SECTION 09 29 00

GYPSUM BOARD

PART 1GENERAL

1.1 SECTION INCLUDES

A. Gypsum board:

1. Type X gypsum board.
2. Sustainable Type X gypsum board.
3. Moisture resistant gypsum board.
4. Hi-impact gypsum wall systems.
5. Sound damping gypsum board.

B. Gypsum sheathing.

C. Accessories.

1.2 RELATED SECTIONS

A. Section 09 91 00 – Painting.

1.3 REFERENCES

A. The publications listed below form a part of this Section to the extent referenced. The publications are referred to in the text by the basic designation only. Refer to Division 01 for definitions, acronyms, and abbreviations.

B. Standards, manuals, and codes refer to the latest edition of such standards, manuals, and codes in effect as of the date of issue of this Project Manual, unless indicated otherwise in CBC Chapter 35 and CFC Chapter 80.

C. Referenced Standards:

1. ASTM B117 – Standard Practice for Operating Salt Spray (Fog) Apparatus.
2. ASTM C473 – Standard Test Method for Physical Testing of Gypsum Panel Products.
3. ASTM C475/C475M – Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
4. ASTM C840 – Standard Specification for Application and Finishing of Gypsum Board.
5. ASTM C954 – Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness.
6. ASTM C1002 – Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.

7. ASTM C1047 – Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.

8. ASTM C1177/C1177M – Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.

9. ASTM C1278/C1278M – Standard Specification for Fiber-Reinforced Gypsum Panel.

10. ASTM C1396/C1396M – Standard Specification for Gypsum Board.

11. ASTM C1629 – Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels.

12. ASTM D3273 – Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.

13. ASTM E119 – Standard Test Methods for Fire Tests of Building Construction and Materials.

14. GA-214 – Recommended Levels of Gypsum Board Finish.

15. GA-216 – Application and Finishing of Gypsum Board.

16. GA-253 – Application of Gypsum Sheathing.

17. GA-600 – Fire Resistance Design Manual.

18. UL Fire Resistance Directory.

1.4 SUBMITTALS

A. General: Submit in accordance with Division 01.

B. Product Data: Submit manufacturer's descriptive literature and product specification for each product.

1.5 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer Qualifications: Firm specializing in manufacturing products specified in this Section with a minimum five years' experience.

2. Installer Qualifications: Firm specializing in installing work specified in this Section acceptable to manufacturer with experience on at least five projects of similar nature in past three years.

B. Regulatory Requirements: Comply with requirements of CBC Chapter 25.

C. Coordinate work in this Section with work in related Sections.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Comply with requirements of Division 01.

B. Deliver products in manufacturer's original containers, dry and undamaged, with seals and labels intact.

C. Storage and Protection: Store materials in a dry secure place; neatly stacked to prevent sagging or damage to edges, ends, and surfaces. Protect from weather, surface contaminants, corrosion, construction traffic, and other potential damage.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Interior Environmental Requirements:

1. Maintain room temperature at not less than 40 degrees F during application of gypsum board. Maintain room temperature at not less than 50 degrees F for joint treatment and decoration for 48 hours prior to and continuously thereafter until completely dry.

2. Provide adequate ventilation during installation and curing period.

3. Prevent exposure to excessive or continuous moisture before, during, and continuously after installation. Eliminate sources of moisture immediately.

4. Protect gypsum board from direct exposure to rain, snow, sunlight, or excessive weather conditions.

PART 2PRODUCTS

2.1 SUSTAINABLE BUILDING DESIGN REQUIREMENTS

A. Comply with Division 01.

B. Provide adhesive materials that meet VOC requirements of South Coast Air Quality Management District (SCAQMD) Rule No. 1168.

2.2 MANUFACTURERS

A. Acceptable Manufacturers:

1. USG – United States Gypsum Company, Chicago, IL 60606; toll free: 800-874-4968, phone: 312-606-4000, fax: 312-606-5566, www.usg.com.

2. National Gypsum Co., Charlotte, NC 28211; phone: 704-365-7300, fax: 800-329-6421, www.nationalgypsum.com.

3. GP-Gypsum – Georgia-Pacific Corp., Atlanta, GA 30303; toll free: 800-824-7503, phone: 404-652-4000, fax: 404-230-5624, www.gp.com.

4. Pabco Gypsum, Newark, CA 94560; phone: 510-792-9555, fax: 510-794-8725, www.pabcogypsum.paccoast.com.

5. CertainTeed Corporation, Valley Forge, PA; toll free: 800-233-8990, www.certainteed.com.

B. Substitutions: Under provisions of Division 01.

2.3 GYPSUM BOARD

A. Type X Gypsum Board: ASTM C1396/1396M; 5/8-inch thick; 2.2 pounds per square foot; fire resistant core; maximum permissible length; ends square cut, tapered edges.

1. Acceptable Products:

a. Sheetrock Brand Firecode Core manufactured by USG,

b. Gold Bond Brand XP Fire-Shield Gypsum Board manufactured by National Gypsum,

c. ToughRock Fireguard manufactured by G-P Gypsum,

d. or accepted equal.

B. Sustainable Gypsum Board: ASTM C1396/1396M; 5/8-inch thick; 1.8 pounds per square foot; fire resistant core; maximum permissible length; ends square cut, tapered edges.

1. Acceptable Products:

a. Sheetrock Brand Ecosmart Panels Firecode X manufactured by USG.

b. or accepted equal.

C. Moisture Resistant Gypsum Board: ASTM C1396/C1396M; 5/8 inch thick Type X, moisture and mold resistant core, encased in moisture resistant paper facers; maximum permissible length; ends square cut, tapered edges.

1. Average water absorption after two-hour immersion per ASTM C473: 5 percent or less.

2. Mold and mildew resistance per ASTM D3273: Minimum average score 8.

3. Acceptable Products:

a. Sheetrock Brand Mold Tough Gypsum Panels manufactured by USG,

b. Gold Bond Brand XP Gypsum Board manufactured by National Gypsum,

c. ToughRock Mold Guard manufactured by G-P Gypsum,

d. or accepted equal.

D. Hi-Impact Gypsum Wall System: 5/8 inch Type X, mold and moisture resistant per ASTM D3273, Level 3 surface abrasion resistance, Level 1 indentation resistance, Level 3 hard-body impact resistance, and Level 3 soft-body impact resistance per ASTM C1629.

1. Acceptable Systems:

a. US Gypsum Co.: Mold Tough VHI fire rated gypsum board panel,

b. National Gypsum Co.: Gold Bond Brand Hi-Impact XP Gypsum Board,

c. or accepted equal.

E. Sound Damping Gypsum Board: 5/8 inch thick, mold-resistant, Type X equivalent per ASTM E119, paper-faced gypsum each side of and laminated to a sound absorbing viscoelastic polymer core; ends square cut, tapered edges.

1. Acceptable Products:

a. Quiet Rock EZ-SNAP Mold Resistant manufactured by PABCO Gypsum,

b. Supress Sound Engineered Drywall manufactured by Supress Products, LLC,

c. Gold Bond Brand SoundBreak XP Gypsum Board manufactured by National Gypsum Co.,

d. SilentFX Gypsum Board manufactured by CertainTeed Corporation.

e. or accepted equal.

2. Accessories:

a. Sound damping gypsum board manufacturer's acoustical sealant and acoustical putty.

b. ASTM C1002 Type S or S12 fine thread drywall screws.

2.4 ACCESSORIES

A. Corner Bead, Edge Trim, and Decorative Dividers: ASTM C1047; zinc-coated sheet steel.

B. Control Joints: ASTM C1047; roll-formed zinc joint with removable protected opening; provided in accordance with UL fire rated assemblies. Acceptable product: Zinc Control Joint No. 093 manufactured by USG, or accepted equal.

C. Screws:

1. ASTM C1002, Type S or Type A; bugle head; self drilling and self tapping screws for light gauge steel framing (less than 0.033 inch thick).

2. ASTM C954; bugle head; self-drilling and self tapping screws for heavy gauge steel framing (0.033 inch to 0.112 inch thick).

D. Jointing Tape: ASTM C475/C475M; 2 inch wide heavy duty paper joint tape.

E. Joint Compound: ASTM C475/C475M.

F. Primer-Surfacer (used in lieu of skim coat in a Level 5 finish): High-build interior coating finish applied with an airless sprayer. Products: Sheetrock Brand Primer-Surfacer Tuff-Hide manufactured by USG, ProForm Brand Surfacer/Primer manufactured by National Gypsum, or accepted equal. Note: walls applied with primer-surfacer do not require drywall paint primer prior to application of finish coats.

G. Acoustical Sealant: Refer to Section 07 92 00.

H. Firestop Putty Pads for Electrical Boxes: Intumescent moldable firestop putty pad. Acceptable products: SSP4S 7.25 inches by 7.25 inches or SSP9S 9 inches by 9 inches manufactured by Specified Technologies Inc. (STI), Somerville, NJ; 800-992-1180, www.stifirestop.com, or accepted equal.

2.5 GYPSUM SHEATHING

A. ASTM C1177/C1177M, glass mat-faced; or ASTM C1278/C1278M, fiber reinforced; water-resistant treated gypsum core; 5/8-inch thick Type X.

1. Acceptable Products:

a. DensGlass Fireguard Sheathing manufactured by GP-Gypsum,

b. SecuRock Brand Glass-Mat Sheathing manufactured by USG,

c. Gold Bond Brand e²XP Extended Exposure Sheathing manufactured by National Gypsum Co.,

d. or accepted equal.

B. Building Wrap and Flexible Flashings: Refer to Section 07 25 00.

PART 3EXECUTION

3.1 EXAMINATION

A. Examine job site conditions and verify field dimensions.

B. Verify framing for acceptable placement, spacing, and tolerance (alignment and plumb).

C. Verify that framing and furring are securely attached.

D. Verify that all blocking, headers, and supports are in place to support plumbing fixtures, casework, grab bars, shelves, and similar items.

E. Verify that insulation is secured.

F. Verify firestopping work, refer to Section 07 84 00.

G. Report unacceptable conditions to the Architect. Begin installation only when unacceptable conditions have been corrected.

3.2 FIRESTOPPING AND SEALANTS

A. Install intumescent moldable pads over backs and sides of all electrical junction and utility boxes at fire rated walls.

B. Apply acoustical sealant at partitions per sealant manufacturer's instructions. Refer to Section 07 92 00.

3.3 GYPSUM BOARD INSTALLATION

A. Install gypsum board to framing and furring members in accordance with manufacturer's recommendations, GA-216 or ASTM C840, and as specified in this Section.

B. Install gypsum board with separate panels in moderate contact, do not force in place. Stagger end joints of adjoining panels. Neatly fit abutting end and edge joints.

C. Install gypsum board in most economical direction, using maximum practical lengths, with edges occurring over firm bearing. Install 1/4 inch (nominal) above rough floor or curb. Cut out gypsum board as required to make neat close joints around openings.

D. In vertical applications, provide lengths required to reach full height of vertical surfaces in one continuous piece.

E. Where gypsum board is carried full height to structure above, provide for deflection of structure by undercutting board 3/8 inch (nominal) and sealing top edge of board to substrate with a continuous bead of sealant to form an elastic closure.

F. Use screws to fasten gypsum board to framing.

G. Treat cut edges and holes in moisture resistant gypsum board per manufacturer's recommendations.

H. Place corner beads at all exterior corners. Use longest practical length. Place edge trims where gypsum board abuts dissimilar materials.

I. Control Joints: Install control joints where indicated on the Drawings. Where not specifically indicated, install consistent with lines of building spaces as directed by Architect; and as a minimum, install as follows:

1. Where a partition, wall, or ceiling traverses a construction joint (expansion, seismic, or building control element) in the base building structure.

2. Where a wall or partition runs in an uninterrupted straight plane exceeding 30 linear feet.

3. In interior ceilings without perimeter relief so that linear dimensions between control joints do not exceed 30 feet and total area between control joints does not exceed 900 square feet.

4. Where ceiling framing members change direction.

5. Where a partition transitions from floor-supported framing to overhead hung framing.

J. Attach metal corner beads, edge trim, decorative dividers, and control joints to the supporting construction at 9 inches on center maximum spacing using same fasteners used to attach gypsum board panels.

3.4 FIRE-RESISTANT ASSEMBLIES

A. Install fire rated assemblies using materials, application methods including gypsum panel orientation, types and spacing of fasteners, and framing in accordance with the specified UL Fire Resistive Design Number, GA-600 File Number, or CBC Table 721.1.

B. Completely seal joints of fire-rated gypsum board enclosures in accordance with UL or GA listed assembly requirements. Seal penetrations through rated partitions and ceilings in accordance with tested systems. Refer to Section 07 84 00.

3.5 SOUND DAMPING GYPSUM BOARD INSTALLATION

A. Install sound damping gypsum board in accordance with GA-201, GA-216, GA-600, and manufacturer's instructions.

B. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4 inch to 1/2 inch gaps at these locations, and trim edges with metal edge trim where edges of panels are exposed. Seal joints between edges and abutting structural elements with acoustical sealant. Install backer rods as required to meet the sealant width to depth ratios specified in Section 07 92 00.

C. 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 C919 and with manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above ceilings.

D. Secure gypsum board to metal framing using fine thread drywall screws at 16 inches on center, minimum.

E. Install acoustical putty behind outlet boxes and other boxes. Wrap putty completely around the back side of the box, covering entire box.

3.6 SOUND RATED ASSEMBLIES

A. Gypsum board shall have a minimum weight of 2.2 pounds per square foot per layer.

B. Seal all duct, conduit, wire, and pipe penetrations through the wall assembly on both sides using one of the following methods:

1. Acoustical caulking.

2. Backer rod and acoustical sealant.

3. Moldable non-hardening putty.

4. Elastomeric non-hardening fire stop spray.

C. Back-to-back electrical or low voltage boxes are not allowed. Boxes must be separated by a minimum of 24 inches on center. A putty/fire pad such as 3M Fire Barrier Moldable Putty Pad or Lowry's Box Pad shall be placed on the back and all sides of the box. Seal around the perimeter of all wall boxes with a resilient, non-hardening caulking. Junction boxes larger than four-gang will require a five-sided gypsum board enclosure.

D. At wall termination at window mullion or exterior glazing install compressed closed-cell mass-loaded foam seal product full height to provide an air-tight seal per manufacturer's instructions on both sides of the wall. Product: EMSEAL QuietJoint or accepted equal.

E. Ensure that gypsum board does not touch the underside of the roof deck, concrete floor, or perpendicular gypsum wall board by maintaining a minimum 1/8 inch gap and a maximum 3/8 inch gap at the perimeter.

F. Seal the perimeter of the wall with a combination of backer rod and resilient, non-hardening acoustical sealant including the gap at the underside of the deck. This shall be done before inside taping is completed.

G. Where multiple layers of gypsum board are installed, stagger the seams between layers so no seams overlap.

3.7 GYPSUM SHEATHING INSTALLATION

A. Install gypsum sheathing in accordance with GA-253 and manufacturer's instructions.

B. End joints, if required should be offset; joints should fit snugly and flashing installed around all openings.

C. Install maximum lengths possible to minimize number of joints. Edge joints must be located parallel to and with vertical orientation on framing. End joints of adjacent lengths of sheathing must be staggered.

D. Attach gypsum sheathing to frame with screws. Drive fasteners so as to bear tight against and flush with surface of sheathing. Do not countersink fasteners. Fasteners must be located at least 3/8 inches from edges and ends of sheathing panels.

E. Do not leave exposed surfaces of gypsum sheathing unprotected beyond the manufacturer's recommendation without a weather barrier cladding.

F. Building Wrap and Flexible Flashings Installation: Refer to Section 07 25 00.

3.8 JOINT TREATMENT AND FINISH

A. Finish gypsum board surfaces in accordance with ASTM C840, GA-214, and GA-216.

B. Remove dirt, oil, and other materials that may cause lack of bond from all surfaces to receive joint compound.

C. Set mechanical fasteners below the plane of the board.

D. Tape, fill, and sand all joints, edges and corners to produce smooth surface ready to receive finishes. Fill all dents, gouges, recesses, or other depressions with joint compound to produce a monolithic surface.

E. Feather coats onto adjoining surfaces so that camber is maximum 1/32-inch.

F. Levels of Finish: Finish gypsum board surfaces in accordance with GA-214 as follows:

Area	Finish
Plenum areas above ceilings.	Level 1 finish, no texture.
Standard and moisture resistant gypsum backing board (substrate for adhesive applied finish material).	Level 2 finish, no texture.
Wall covering.	Level 4 finish, no texture.
Smooth finish; satin/eggshell paint finish.	Level 4 finish. Level 5 finish where critical (severe) lighting condition occurs (refer to GA-214 for description of critical lighting).
Smooth finish; semi-gloss paint finish.	Level 5 finish.

3.9 TOLERANCES

A. Maximum variation from true flatness: 1/4 inch in 10 feet in any direction.

B. Maximum surface variation of substrate for walls to receive ceramic tile: Refer to Section 09 30 00.

3.10 CLEANING AND PROTECTION

A. Cleaning and Repair: Clean surfaces that have been spotted or soiled during wallboard application.

B. Defective Work: Remove and replace defective work that cannot be satisfactorily repaired, at the direction of the Architect, with no additional cost to the Owner.

C. Protection: Protect installed work against damage from other construction work.

D. Upon completion of the work under this Section, remove all surplus material, rubbish and debris from the premises and leave floors broom clean.

END OF SECTION