SECTION 09 21 16 – GYPSUM BOARD ASSEMBLIES

PART 1 – GENERAL

1.1 RELATED SECTIONS
- A. Section 01 33 00 – Submittal Procedures
- B. Section 01 74 21 – Construction/Demolition Waste Management and Disposal

1.2 REFERENCES
- A. American Society for Testing and Materials International (ASTM):
  1. ASTM C475/C475M, Specification for Joint Compound and Joint Tape for Finishing Gypsum Board
  2. ASTM C514, Specification for Nails for the Application of Gypsum Board
  3. ASTM C557, Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing (as applicable)
  4. ASTM C645 Standard Specification for Nonstructural Framing Members
  5. ASTM C840, Specification for Application and Finishing of Gypsum Board
  6. ASTM C954, 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 (as applicable)
  7. ASTM C1002, Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
  8. ASTM C1047, Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base
  9. ASTM C1280, Specification for Application of Gypsum Sheathing Board
  10. ASTM C1396/C1396M, Standard Specification for Gypsum Board
  11. ASTM D3273, Standard test Method for Resistance to Growth of Mold on the Surface on Interior Coatings in an Environmental Chamber

1.3 DELIVERY, STORAGE AND HANDLING
- A. Deliver materials in original packages, containers or bundles bearing manufacturers brand name and identification.
- B. Store materials inside, level, under cover. Keep dry. Protect from weather, other elements and damage from construction operations and other causes.
- C. Handle gypsum boards to prevent damage to edges, ends or surfaces. Protect metal accessories and trim from being bent or damaged.

1.4 SITE ENVIRONMENTAL REQUIREMENTS
- A. Maintain temperature minimum 10 degrees C, maximum 21 degrees C for 48 hours prior to and during application of gypsum boards and joint treatment, and for at least 48 hours after completion of joint treatment.
- B. Apply board and joint treatment to dry, frost free surfaces.
- C. Ventilation: Ventilate building spaces as required to remove excess moisture that would prevent drying of joint treatment material immediately after its application.

1.5 SAMPLES

1.5.1 Submit samples of gypsum board for wet areas.

1.6 WASTE MANAGEMENT AND DISPOSAL

1.6.1 Separate and recycle waste materials in accordance with local jurisdictional requirements including identification of recycling capabilities. Evaluate local recycling options for waste disposal to support landfill avoidance for components of gypsum board assemblies and resulting waste.

1.6.2 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard packaging material in accordance with local jurisdictional requirements including identification of recycling capabilities in accordance with General Contractor's Waste Management Plan.

1.6.3 Do not dispose of unused paint and caulking materials into sewer systems, into lakes, streams, onto ground or in other locations where it will pose health or environmental hazard.

PART 2 - PRODUCTS

2.1 MATERIALS

2.1.1 Alternate 1: Standard board: to ASTM C1396/C1396M, GREENGUARD Gold Certified, 12.7 mm thick, standard width x maximum practical length, ends square, edges tapered. All walls/partitions not requiring mold and moisture resistant gypsum board.
Easi-Lite® by CertainTeed Gypsum or Approved Equal

Alternate 2: Low Carbon Standard board: to ASTM C1396/C1396M, GREENGUARD Gold Certified, 12.7 mm thick, standard width x maximum practical length, ends square, edges tapered. A1-A3 GWP reduced by ≥35%. All walls not requiring mold and moisture resistant gypsum board.
Easi-Lite® CarbonLow™ by CertainTeed Gypsum or Approved Equal

2.1.2 Alternate 1: Mold & Mildew resistant board: to ASTM C1396/C1396M, Mold Resistance rating of 10 to ASTM D3273, GREENGUARD Gold Certified, regular, 12.7 mm thick, 1220 mm wide x maximum practical length, ends square, edges tapered.
M2Tech® Gypsum Board by CertainTeed Gypsum or Approved Equal.

Alternate 2: Low Carbon Mold & Mildew resistant board: to ASTM C1396/C1396M, Mold Resistance rating of 10 to ASTM D3273, GREENGUARD Gold Certified, regular, 12.7 mm thick, 1220 mm wide x maximum practical length, ends square, edges tapered. A1-A3 GWP reduced by ≥35%.
M2Tech® CarbonLow™ Gypsum Board by CertainTeed Gypsum

2.1.4 Metal furring runners, hangers, tie wires, inserts, and anchors as required per manufacturer recommendations for complete installation of gypsum board system.

2.1.5 Drywall furring channels: 0.5 mm core thickness galvanized steel channels for screw attachment as required per manufacturer recommendations for complete installation of gypsum board system.

2.1.6 Resilient clips: 0.5 mm base steel thickness galvanized steel for resilient attachment as required per manufacturer recommendations for complete installation of gypsum board system.

2.1.7 Nails: to ASTM C514 per manufacturer recommendations for complete installation of gypsum board system based on wet, dry, and fire rated locations.

2.1.8 Steel drill screws: to ASTM C1002 per manufacturer recommendations for complete installation of gypsum board system based on wet, dry, and fire rated locations.

2.1.9 Stud adhesive: to ASTM C557.

2.1.10 Casing beads, corner beads, and edge trim: to ASTM C1047, copolymer, 0.5 mm base edge thickness, one piece length per location. GREENGUARD Gold Certified. **No-Coat® Drywall Corner by CertainTeed Gypsum or Approved Equal.**

2.1.11 Shadow molding: 35 mm high, snap-on trim, of extruded PVC plastic, white color.

2.1.12 Sealants: in accordance with manufacturer recommendations. GREENGUARD Gold Certified.

2.1.13 Joint compound: to ASTM C475/C475M, GREENGUARD Gold Certified. **CertainTeed® All-Purpose Joint Compound by CertainTeed Gypsum or Approved Equal.**

2.1.14 Mold & Mildew resistant Joint Compound: to ASTM C475/C475M, GREENGUARD Gold certified. Used with mold and mildew resistant gypsum board. **CertainTeed® Mold-Resistant Lite Joint Compound by CertainTeed Gypsum or Approved Equal.**

2.1.16 Fiberglass Joint Tape: for use with joint compounds in wet areas, GREENGUARD Gold Certified.
FibaFuse® Paperless Drywall Tape by CertainTeed Gypsum

2.2 FINISHES

2.2.1 Level 5 finish.

CertainTeed® brand Level V Wall & Ceiling Primer/Surfacer by CertainTeed Gypsum.

PART 3 - EXECUTION

3.1 ERECTION

3.1.1 Do applications and finishing of gypsum board in accordance with ASTM C840 and/or GA-216 except where specified otherwise.

3.1.2 Erect hangers and runner channels for suspended gypsum board ceilings in accordance with ASTM C840 except where specified otherwise.

3.1.3 Support light fixtures by providing additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of fixture.

3.1.4 Install work level to tolerance of [1:1200].

3.1.5 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, grilles, electric panels, etc.

3.1.6 Install [19 x 64] mm furring channels parallel to, and at exact locations of steel stud partition header track (if applicable).

3.1.7 Furr for gypsum board faced vertical bulkheads within and at termination of ceilings.

3.1.8 Install wall furring for gypsum board wall finishes in accordance with ASTM C840, except where specified otherwise.

3.1.9 Furr openings and around built-in equipment, cabinets, access panels, electric panels, etc., on four sides. Extend furring into reveals. Check clearances with equipment suppliers.

3.1.10 Furr duct shafts, beams, columns, pipes and exposed services where indicated.

3.2 APPLICATION

3.2.1 Do not apply gypsum board until bucks, anchors, blocking, sound attenuation, electrical and mechanical work are approved.

3.2.2 Apply single layer gypsum board to wood or metal furring or framing using screw fasteners and stud adhesive (where required) for first layer. Maximum spacing of screws 300 mm on-center.

3.2.2.1 Single-Layer Application:

3.2.2.1.1 Apply gypsum board on ceilings prior to application of walls in accordance with ASTM C840.

3.2.2.1.2 Apply gypsum board vertically or horizontally, providing sheet lengths that will minimize end joints.

3.3.3 Apply water-resistant gypsum board where shower wall, toilet and sink wall, and wainscot panels are to be applied. Apply water-resistant sealant to edges, ends, cutouts that expose gypsum core and to fastener heads. Install and prepare mold and moisture resistant gypsum board per wall panel manufacturer requirements.

3.3.4 Apply gypsum board using stud adhesive on furring or framing per manufacturer recommendations.

3.3.5 Install ceiling boards in direction that will minimize number of end-butt joints. Stagger end joints at least 250 mm.

3.3.6 Install gypsum board on walls vertically to avoid end-butt joints.

3.3.7 Install gypsum board with face side out.

3.3.8 Do not install damaged or damp boards.

3.3.9 Locate edge or end joints over supports. Stagger vertical joints over different studs on opposite sides of wall.

3.3 INSTALLATION

3.3.1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full-length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Miter and fit corners accurately, free from rough edges. Secure at 150 mm on-center using contact adhesive for full length.

3.3.2 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant as required.

3.3.3 Install insulating strips continuously at edges of gypsum board and casing beads abutting metal window and exterior doorframes, to provide thermal break at bathrooms.

3.3.4 Install shadow molding at gypsum board/ceiling juncture as required. Minimize joints; use corner pieces and splicers.

3.3.5 Splice corners and intersections together and secure to each member with 3 screws.

3.3.6 Install access doors to electrical and mechanical fixtures specified in respective sections.

3.3.6.1 Rigidly secure frames to furring or framing systems.

3.3.7 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound installed according to manufacturer's directions and feathered out onto panel faces.

3.3.8 Gypsum Board Finish: finish gypsum board walls and ceilings to following levels in accordance with GA-214, Levels of Finish for Gypsum Panel Products:

3.3.8.1 Levels of finish:

3.3.8.1.1 Level 5: Embed tape for joints and interior angles in CertainTeed® or approved equal joint compound and apply three separate coats of CertainTeed® or approved equal joint compound over joints, angles, fastener heads and accessories; apply a thin skim coat of CertainTeed® or approved equal joint compound or CertainTeed® Level V or approved equal to entire surface; surfaces smooth and free of tool marks and ridges.

3.3.9 Finish corner beads, control joints and trim as required with two coats of CertainTeed® joint compound or approved equal and one coat of CertainTeed® taping compound or approved equal, feathered out onto panel faces.

3.3.10 Fill screw head depressions with CertainTeed® joint and taping compounds or approved equal to bring flush with adjacent surface of gypsum board, to be invisible after surface finish is completed.

3.3.11 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.

3.3.12 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.

3.3.13 Apply thin coat to entire surface using trowel or drywall broad knife to fill surface texture differences, variations or tool marks.

3.3.14 Allow skim coat to dry completely.

3.3.15 Remove ridges by light sanding or wiping with damp cloth.

3.3.16 Provide protection that ensures gypsum drywall work will remain without damage or deterioration at time of substantial completion.

END OF SECTION