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**PART 1 - GENERAL**

1.1 Related Sections

- .1 Section 07 92 00 - Joint Sealants.
- .2 Section 09 22 16 - Non-Structural Metal Framing.
- .3 Section 09 91 10 - Painting.

1.2 References

- .1 Architectural Woodwork Manufacturers' Association of Canada (AWMAC):
  - .1 Architectural Woodwork Quality Standards Illustrated, Eighth Edition, Version 2.0, 2005 (referred to hereinafter as "QSI").
- .2 American Society for Testing and Materials (ASTM):
  - .1 ASTM C475/C475M-02(2007), Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
  - .2 ASTM C840-08, Standard Specification for Application and Finishing of Gypsum Board.
  - .3 ASTM C847-10, Standard Specification for Metal Lath.
  - .4 ASTM C1002-07, Standard Specification for Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
  - .5 ASTM C1047-10, Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
  - .6 ASTM C1396/C1396M-09a, Standard Specification for Gypsum Board.
- .3 Canadian Standards Association (CSA):
  - .1 CSA-O121-08, Douglas Fir Plywood.
- .4 Health Canada / Workplace Hazardous Materials Information System (WHMIS):
  - .1 Material Safety Data Sheets (MSDS).
- .5 Underwriters' Laboratories of Canada (ULC)
  - .1 CAN/ULC-S702-97, Thermal Insulation, Mineral Fibre, for Buildings.

1.3 Submittals

- .1 Submit documents in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit two copies of WHMIS MSDS Material Safety Data Sheets in accordance with Section 01 35 29 - Health and Safety Requirements for each product. Indicate VOC content of sealants.

1.4 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 from being bent or damaged.

1.5 Site Environmental Requirements

- .1 Comply with the requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous material; and regarding labelling and the provision of Material Safety Data Sheets.

- .2 Maintain temperature minimum 10°C, maximum 21°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.
  - .3 Apply board and joint treatment to dry, frost-free surfaces.
  - .4 Ventilation: Ventilate building spaces as required to remove excess moisture that would prevent drying of joint treatment material immediately after its application.
- 1.6 Waste Management and Disposal
- .1 Separate and recycle waste materials in accordance with Section 01 74 19 - 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, corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
  - .4 Divert unused gypsum from landfill to gypsum recycling facility for disposal approved by the Departmental Representative.
  - .5 Divert unused metal materials from landfill to metal recycling facility approved by the Departmental Representative.
  - .6 Identify hazardous and related materials which cannot be reused, are regarded as hazardous products and are subject to regulations for disposal. Information on these controls can be obtained from the Provincial Ministries of Environment and Regional Levels of Government.
  - .7 Safely store materials defined as hazardous or toxic waste, including emptied containers and application apparatus, in containers or areas designated for hazardous waste and dispose of contaminants in an approved legal manner.
  - .8 Divert unused paint and caulking material from landfill to official hazardous material collections site approved by the Departmental Representative.
  - .9 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
- .1 Standard gypsum board: to ASTM C1396/C1396M Type X, 16 mm thick, 1200 mm wide x maximum practical length, ends square cut, edges bevelled.
  - .2 Sound attenuation batts: Mineral wool fibre batt insulation made from basalt rock and steel slag, conforming to CAN\ULC-S702, Type 1, minimum 50% recycled
  - .3 Plywood sheathing board: Douglas fir plywood (DFP): to CSA-O121, standard construction grade, 16 mm thick, 1200 mm wide x 2400 mm long.
  - .4 Security mesh: Expanded diamond-mesh metal lath to ASTM C847, fabricated from uncoated steel sheet, galvanized after fabrication; flat configuration, weight 1.8 kg/m2.
  - .5 Metal furring runners, hangers, tie wires, inserts, anchors: to ASTM C1047, formed steel sheet zinc coated by hot-dip or electrolytic process, shapes as required.

- .6 Resilient furring: 0.5 mm base steel thickness galvanized steel for resilient attachment of plywood sheathing and gypsum board.
- .7 Steel drill screws complying with ASTM C1002 for the following applications:
  - .1 Fastening plywood sheathing to steel members.
  - .2 Fastening gypsum board to plywood.
- .8 Staples for attachment of metal lath to plywood, hot dip galvanized, type and size as recommended by the installer.
- .9 Casing beads, corner beads, control joints and edge : to ASTM C1047, metal, zinc-coated by electrolytic process, 0.5 mm base thickness, perforated flanges, one piece length per location.
- .10 Sealants: in accordance with Section 07 92 10 - Joint Sealants.
- .11 Joint compound: to ASTM C 475, asbestos-free.
- .12 Wood trim: Cornice and baseboard mouldings, fabricated from pine to QSI 100, Grade I; profiles to match existing.

### **PART 3 - EXECUTION**

#### **3.1 Resilient Furring Installation**

- .1 Erect drywall furring transversely across studs where indicated, spaced maximum 400 mm on centre and not more than 150 mm from ceiling/wall and ceiling/floor junctures. Secure to each support with 25 mm drywall screw.

#### **3.2 Sound Attenuation Batt Installation**

- .1 Install batt insulation in strict accordance with the insulation manufacturer's written instructions, to maintain a continuous barrier to sound transmission.
- .2 Apply single layer of insulation to the thickness indicated.
- .3 Cut and trim insulation to a neat compression-fit in spaces. Do not compress insulation excessively to fit spaces. Butt joints tightly. Use largest possible dimensions to reduce number of joints.
- .4 Fit insulation closely around objects in or passing through insulation in accordance with the manufacturer's instructions.
- .5 Where necessary, retain insulation in position with mechanical fasteners recommended by the insulation manufacturer for the specific application.
- .6 Do not enclose insulation until it has been reviewed and accepted by the Departmental Representative.

#### **3.3 Plywood Sheathing Installation**

- .1 Install plywood sheathing both sides of wall as indicated.
- .2 Attach to studs on work side of partition and to resilient furring on occupied side with 32 mm drywall screws.

#### **3.4 Security Mesh Installation**

- .1 Install security mesh over the plywood sheathing on the work side of the partition.
- .2 Staple securely to the sheathing.

#### **3.5 Gypsum Board Installation**

- .1 Do application and finishing of gypsum board in accordance with ASTM C840 except where specified otherwise.

- .2 Do not apply gypsum board until sound attenuation installation has been reviewed and accepted by the Departmental Representative.
- .3 Apply single layer gypsum board to plywood sheathing using screw fasteners at maximum spacing of screws 300 mm on centre.
- .4 Apply gypsum board vertically or horizontally, providing sheet lengths that will minimize end joints.
- .5 Install gypsum board with face side out.
- .6 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 Apply 12 mm diameter bead of acoustic sealant continuously around periphery of each face of partitioning to seal gypsum board/structure junction where partitions abut permanent building components.

### 3.6 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 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.
- .4 Gypsum Board Finish: finish gypsum board walls and ceilings to following levels in accordance with Association of the Wall and Ceiling Industries (AWCI) International Recommended Specification on Levels of Gypsum Board Finish:
  - .1 Occupied side of partition - Level 4: Embed tape for joints and interior angles in joint compound and apply three separate coats of joint compound over joints, angles, fastener heads and accessories; surfaces smooth and free of tool marks and ridges.
  - .2 Work side of partition - Level 2: Embed tape for joints and interior angles in joint compound and apply one separate coat of joint compound over joints, angles, fastener heads and accessories; surfaces free of excess joint compound; tool marks and ridges are acceptable.
- .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 Remove ridges by light sanding or wiping with damp cloth.

### 3.7 Wood Trim Installation

- .1 Install trim after gypsum board joint finishing operations are completed.
- .2 Install cornice and base trim with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Do not use pieces less than 610 mm long, except where necessary.
- .3 Align trim with existing permanent. Cope at new trim at junction with existing to produce tight-fitting joints with full-surface contact

throughout length of joint. Use scarf joints for end-to-end joints if required.

END OF SECTION

**PART 1 - GENERAL**

1.1 Related Sections

- .1 Section 07 92 00 - Joint Sealants.
- .2 Section 09 21 16 - Gypsum Board Assemblies.

1.2 References

- .1 American Society for Testing and Materials International, (ASTM).
  - .1 ASTM C645-09a, Standard Specification for Nonstructural Steel Framing Members.

1.3 Quality Assurance

- .1 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.4 Waste Management and Disposal

- .1 Separate and recycle waste materials in accordance with Section 01 74 19 - 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, corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .4 Divert unused metal materials from landfill to metal recycling facility approved by Departmental Representative.
- .5 Divert unused gypsum materials from landfill to recycling facility approved by Departmental Representative.

**PART 2 - PRODUCTS**

2.1 Materials

- .1 Non-load bearing channel stud framing: to ASTM C645, stud size as indicated, roll formed from 0.53 mm thickness hot dipped galvanized steel sheet, for screw attachment of gypsum board.

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- .2 Floor and ceiling tracks: to ASTM C645, in widths to suit stud sizes, 32 mm flange height.
  - .3 Fireproof sealant: to Section 07 92 00 - Joint Sealants.

### **PART 3 - EXECUTION**

#### **3.1 Erection**

- .1 Align partition tracks at floor and ceiling and secure at 600 mm on centre maximum.
- .2 Erect metal studding to tolerance of 1:1000.
- .3 Attach studs to floor and ceiling track using screws or pop rivets.
- .4 Extend partitions to ceiling height as indicated except where noted otherwise on drawings.
- .5 Install two continuous beads of fireproof sealant under studs and tracks and around perimeter of partition.

#### **3.2 Cleaning**

- .1 Upon completion of installation, remove surplus materials, rubbish, and tools and leave in a clean condition equal to that which existed prior to the start of work.

END OF SECTION

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**PART 1        GENERAL**

1.1    References

- .1    Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1    Material Safety Data Sheets (MSDS).
- .2    Master Painters Institute (MPI)
  - .1    MPI Architectural Painting Specifications Manual, 2007.
  - .2    MPI - Maintenance Repainting Manual, 2004.

1.2    Submittals

- .1    Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2    Product Data:
  - .1    Submit product data and instructions for each paint and coating product to be used.
  - .2    Submit product data for the use and application of paint thinner.
  - .3    Submit two copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS) in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOCs during application and curing.
  - .4    Submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
  - .5    Submit manufacturer's application instructions.

1.3    Storage and Handling

- .1    Storage and Protection:
  - .1    Provide and maintain dry, temperature controlled, secure storage.
  - .2    Store materials and supplies away from heat generating devices.
  - .3    Store materials and equipment in well ventilated area within temperature as recommended by manufacturer.
- .2    Fire Safety Requirements:
  - .1    Provide one 9 kg dry chemical 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.

1.4    Waste Management and Disposal

- .1    Separate waste materials for reuse and recycling 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 Place materials defined as hazardous or toxic waste, including tubes and containers, in containers or areas designated for hazardous waste.
- .4 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.

#### 1.5 Site Conditions

- .1 Heating, Ventilation and Lighting:
  - .1 Ventilate enclosed spaces in accordance with Section 01 51 00 - Temporary Utilities.
  - .2 Co-ordinate use of existing ventilation system with Departmental Representative and ensure its operation during and after application of paint as required.
  - .3 Take all necessary precautions to avoid contaminating the air in the occupied portion of the building.
  - .4 Provide minimum lighting level of 323 Lux on surfaces to be painted.
- .2 Temperature, Humidity and Substrate Moisture Content Levels:
  - .1 Apply paint finishes when ambient air and substrate temperatures at location of installation can be satisfactorily maintained during application and drying process, within MPI and paint manufacturer's prescribed limits.
  - .2 Test concrete, masonry and plaster surfaces for alkalinity as required.
  - .3 Apply paint to adequately prepared surfaces, when moisture content is below paint manufacturer's prescribed limits.
- .3 Additional application requirements:
  - .1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.
  - .2 Apply paint in occupied facilities during silent hours only. Schedule operations to approval of Departmental Representative such that painted surfaces will have dried and cured sufficiently before occupants are affected.

#### PART 2 PRODUCTS

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2.1 Materials

- .1 Paint materials listed in the MPI Approved Products List (APL) are acceptable for use on this project.
- .2 Provide paint materials for paint systems from single manufacturer.
- .3 Only qualified products with E3 "Environmentally Friendly" rating are acceptable for use on this project.
- .4 Conform to latest MPI requirements for all painting work including preparation and priming.
- .5 Materials used in the building interior (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) in accordance with MPI - Architectural Painting Specification Manual and MPI - Maintenance Repainting Manual "Approved Product" listing.
- .6 For the building interior, provide paint products meeting MPI "Environmentally Friendly" E3 ratings based on VOC (EPA Method 24) content levels.

2.2 Colours

- .1 Colour schedule will be based upon selection of three base colours and three accent colours.

2.3 Mixing and Tinting

- .1 Perform colour tinting operations prior to delivery of paint to site, in accordance with manufacturer's written instructions. Obtain written approval from Departmental Representative for tinting of painting materials.
- .2 Use and add thinner in accordance with paint manufacturer's recommendations. Do not use kerosene or similar organic solvents to thin water-based paints.
- .3 Thin paint for spraying in accordance with paint manufacturer's instructions.
- .4 Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

2.4 Gloss/Sheen Ratings

- .1 Paint gloss is defined as sheen rating of applied paint, in accordance with following values:

Gloss Level	Description	Gloss @ 60°	Gloss @ 85°
1	Matte or flat finish	max. 5	max. 10
2	Velvet-like finish	max. 10	10 to 35
3	Eggshell finish	10 to 25	10 to 35
4	Satin-like finish	20 to 35	min. 35
5	Traditional semi-gloss finish	35 to 70	
6	Traditional gloss finish	70 to 85	
7	High-gloss finish	> 85	

.2 Gloss level ratings of painted surfaces as indicated.

## 2.5 Interior Painting/Repainting

- .1 Metals: columns, beams, joists and piping.
  - .1 INT 5.1E Alkyd finish, gloss level 4, Premium grade.
- .2 Dressed Lumber where paint finish is called for (window frames, casings, mouldings, hoarding etc.):
  - .1 INT 6.3A - Latex finish, gloss level 4, Premium grade.
- .3 Plaster and gypsum board:
  - .1 INT 9.2B - Latex finish, gloss level 3, Premium grade.
- .4 Steel window and louvre frames:
  - .1 EXT 5.1H - Polyurethane, gloss level 5, Premium grade.

## PART 3 EXECUTION

### 3.1 General

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and data sheet.
- .2 Perform preparation and operations for interior painting in accordance with MPI - Architectural Painting Specifications Manual and MPI - Maintenance Repainting Manual except where specified otherwise.

### 3.2 Examination

- .1 Investigate existing substrates for problems related to proper and complete preparation of surfaces to be painted. Report to Departmental Representative damages, defects, unsatisfactory or unfavourable conditions before proceeding with work.
- .2 Conduct moisture testing of surfaces to be painted using properly

calibrated electronic moisture meter, except test concrete floors for moisture using simple "cover patch test". Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.

### 3.3 Preparation

- .1 Protection:
  - .1 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage by suitable non-staining covers or masking. If damaged, clean and restore surfaces as directed by Departmental Representative.
  - .2 Protect items that are permanently attached such as Fire Labels on doors and frames.
  - .3 Protect factory finished products and equipment.
- .2 Surface Preparation:
  - .1 Remove electrical cover plates, light fixtures, surface hardware on doors, bath accessories and other surface mounted equipment, fittings and fastenings prior to undertaking painting operations. Identify and store items in secure location and re-installed after painting is completed.
  - .2 Move and cover furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.
  - .3 Place "WET PAINT" signs in occupied areas as painting operations progress. Signs to approval of Departmental Representative.
- .3 Clean and prepare surfaces in accordance with MPI - Architectural Painting Specification Manual and MPI - Maintenance Repainting Manual specific requirements and coating manufacturer's recommendations.
- .4 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before prime coat is applied and between applications of remaining coats. Apply primer, paint, or pretreatment as soon as possible after cleaning and before deterioration occurs.
- .5 Where possible, prime non-exposed surfaces of new wood surfaces before installation. Use same primers as specified for exposed surfaces.
  - .1 Apply vinyl sealer to MPI #36 over knots, pitch, sap and resinous areas.
  - .2 Apply wood filler to nail holes and cracks.
  - .3 Tint filler to match stains for stained woodwork.
- .6 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000 mm.
- .7 Clean metal surfaces to be painted by removing rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances in accordance with MPI requirements.
- .8 Touch up of shop primers with primer as specified.
- .9 Do not apply paint until prepared surfaces have been accepted by Departmental Representative.

3.4 Application

- .1 Method of application to be as approved by Departmental Representative. Conform to manufacturer's application instructions unless specified otherwise.
- .2 Apply coats of paint continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
- .3 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.
- .4 Sand and dust between coats to remove visible defects.
- .5 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as tops of interior cupboards and cabinets and projecting ledges.
- .6 Finish inside of cupboards and cabinets as specified for outside surfaces.
- .7 Finish closets and alcoves as specified for adjoining rooms.
- .8 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.

3.5 Mechanical/Electrical Equipment

- .1 Paint conduits, piping, hangers, ductwork and other mechanical and electrical equipment exposed in finished areas, to match adjacent surfaces, except as indicated.
- .2 Do not paint over nameplates.
- .3 Keep sprinkler heads free of paint
- .4 Paint fire protection piping red.
- .5 Paint disconnect switches for fire alarm system and exit light systems in red enamel.
- .6 Paint natural gas piping yellow

END OF SECTION