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**Part 1            General**

**1.1            SUMMARY**

- .1    Work includes installation of gypsum board for repairs to walls due to new door and window installations.
- .2    Related Work:
  - .1    Division 01 – General Requirements.
  - .2    Section 06 10 53 – Miscellaneous Rough Carpentry.
  - .3    Section 06 20 23 – Finish Carpentry.
  - .4    Section 07 21 16.13 – Mineral Wool Blanket Insulation.
  - .5    Section 07 27 13 – Modified Bituminous Sheet Air Barrier.
  - .6    Section 07 92 00 – Joint Sealants.

**1.2            REFERENCES**

- .1    ASTM International
  - .1    ASTM C475-15, Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
  - .2    ASTM C514-04(2014), Standard Specification for Nails for the Application of Gypsum Board.
  - .3    ASTM C840-16, Standard Specification for Application and Finishing of Gypsum Board.
  - .4    ASTM C1002-16, 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.
  - .5    ASTM C1047-14a, Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
  - .6    ASTM C1396/C1396M-14a, Standard Specification for Gypsum Wallboard.
- .2    Gypsum Association
  - .1    GA-214-10, Recommended Levels of Gypsum Board Finish.

**1.3            ACTION SUBMITTALS**

- .1    Product Data: submit manufacturer's instructions, printed product literature and data sheets for gypsum board assemblies.

**1.4            FIELD CONDITIONS**

- .1    Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.
- .2    Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.

- .3 Ventilate building spaces as required to remove excess moisture that would prevent drying of joint treatment material immediately after application.

## **Part 2 Products**

### **2.1 INTERIOR GYPSUM BOARD**

- .1 Standard Board: to ASTM C1396/C1396M.
  - .1 Size: to suit application
  - .2 Ends: square cut
  - .3 Edges: bevelled
  - .4 Thickness: to match existing wall assembly
  - .5 Type: to match existing wall assembly
  - .6 Texture finish: asbestos-free standard white texture coating and primer-sealer, recommended by gypsum board manufacturer.

### **2.2 TRIM ACCESSORIES**

- .1 Interior Trim: ASTM C 1047.
  - .1 Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized steel sheet.
  - .2 Shapes:
    - .1 Cornerbead.
    - .2 Bullnose bead.
    - .3 LC-Bead: J-shaped; exposed long flange receives joint compound.
    - .4 L-Bead: L-shaped; exposed long flange receives joint compound.
    - .5 U-Bead: J-shaped; exposed short flange does not receive joint compound.
    - .6 Expansion (control) joint.
    - .7 Curved-Edge Cornerbead: With notched or flexible flanges.
- .2 Trim at Wall Interface with Window Mullions
  - .1 Frame End Cap with snap on PVC battens, clear anodized aluminum, size to suit.
    - .1 Provide continuous black neoprene gasket between end cap and window mullion.

### **2.3 JOINT TREATMENT MATERIALS**

- .1 General: Comply with ASTM C 475/C 475M.
- .2 Joint Tape:
  - .1 Interior Gypsum Board: Paper.
- .3 Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

- .1 Prefilling: At open joints, rounded or bevelled panel edges, and damaged surface areas, use setting-type taping compound.
- .2 Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound.
  - .1 Use setting-type compound for installing paper-faced metal trim accessories.
- .3 Fill Coat: For second coat, use drying-type, all-purpose compound.
- .4 Finish Coat: For third coat, use drying-type, all-purpose compound.
- .5 Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound.

## **2.4 AUXILIARY MATERIALS**

- .1 General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
- .2 Furring channels: as recommended by manufacturer to attach gypsum board to concrete block.
- .3 Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
- .4 Steel Drill Screws: ASTM C 1002.
- .5 Nails: to ASTM C514.
- .6 Sealants: in accordance with Section 07 92 00 – Joint Sealants.

## **Part 3 Execution**

### **3.1 EXAMINATION**

- .1 Examine areas and existing substrates for compliance with requirements and other conditions affecting performance.
- .2 Proceed with installation once insulation, air barrier and rough carpentry work has been completed and approved by Departmental Representative.

### **3.2 APPLYING AND FINISHING PANELS, GENERAL**

- .1 Comply with ASTM C 840.
- .2 Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1.5 mm of open space between panels. Do not force into place.
- .3 Locate edge and end joints over supports. Do not place bevelled edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- .4 Form control and expansion joints with space between edges of adjoining gypsum panels.

- .5 Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
  - .1 Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 0.7 sq. m in area.
  - .2 Fit gypsum panels around ducts, pipes, and conduits.
  - .3 Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 6.4 to 9.5 mm wide joints to install sealant.
- .6 Attachment to concrete block or concrete: furring channels as recommended by manufacturer.
- .7 Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

### 3.3 APPLYING INTERIOR GYPSUM BOARD

- .1 Single-Layer Application:
  - .1 On partitions/walls, apply gypsum panels horizontally (perpendicular to framing) unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
    - .1 Stagger abutting end joints not less than one framing member in alternate courses of panels.
    - .2 At stairwells and other high walls, install panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly.
  - .2 On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
  - .3 Fastening Methods: Apply gypsum panels to supports with steel drill screws or as recommended by manufacturer for application.
- .2 Multilayer Application:
  - .1 On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
  - .2 On Z-furring members, apply base layer vertically (parallel to framing) and face layer either vertically (parallel to framing) or horizontally (perpendicular to framing) with vertical joints offset at least one furring member. Locate edge joints of base layer over furring members.
  - .3 Fastening Methods: Fasten base layers and face layers separately to supports with screws.

### 3.4 INSTALLING TRIM ACCESSORIES

- .1 General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

- .2 Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Departmental Representative for visual effect.
- .3 Interior Trim: Install in the following locations:
  - .1 Cornerbead: Use at outside corners unless otherwise indicated.
  - .2 Bullnose Bead: Use where recommended by manufacturer
  - .3 LC-Bead: Use at exposed panel edges.
  - .4 L-Bead: Use where recommended by manufacturer
  - .5 U-Bead: Use where recommended by manufacturer
  - .6 Curved-Edge Cornerbead: Use at curved openings.
- .4 Install wall end cap where gypsum board partition intersects with window mullion.

### **3.5 FINISHING GYPSUM BOARD**

- .1 General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- .2 Prefill open joints, rounded or bevelled edges, and damaged surface areas.
- .3 Apply joint compound and joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- .4 Gypsum Board Finish Levels: Level 5 to GA-410:

### **3.6 PROTECTION**

- .1 Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- .2 Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- .3 Remove and replace panels that are wet, moisture damaged, and mould damaged.
  - .1 Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  - .2 Indications that panels are mould damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

**END OF SECTION**



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**Part 1            General**

**1.1            RELATED REQUIREMENTS:**

- .1       Division 01 - General Requirements
- .2       Section 09 29 00 – Gypsum Board

**1.2            REFERENCES**

- .1       Master Painters Institute (MPI)
  - .1       MPI Architectural Painting Specifications Manual, 2010

**1.3            DEFINITIONS**

- .1       Concealed Surface: A surface that cannot be seen because the view from any angle is obstructed by an immovable object.
- .2       Exposed and semi-exposed surface: Any surface that is not a concealed surface.
- .3       Finish: a final surface treatment intended to enhance the appearance of a substrate or protect it from the adverse effects of its environmental, or both, and includes but is not limited to paint, stains, coatings, laminates, tiles, fabrics and carpets.
  - .1       Primer finish is not considered a finish.
- .4       Gloss Levels:
  - .1       Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
  - .2       Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
  - .3       Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
  - .4       Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
  - .5       Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
  - .6       Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
  - .7       Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

**1.4            ACTION SUBMITTALS**

- .1       Product Data: For each type of product. Include preparation requirements and application instructions.

**1.5            MAINTENANCE MATERIAL SUBMITTALS**

- .1       Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

- .1 Paint: confirm amount with Departmental Representative

## 1.6 QUALITY ASSURANCE

### .1 MPI Standards:

- .1 Products: Complying with MPI standards indicated and listed in *MPI Approved Products List*.
- .2 Preparation and Workmanship: Comply with requirements in *MPI Architectural Painting Specification Manual* for products and paint systems indicated.

### .2 Mock-up:

- .1 Paint one (1) gypsum board wall in location designated by Departmental Representative.
- .2 Mock-up may remain as part of Work if approved by Departmental Representative

### .3 DELIVERY, STORAGE, AND HANDLING

### .4 Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 7 deg C.

- .1 Maintain containers in clean condition, free of foreign materials and residue.
- .2 Remove rags and waste from storage areas daily.

### .5 Fire Safety Requirements:

- .1 Provide Type ABC fire extinguisher adjacent to storage area.
- .2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
- .3 Handle, store, use and dispose of flammable and combustible materials in accordance with National Fire Code of Canada requirements.

### .6 Waste Management and Disposal:

- .1 Place materials defined as hazardous or toxic in designated containers.
- .2 Handle and dispose of hazardous materials in accordance with CEPA, regulations.
- .3 Ensure emptied containers are sealed and stored safely.
- .4 Unused coating materials must be disposed of at official hazardous material collections site as approved by Departmental Representative.
- .5 Paint, stain and wood preservative finishes and related materials (thinners, and solvents) are regarded as hazardous products and are subject to regulations for disposal. Information on these controls can be obtained from Provincial Ministries of Environment and Regional levels of Government.
- .6 Material which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.



- .7 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
- .8 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into ground follow these procedures:
  - .1 Retain cleaning water for water-based materials to allow sediments to be filtered out.
  - .2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
  - .3 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
  - .4 Dispose of contaminants in approved legal manner in accordance with hazardous waste regulations.
  - .5 Empty paint cans are to be dry prior to disposal or recycling (where available).
- .9 Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.

## **1.7 PROJECT CONDITIONS**

- .1 Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 10 and 35 deg C.
- .2 Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 3 deg C above the dew point; or to damp or wet surfaces.

## **Part 2 Products**

### **2.1 PAINT, GENERAL**

- .1 Material Compatibility:
  - .1 Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  - .2 For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- .2 Chemical Components of Field-Applied Interior Paints and Coatings: Provide topcoat paints and anti-corrosive and anti-rust paints applied to ferrous metals that comply with the following chemical restrictions; these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:
  - .1 Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).

- .2 Restricted Components: Paints and coatings shall not contain any of the following:
  - .1 Acrolein.
  - .2 Acrylonitrile.
  - .3 Antimony.
  - .4 Benzene.
  - .5 Butyl benzyl phthalate.
  - .6 Cadmium.
  - .7 Di (2-ethylhexyl) phthalate.
  - .8 Di-n-butyl phthalate.
  - .9 Di-n-octyl phthalate.
  - .10 1,2-dichlorobenzene.
  - .11 Diethyl phthalate.
  - .12 Dimethyl phthalate.
  - .13 Ethylbenzene.
  - .14 Formaldehyde.
  - .15 Hexavalent chromium.
  - .16 Isophorone.
  - .17 Lead.
  - .18 Mercury.
  - .19 Methyl ethyl ketone.
  - .20 Methyl isobutyl ketone.
  - .21 Methylene chloride.
  - .22 Naphthalene.
  - .23 Toluene (methylbenzene).
  - .24 1,1,1-trichloroethane.
  - .25 Vinyl chloride.
- .3 Colours: to be advised by Departmental Representative from manufacturer's full colour range.
- .4 Gloss Levels: to match levels on adjacent gypsum board walls and as determined by Departmental Representative.

## **2.2 PAINT SYSTEMS**

- .1 Paint gypsum board surfaces in accordance with the following MPI Architectural Painting Specification Manual requirements
  - .1 Existing gypsum board: RIN 9.2MM – Institutional Low Odour/ Low VOC, gloss level to match existing level and be approved by Departmental Representative, Premium Grade

- .2 New gypsum board: INT 9.2m – Institutional Low Odour/ Low VOC, gloss level to match existing level and by approved by Departmental Representative, Premium Grade

### **Part 3 Execution**

#### **3.1 EXAMINATION**

- .1 Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.
- .2 Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
  - .1 Gypsum Board: 12 percent.
- .3 Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- .4 Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
  - .1 Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

#### **3.2 PREPARATION**

- .1 Comply with manufacturer's written instructions and recommendations in MPI Architectural Painting Specification Manual applicable to substrates indicated.
- .2 Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
  - .1 After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
  - .2 Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- .3 Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.
  - .1 Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.
- .4 Gypsum Board Substrates: Do not begin paint application until finishing compound is dry and sanded smooth.

### **3.3 APPLICATION**

- .1 Apply paints according to manufacturer's written instructions and MPI Painting Specification Manual.
  - .1 Use applicators and techniques suited for paint and substrate indicated.
  - .2 Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
  - .3 Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
- .2 Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match colour of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- .3 If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, colour, and appearance.
- .4 Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and colour breaks.

### **3.4 CLEANING AND PROTECTION**

- .1 At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- .2 After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- .3 Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Departmental Representative, and leave in an undamaged condition.
- .4 At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

**END OF SECTION**