

## Part 1 GENERAL

### 1.01 RELATED SECTIONS

- .1 Section 06 10 11 - Rough Carpentry.
- .2 Section 09 22 16 - Non-Structural Metal Framing.
- .3 Section 09 91 00 - Painting.

### 1.02 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM).
  - .1 ASTM B221-14. Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
  - .2 ASTM C475/C475M-15. Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
  - .3 ASTM C840-16. Standard Specification for Application and Finishing of Gypsum Board.
  - .4 ASTM C954-15. 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.
  - .5 ASTM C1002-16. Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
  - .6 ASTM C1047-14a. Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
  - .7 ASTM C1178/C1178M-13. Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel.
  - .8 ASTM C1278/C1278M-07a(2015). Standard Specification for Fiber-Reinforced Gypsum Panel.
  - .9 ASTM C1288-14. Standard Specification for Discrete Non-Asbestos Fiber-Cement Interior Substrate Sheets.
  - .10 ASTM C1396/C1396M-14a. Standard Specification for Gypsum Board.

### 1.03 SUBMITTALS

- .1 Product Data: Submit Product Data Sheet and MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit test reports for High Impact Resistant panels. Submit manufacturers installation instructions.

### 1.04 MOCK-UPS

- .1 Construct Mock-Up as specified in Section 01 45 00 - Quality Control.

- .2 Construct Mock-up in location as directed by Consultant. Mock-up may be part of finished assembly or temporary construction as directed by Consultant. Minimum size: full height x 6.00 m long. Demonstrate installation of framing, application of board and joint details.
- .3 Approved Mock-Up may remain part of the finished work.

#### 1.05 DELIVERY, STORAGE AND HANDLING

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

#### 1.06 SITE ENVIRONMENTAL REQUIREMENTS

- .1 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.
- .2 Apply board and joint treatment to dry, frost free surfaces.
- .3 Ventilation: Ventilate building spaces as required to remove excess moisture that would prevent drying of joint treatment material immediately after its application.

#### 1.07 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal, paper, plastic, polystyrene, and corrugated cardboard packaging material for recycling in accordance with Waste Management Plan.
- .4 Divert unused gypsum from landfill to gypsum recycling facility for disposal approved by Consultant.
- .5 Divert unused metal materials from landfill to metal recycling facility approved by Consultant.

### Part 2 PRODUCTS

#### 2.01 MATERIALS

- .1 Standard board: to ASTM C1396/C1396M. Regular and Type X. Thickness as indicated. 1219 mm and 1372 mm wide. Provide in maximum practical length. Ends square cut, edges bevelled.
- .2 Glass mat water-resistant gypsum backing board: to ASTM C1178/C1178M. Water resistant core with the face covered with a glass mat partially or completely embedded in the core and a water-resistant coating on the back. Thicknesses as indicated in the drawings. 1219 mm wide x maximum practical length.
- .3 Impact resistant gypsum board: reinforced gypsum board to ASTM C1278/C1278M. Type X designation. High density, proprietary gypsum and fibre based core with reinforced front and back face skins. Flexural strength 1078 N. Weight: 14.1 kg/square meter. 15.9 mm thick, 1219 mm wide x maximum practical length, ends square cut, edges tapered.

- .4 Cement board: to ASTM C1288. Mixture of portland cement, aggregate, sand, selected filler and polymer coated glass fibre reinforcing mesh. 15.9 mm thick, 1219 mm wide x maximum practical length.
- .5 Drywall furring channels: 0.5 mm core thickness galvanized steel channels for screw attachment of gypsum board.
- .6 Steel drill screws: to ASTM C1002.
- .7 Steel drill screws for application of gypsum board into heavier gauge steel studs: to ASTM C954.
- .8 Cementitious Board Fasteners: board manufacturer's purpose made screws, corrosion resistant steel, self-drilling points, counter-sink heads to prevent strip-out. Designed for application to steel stud construction.
- .9 Casing beads, corner beads, control joints and edge trim: to ASTM C1047, metal, zinc-coated by electrolytic process, 0.5 mm base thickness, perforated flanges, one piece length per location.
- .10 Insulating strip: rubberized, moisture resistant, 3 mm thick closed cell neoprene strip, 12 mm wide, with self sticking permanent adhesive on one face, lengths as required.
- .11 Joint compound: to ASTM C475, asbestos-free. Manufacturer's premixed, commercial grade products specifically intended for use with appropriate substrate panels.
- .12 Setting compound: to ASTM C475, asbestos-free. Factory blended, site mixed prepackaged, chemically setting powder compound containing vinyl binders and calcium sulfate filler. Commercial grade products specifically intended for use in setting accessories and filling large joints. Special formulation providing a high strength bond and low shrinkage that finishes with a hard, plaster like surface when dry and is virtually unaffected by humidity.
- .13 Accessories: to ASTM B221, Manufacturer's standard aluminum extrusions with perforated flanges, primed to receive paint, 3000 mm lengths complete with mitered intersections where reveal changes direction or abuts other trim.
- .14 **Reveal mouldings:**
  - .1 **Recessed Base: fabricated from extruded aluminum, alloy 6063 T5. Clear anodized finish. Profile: 2.5 inch vertical base x 5/8 inch depth to accommodate layer of 5/8 gypsum board. Acceptable product: DA.5 by Fry Reglet.**
  - .2 **Veneer plaster Z reveal: fabricated from extruded aluminum, alloy 6063 T5. Clear anodized finish. Profile 7/8 inch vertical leg, 5/8 inch reveal depth, 5/8 inch reveal width. Acceptable product: PI.3 VPRZ-625-625 by Fry Reglet.**

## Part 3 EXECUTION

### 3.01 ERECTION

- .1 Do application and finishing of gypsum board in accordance with ASTM C840 except where specified otherwise.
- .2 Install work level to tolerance of 1:1200.
- .3 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers and grilles.
- .4 Install wall furring for gypsum board wall finishes in accordance with ASTM C840, except where specified otherwise.
- .5 Furr duct shafts, beams, columns, pipes and exposed services where indicated.

- .6 Install 19 x 64 mm furring channels parallel to, and at exact locations of steel stud partition header track.
- .7 Erect hangers and runner channels for suspended gypsum board ceilings in accordance with ASTM C840 except where specified otherwise.
- .8 Support light fixtures by providing additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of fixture.
- .9 Furr for gypsum board faced vertical bulkheads within and at termination of ceilings.
- .10 Furr above suspended ceilings for gypsum board fire and sound stops and to form plenum areas as indicated.
- .11 Furr openings and around built-in equipment, cabinets, access panels, on four sides. Extend furring into reveals. Check clearances with equipment suppliers.
- .12 Erect drywall resilient furring transversely across studs, between the layers of gypsum board, spaced maximum 600 mm on centre and not more than 150 mm from ceiling/wall juncture. Secure to each support with 25 mm drywall screw.
- .13 Install 150 mm continuous strip of 15.9 mm gypsum board along base of partitions where resilient furring installed.

### 3.02 APPLICATION

- .1 Do not apply gypsum board until bucks, anchors, blocking, sound attenuation, electrical and mechanical work are approved.
- .2 Do not apply gypsum board until Firestopping has been installed and inspected as specified in Section 07 84 10 - Comprehensive Firestopping.
- .3 Apply single and double layer gypsum board to metal furring or framing using screw fasteners. Maximum spacing of screws 300 mm on centre.
- .4 Apply 12 mm diameter bead of sealant continuously around periphery of each face of partitioning to seal gypsum board/structure junction where partitions abut fixed building components. Seal full perimeter of cut-outs around electrical boxes and ducts
- .5 Install gypsum board on walls vertically to avoid end-butt joints. At high walls, install boards horizontally with end joints staggered over studs, except where local codes or fire-rated assemblies require vertical application.
- .6 Install gypsum board with face side out. Do not install damaged or damp boards.
- .7 Locate edge or end joints over supports. Stagger vertical joints over different studs on opposite sides of wall.
- .8 Install ceiling boards in direction that will minimize number of end-butt joints. Stagger end joints at least 250 mm.
- .9 Single-Layer Application: Apply gypsum board on ceilings prior to application of walls in accordance with ASTM C840.
  - .1 Apply gypsum board to walls vertically or horizontally, providing sheet lengths that will minimize end joints.
- .10 Double-Layer Application:
  - .1 Install gypsum board for base layer and exposed gypsum board for face layer.
  - .2 Apply base layer to ceilings prior to base layer application on walls. Apply face layers in same sequence. Offset joints between layers at least 250 mm.
  - .3 Apply base layers at right angles to supports unless otherwise indicated.

- .4 Apply base layer on walls and face layers vertically with joints of base layer over supports and face layer joints offset at least 250 mm with base layer joints.
- .11 Cement Board Application. Apply cement board to steel stud framing where indicated in the drawings and wherever Ceramic Tile wall finishes are to be applied. Use manufacturer's proprietary screw fasteners, purpose made for attachment of cement board to steel framing. Apply multiple layers where indicated.
- .12 Water Resistant Board Application: Apply glass mat water-resistant gypsum board in washrooms to portions of walls that are not to be covered with Ceramic Tile finishes. Apply to all gypsum board washroom ceilings. Install elsewhere in the building where indicated. Install adjacent to slop sinks and in janitors closets. Apply water-resistant sealant to edges, ends, cut-outs which expose gypsum core and to fastener heads.
- .13 Impact Resistant Board Application. Apply impact resistant gypsum board panels where indicated in the drawings. Install boards in accordance with Manufacturer's written instructions.

### 3.03 INSTALLATION

- .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. Mitre and fit corners accurately, free from rough edges. Secure at 150 mm on centre.
- .2 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.
- .3 Install insulating strips continuously at edges of gypsum board and casing beads abutting metal window and exterior door frames, to provide thermal break.
- .4 Install access doors to electrical and mechanical fixtures specified in respective sections. Rigidly secure frames to furring or framing systems.
- .5 Install reveal base moulding at bottom of wall where indicated to create damage resistant recessed base detail. Secure to wall studs through Gypsum board in accordance with Manufacturer's instructions. Apply tape and joint compound.
- .6 Install Z reveal where indicated in the drawings. Secure to wall studs through Gypsum board in accordance with Manufacturer's instructions. Apply tape and joint compound.

### 3.04 FINISHING

- .1 Finish face panel joints and internal angles with joint system consisting of joint or setting compound, joint tape and joint or setting compound installed according to manufacturer's directions and feathered out onto panel faces.
- .2 Setting compound. Mix and apply setting compound in accordance with Manufacturers written instructions. Apply where larger joints are encountered Apply setting compound where wall surfaces are expected to be exposed to high humidity conditions.
- .3 Embed tape for joints and interior angles in joint or setting compound. Surfaces to be free of excess compound; tool marks and ridges are acceptable.
- .4 Finish corner beads, control joints and trim as required with a minimum of three coats of joint or setting compound, feathered out onto panel faces.
- .5 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board so as to be invisible after surface finish is completed.
- .6 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .7 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.

- .8 After application of white primer / sealer coat as specified in Section 09 91 00 - Painting, conduct prime check to identify all imperfections. Repair imperfections and prepare all surfaces to meet Finish Level 4 as specified below.
- .9 Gypsum Board Finish: finish gypsum board walls and ceilings to following levels in accordance with Gypsum Association Levels of Gypsum Board Finish:
  - .1 Final finish to meet Gypsum Board Finish Level 4 defined as follows: Embed tape for joints and interior angles in joint or setting compound and apply three separate coats of joint or setting compound over joints, angles, fastener heads and accessories; surfaces smooth and free of tool marks and ridges.

**3.05 PROTECTION**

- .1 Provide protection to the approval of Consultant to ensure that gypsum drywall work will remain without damage or deterioration at time of substantial completion.

**END OF SECTION**