge and end joints over supports, and position boards so that like edges abut. Do not place tapered edges against cut edges or ends.
 5. Stagger vertical joints over different studs on opposite sides of partitions. Spot grout hollow metal door frames for solid core wood doors, hollow metal doors and doors over 32 inches wide. Apply spot grout at each jamb anchor clip just before inserting board into frame.
 6. Panel Attachment: Space fasteners in accordance with referenced standards and manufacturer's recommendations.
 - a. Drive fasteners in field of panel first, working toward ends and edges.
 - b. Hold panel in firm contact with framing while driving fasteners.
 - c. Install perimeter fasteners at 3/8" from ends or edges and spaced maximum 8 inches on center.
 - d. Attach gypsum panels in field of panel with fasteners spaced maximum 12 inches on center.
 7. Use power driven screws making a slight depression not more than 1/32" deep below the surface of the wallboard without breaking the paper. Do not drive screws closer than 3/8" to the edge of the board.
 8. Screw wallboard firmly to track flanges between studs as well as on studs, at floor and ceiling. Set bottom edge of wallboard no more than 1/2" above floor. Do not rest boards on the floor.
 9. Single Layer Application:
 - a. On partitions higher than 8'-1" apply gypsum board vertically (parallel to framing), unless otherwise indicated.
 - b. On partitions 8'-1" or less in height apply gypsum board horizontally (perpendicular to framing)
- C. Partition Systems: Install according to details on Drawings. Stagger junction boxes and outlets on opposite sides of a partition, separated by a metal stud. Do not cover boxes installed back to back until relocated.

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- D. Sound Rated Partitions: Construct in accordance with details as shown and include work necessary to achieve the STC rating for which the assembly was designed. Seal around cutouts for lights, cabinets, pipes, plumbing, ducts and electrical boxes.
- E. Ceilings: Apply wallboard directly to furring channels, wire suspended cold rolled channels, or screw studs.
1. Apply gypsum board with long dimension at right angles to the furring channels or screw studs. Center end joints over furring channels, neatly fitted and staggered. Use boards of maximum practical lengths to minimize end joints.
 2. Do not frame ceiling directly to wall studs at fire and sound rated partitions, to allow uninterrupted sound and fire barrier.
- F. Joint Treatment: Treat joints, screw head depressions and defects incurred during the installation of the gypsum board in accordance with manufacturer's joint treatment directions, using recommended tape, joint compound and recommended methods of the manufacturer.
1. Taping and Embedding:
 - a. Apply taping or embedding compound in a thin, uniform layer to joints and angles.
 - b. Immediately apply reinforcing tape centered over joint or angle and firmly seat into compound. Sufficient compound (approximately 1/64" to 1/32") shall remain under tape to provide proper bond.
 - c. Immediately follow with a thin skim coat to embed tape but not function as a second coat.
 - d. Fold and embed tape properly at interior angles to provide a true angle.
 - e. Tape or embedding coat shall be thoroughly dry before application of second coat.
 2. Second Coat Embedding:
 - a. Apply a second coat of joint compound over embedding coat, filling panel taper flush with surface.
 - b. Cover tape and feather out at least 2 inches on each side beyond first coat.
 - c. On joints with no taper, cover tape and feather out at least 4 inches on either side of tape.
 - d. Allow second coat to dry thoroughly before application of finish coat.
 3. Topping:
 - a. Spread a finish coat evenly over and extend at least 2 inches on each side beyond second coat on joints and feather to a smooth uniform finish.
 - b. Over tapered edges, do not allow finished joint to protrude beyond plane of surface.

- c. Apply finish coat to cover tape and taping compound at taped angles and provide a true angle.
 - d. Where necessary, sand between coats and following final application of compound to provide a smooth surface ready for painting.
- G. Sealed Plenums: Provide airtight plenums at areas required by air conditioning systems where indicated on the drawings.
- H. Vertical Exhaust and Pipe Spaces: Construct according to details and complying with Standard Building Code for applicable rating.
- I. Fit work tightly. Close gaps at joints, ceiling, floor and corners.
- J. Ceiling Plenums: Divide plenums and other spaces above ceilings into horizontal areas as shown, with tight-fitting stops from ceiling to deck above.
 - 1. Construct draft stops with 1/2" thick wallboard, 22-gage sheet metal, or as detailed on drawings.
 - 2. Where multiple plenums are used for air movement, protect openings between plenums, against passage of fire or noxious gases.
 - 3. Remove debris, and loose and flammable materials, before closing plenums and concealed spaces.
- K. Accessories: Apply accessories according to manufacturer's instructions. Sand after application of final joint treatment coat and leave surface smooth and ready for work by other trades.
 - 1. Use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges to comply with manufacturer's recommendations.
 - 2. Install metal corner beads at external corners.
 - 3. Install metal edge trim whenever edge of gypsum board would otherwise be exposed or semi-exposed.
 - 4. Install U-type trim where edge is exposed, revealed, gasketed, or sealant-filled (including expansion joints).
 - 5. Install expansion joints and control joints at locations indicated, or if not indicated, at spacings and locations as follows, and approved by the Resident for visual effect.
 - a. Changes in back-up material or substrate.
 - b. Vertically at each steel doorframe jamb.
 - c. Horizontally along floor line in stairwell partitions.
 - d. Vertically in partition walls at 30 ft. o.c. maximum.
 - e. In ceilings at 30 ft. o.c. maximum each direction.
 - 6. Treat metal accessories with not less than 2 coats of joint compound in the same manner as joints. Feather joint compound out from 8 to 10 inches on both sides of corners.

7. Apply metal trim at intersections where gypsum board abuts other materials, unless detailed otherwise, and at all other locations indicated. Neatly fit and secure corner beads over external corners.

3.03 FINISHING OF DRYWALL

- A. Apply joint treatment at gypsum board joints (both directions); flanges of corner bead, edge trim, and control joints; penetrations; fastener heads, surface defects and elsewhere as required to prepare work for decoration.
- B. Prefill open joints and rounded or beveled edges, if any, using setting-type joint compound.
- C. Apply joint tape at joints between gypsum boards, except where trim accessories are indicated.
- D. Finish interior gypsum wallboard by applying the joint compound in 3 coats (not including prefill of openings in base), and sand between coats and after last coat.
- E. Water-Resistant Cement Backing Board Base for Ceramic Tile: Finish joints between water-resistant backing board with fiberglass reinforced tape and setting-type joint compound to comply with gypsum board manufacturer's recommendations.
- F. Finishing Fasteners:
 1. Apply a taping or all-purpose type compound to fastener depressions as the first coat.
 2. Follow with minimum of 2 additional coats of topping compound, leaving depressions level with plane of surface.

3.06 PROTECTION

- A. Provide final protection and maintain conditions, which ensure gypsum drywall construction being without damage or deterioration at time of Substantial Completion.

END OF SECTION