

SECTION 09 29 00
GYPSUM BOARD

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies installation and finishing of gypsum board.

1.2 RELATED WORK

- A. Installation of steel framing members for walls, partitions, furring, soffits, and ceilings: Section 09 22 16, NON-STRUCTURAL METAL FRAMING.
- B. Acoustical Sealants: Section 07 92 00, JOINT SEALANTS.

1.3 TERMINOLOGY

- A. Definitions and description of terms shall be in accordance with ASTM C11, C840, and as specified.
- B. Underside of Structure Overhead: In spaces where steel trusses or bar joists are shown, the underside of structure overhead shall be the underside of the floor or roof construction supported by the trusses or bar joists.
- C. "Yoked": Gypsum board cut out for opening with no joint at the opening (along door jamb or above the door).

1.4 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data:
 - 1. Cornerbead and edge trim.
 - 2. Finishing materials.
 - 3. Laminating adhesive.
 - 4. Gypsum board, each type.
- C. Samples:
 - 1. Cornerbead.
 - 2. Edge trim.
 - 3. Control joints.
- D. Test Results:
 - 1. Fire rating test, each fire rating required for each assembly.
 - 2. Sound rating test.

1.5 DELIVERY, IDENTIFICATION, HANDLING AND STORAGE

In accordance with the requirements of ASTM C840.

1.6 ENVIRONMENTAL CONDITIONS

In accordance with the requirements of ASTM C840.

1.7 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society for Testing And Materials (ASTM):
- C11-08Terminology Relating to Gypsum and Related Building Materials and Systems
 - C475-02Joint Compound and Joint Tape for Finishing Gypsum Board
 - C840-08Application and Finishing of Gypsum Board
 - C919-08Sealants in Acoustical Applications
 - C954-07Steel Drill Screws for the Application of Gypsum Board or Metal Plaster Bases to Steel Stud from 0.033 in. (0.84mm) to 0.112 in. (2.84mm) in thickness
 - C1002-07Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
 - C1047-05Accessories for Gypsum Wallboard and Gypsum Veneer Base
 - C1396-06Gypsum Board

PART 2 - PRODUCTS

2.1 GYPSUM BOARD

- A. Paperless Gypsum Board: Provide proprietary mold and mildew-resistant gypsum wallboard; ASTM C1396, Type X; 16 mm (5/8 inch) thick; passes ASTM D3273 with an average score of 8 or greater; optionally provide fiberglass mat faced gypsum board. Shall contain a minimum of 20 percent recycled gypsum.
- B. Gypsum cores shall contain a minimum of 95 percent post industrial recycled gypsum content. Paper facings shall contain 100 percent post-consumer recycled paper content.
- C. Coreboard or Shaft Wall Liner Panels.
- 1. ASTM C1396, Type X.
 - 2. Coreboard for shaft walls 300, 400, 600 mm (12, 16, or 24 inches) wide by required lengths 25 mm (one inch) thick with paper faces treated to resist moisture.

2.2 ACCESSORIES

- A. ASTM C1047, except form of 0.39 mm (0.015 inch) thick zinc coated steel sheet or rigid PVC plastic.
- B. Flanges not less than 22 mm (7/8 inch) wide with punchouts or deformations as required to provide compound bond.

2.3 FASTENERS

- A. ASTM C1002 and ASTM C840, except as otherwise specified.
- B. ASTM C954, for steel studs thicker than 0.04 mm (0.33 inch).
- C. Select screws of size and type recommended by the manufacturer of the material being fastened.
- D. For fire rated construction, type and size same as used in fire rating test.
- E. Clips: Zinc-coated (galvanized) steel; gypsum board manufacturer's standard items.

2.4 FINISHING MATERIALS AND LAMINATING ADHESIVE

- A. ASTM C475 and ASTM C840. Free of antifreeze, vinyl adhesives, preservatives, biocides and other VOC. Adhesive shall contain a maximum VOC content of 50 g/l.
- B. Primer, High Hide: water-based, primer-sealer stain blocker, less than 100 g/L VOC's 40% solids by volume, minimum 1.6 mils DFT; "Kilz Premium," Masterchem Industries, LLC., no substitutions.

PART 3 - EXECUTION

3.1 GYPSUM BOARD HEIGHTS

- A. Extend all layers of gypsum board from floor to underside of structure overhead on following partitions and furring:
 - 1. Two sides of partitions:
 - a. Fire rated partitions.
 - b. Smoke partitions.
 - c. Sound rated partitions.
 - d. Full height partitions shown (FHP).
 - 2. One side of partitions or furring:
 - a. Inside of exterior wall furring or stud construction.
 - b. Room side of room without suspended ceilings.
 - 3. Extend all layers of gypsum board construction used for fireproofing of columns from floor to underside of structure overhead, unless shown otherwise.
- B. In locations other than those specified, extend gypsum board from floor to heights as follows:

1. Not less than 100 mm (4 inches) above suspended acoustical ceilings.
2. At ceiling of suspended gypsum board ceilings.
3. At existing ceilings.

3.2 INSTALLING GYPSUM BOARD

- A. Coordinate installation of gypsum board with other trades and related work.
- B. Install gypsum board in accordance with ASTM C840, except as otherwise specified.
- C. Use gypsum boards in maximum practical lengths to minimize number of end joints.
- D. Bring gypsum board into contact, but do not force into place.
- E. Ceilings: For single-ply construction, use perpendicular application.
- F. Walls (Except Shaft Walls):
 1. When gypsum board is installed parallel to framing members, space fasteners 300 mm (12 inches) on center in field of the board, and 200 mm (8 inches) on center along edges.
 2. When gypsum board is installed perpendicular to framing members, space fasteners 300 mm (12 inches) on center in field and along edges.
 3. Stagger screws on abutting edges or ends.
 4. For single-ply construction, apply gypsum board with long dimension either parallel or perpendicular to framing members as required to minimize number of joints except gypsum board shall be applied vertically over "Z" furring channels.
 5. For two-ply gypsum board assemblies, apply base ply of gypsum board to assure minimum number of joints in face layer. Apply face ply of wallboard to base ply so that joints of face ply do not occur at joints of base ply with joints over framing members.
 6. No offset in exposed face of walls and partitions will be permitted because of single-ply and two-ply or three-ply application requirements.
 7. Control Joints ASTM C840 and as follows:
 - a. Locate at both side jambs of openings if gypsum board is not "yoked". Use one system throughout.
 - b. Not required for wall lengths less than 9000 mm (30 feet).
 - c. Extend control joints the full height of the wall or length of soffit/ceiling membrane.
- G. Acoustical or Sound Rated Partitions, Fire and Smoke Partitions:

1. Cut gypsum board for a space approximately 3 mm to 6 mm (1/8 to 1/4 inch) wide around partition perimeter.
2. Coordinate for application of caulking or sealants to space prior to taping and finishing.
3. For sound rated partitions, use sealing compound (ASTM C919) to fill the annular spaces between all receptacle boxes and the partition finish material through which the boxes protrude to seal all holes and/or openings on the back and sides of the boxes. STC minimum values as shown.

H. Accessories:

1. Set accessories plumb, level and true to line, neatly mitered at corners and intersections, and securely attach to supporting surfaces as specified.
2. Install in one piece, without the limits of the longest commercially available lengths.
3. Corner Beads:
 - a. Install at all vertical and horizontal external corners and where shown.
 - b. Use screws only. Do not use crimping tool.
4. Edge Trim (casings Beads):
 - a. At both sides of expansion and control joints unless shown otherwise.
 - b. Where gypsum board terminates against dissimilar materials and at perimeter of openings, except where covered by flanges, casings or permanently built-in equipment.
 - c. Where gypsum board surfaces of non-load bearing assemblies abut load bearing members.
 - d. Where shown.

3.3 CAVITY SHAFT WALL

- A. Coordinate assembly with Section 09 22 16, NON-STRUCTURAL METAL FRAMING, for erection of framing and gypsum board.
- B. Conform to UL Design No. U438 or FM WALL CONSTRUCTION 12-2/HR (Nonbearing for two-hour fire rating).
- C. Cut coreboard (liner) panels 25 mm (one inch) less than floor-to-ceiling height, and erect vertically between J-runners on shaft side.
 1. Where shaft walls exceed 4300 mm (14 feet) in height, position panel end joints within upper and lower third points of wall.
 2. Stagger joints top and bottom in adjacent panels.

3. After erection of J-struts of opening frames, fasten panels to J-struts with screws of sufficient length to secure to framing staggered from those in base, spaced 300 mm (12 inches) on center.

D. Gypsum Board:

1. Two hour wall:

- a. Erect base layer (backing board) vertically on finish side of wall with end joints staggered. Fasten base layer panels to studs with 25 mm (one inch) long screws, spaced 600 mm (24 inches) on center.
- b. Use laminating adhesive between plies in accordance with UL or FM if required by fire test.
- c. Apply face layer of gypsum board required by fire test vertically over base layer with joints staggered and attach with screws of sufficient length to secure to framing staggered from those in base, spaced 300 mm (12 inches) on center.

2. One hour wall with one layer on finish side of wall: Apply face layer of gypsum board vertically. Attach to studs with screws of sufficient length to secure to framing, spaced 300 mm (12 inches) on center in field and along edges.

3. Where core board is covered with face layer of gypsum board, stagger joints of face layer from those in the coreboard base.

E. Treat joints, corners, and fasteners in face layer as specified for finishing of gypsum board.

F. Elevator Shafts:

1. Protrusions including fasteners other than flange of shaft wall framing system or offsets from vertical alignments more than 3 mm (1/8-inch) are not permitted unless shown.
2. Align shaft walls for plumb vertical flush alignment from top to bottom of shaft.

3.4 FINISHING OF GYPSUM BOARD

A. Finish joints, edges, corners, and fastener heads in accordance with ASTM C840.

1. Apply one coat of high hide primer at all existing wall surfaces.
2. Provide Level 5 finish for all areas, new and existing within work limits.

B. Before proceeding with installation of finishing materials, assure the following:

1. Gypsum board is fastened and held close to framing or furring.

2. Fastening heads in gypsum board are slightly below surface in dimple formed by driving tool.

C. Finish joints, fasteners, and all openings, including openings around penetrations, on that part of the gypsum board extending above suspended ceilings to seal surface of non decorated smoke barrier, fire rated and sound rated gypsum board construction. After the installation of hanger rods, hanger wires, supports, equipment, conduits, piping and similar work, seal remaining openings and maintain the integrity of the smoke barrier, fire rated and sound rated construction. Sanding is not required of non decorated surfaces.

3.5 REPAIRS

A. After taping and finishing has been completed, and before decoration, repair all damaged and defective work, including non-decorated surfaces.

B. Patch holes or openings 13 mm (1/2 inch) or less in diameter, or equivalent size, with a setting type finishing compound or patching plaster.

C. Repair holes or openings over 13 mm (1/2 inch) diameter, or equivalent size, with 16 mm (5/8 inch) thick gypsum board secured in such a manner as to provide solid substrate equivalent to undamaged surface.

D. Tape and refinish scratched, abraded or damaged finish surfaces including cracks and joints in non decorated surface to provide smoke tight construction, fire protection equivalent to the fire rated construction and STC equivalent to the sound rated construction.

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