

Specifications:

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END OF SECTION

PART 1- GENERAL

1.1 RELATED REQUIREMENTS

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| .1 | Plastic Laminate Finish | Section 06 47 00 |
| .2 | Painting | Section 09 91 13 |

1.2 REFERENCES

- .1 American National Standards Institute (ANSI)
 - .1 ANSI A208.1-09, Particleboard.
 - .2 ANSI A208.2-09, Medium Density Fibreboard (MDF) for Interior Applications.
 - .3 ANSI/HPVA HP-1-10, American National Standard for Hardwood and Decorative Plywood.
- .2 Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI)
 - .1 Architectural Woodwork Quality Standards, 1st edition, 2009.
- .3 ASTM International
 - .1 ASTM A 123/A 123M-09, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .4 Canada Green Building Council (CaGBC)
 - .1 LEED Canada-NC Version 1.0-2004, LEED (Leadership in Energy and Environmental Design): Green Building Rating System for New Construction and Major Renovations (including Addendum 2007).
 - .2 LEED Canada-NC-2009, LEED (Leadership in Energy and Environmental Design): Green Building Rating System for New Construction and Major Renovations 2009.
 - .3 LEED Canada-CI Version 1.0-2007, LEED (Leadership in Energy and Environmental Design): Green Building Rating System for Commercial Interiors.
 - .4 LEED Canada-EB: O&M-2009, LEED (Leadership in Energy and Environmental Design): Green Building Rating System for Existing Buildings: Operations and Maintenance 2009.
- .5 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-11.3-M87, Hardboard.
 - .2 CAN/CSA-080 Series M "Wood Preservation"
- .6 CSA International
 - .1 CSA B111-74(R2003), Wire Nails, Spikes and Staples.
 - .2 CSA O121-08, Douglas Fir Plywood.
 - .3 CSA O141-05(R2009), Softwood Lumber.
 - .4 CSA O151-09, Canadian Softwood Plywood.
 - .5 CSA O153-M1980(R2008), Poplar Plywood.
 - .6 CAN/CSA-Z809-08, Sustainable Forest Management.
- .7 Forest Stewardship Council (FSC)
 - .1 FSC-STD-01-001-2004, FSC Principle and Criteria for Forest Stewardship.
- .8 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber 2010.

- .9 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
 - .1 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.
- .10 Sustainable Forestry Initiative (SFI)
 - .1 SFI-2010-2014 Standard.
- .11 Underwriters Laboratories of Canada (ULC)
 - .1 CAN/ULC-S104-10, Standard Method for Fire Tests of Door Assemblies.
 - .2 CAN/ULC-S105-09, Standard Specification for Fire Door Frames.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for plywood, particleboard, OSB AND MDF and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit two copies of WHMIS MSDS.
- .3 Shop Drawings:
 - .1 Submit drawings.
 - .2 Indicate details of construction, profiles, jointing, fastening and other related details.
 - .3 Indicate materials, thicknesses, finishes and hardware.
- .4 Certifications: submit certificates signed by manufacturer certifying materials comply with specified performance characteristics and physical properties.
- .5 Test and Evaluation Reports: submit certified test reports for composite wood from approved independent testing laboratories, indicating compliance with specifications for specified performance characteristics and physical properties.

1.4 QUALITY ASSURANCE

- .1 Lumber by grade stamp of agency certified by Canadian Lumber Standards Accreditation Board (CLSAB).
- .2 Plywood, particleboard, OSB and wood based composite panels to CSA and ANSI standards.
- .3 Wood fire rated frames and panels: listed and labelled by an organization accredited by Standards Council of Canada to CAN/ULC-S104 and CAN/ULC-S105.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground, indoors and in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect wood products from nicks, scratches, and blemishes.

- .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse by manufacturer of pallets, crates, padding, and packaging materials.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Softwood lumber: S4S, moisture content 19% or less in accordance with following standards:
 - .1 CSA O141.
 - .2 CAN/CSA-Z809 or FSC or SFI certified.
 - .3 NLGA Standard Grading Rules for Canadian Lumber.
 - .4 AWMAC custom grade, moisture content as specified.
 - .5 Machine stress-rated lumber is acceptable.
- .2 Hardwood lumber: moisture content 7 % or less in accordance:
 - .1 National Hardwood Lumber Association (NHLA).
 - .2 AWMAC premium grade, moisture content as specified.
 - .3 CAN/CSA-Z809 or FSC or SFI certified.
- .3 Panel Material: urea-formaldehyde free
 - .1 CAN/CSA-Z809 or FSC or SFI certified.
 - .2 Douglas fir plywood (DFP): to CSA O121, standard construction.
 - .3 Canadian softwood plywood (CSP): to CSA O151, standard construction.
 - .4 Hardwood plywood: to ANSI/HPVA HP-1.
 - .5 Poplar plywood (PP): to CSA O153, standard construction.
 - .6 Particleboard: to ANSI A208.1.
 - .7 Hardboard: to CAN/CGSB-11.3.
 - .8 Medium density fibreboard (MDF): to ANSI A208.2, density 640-800 kg/m³.
 - .9 Low density fibreboard: to CSA-A247M.
- .4 Decking to be: 38 x 89 Maple Decking. Coated with fire-retardant chemicals in conformance with CAN/CSA-080 Series-M, "Wood Preservation". Flame-spread rating not more than 25.

2.2 ACCESSORIES

- .1 Nails and staples: to CSA B111; galvanized to ASTM A 123/A 123M for exterior work, interior humid areas and for treated lumber; stainless steel finish elsewhere.
- .2 Wood screws: plain and stainless steel, type and size to suit application.
- .3 Splines: wood.
- .4 Adhesive and Sealants: in accordance with Section 07 92 00 - Joint Sealants.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for wood products installation in accordance with manufacturer's written instructions.
- .1 Visually inspect substrate in presence of Consultant.
- .2 Inform Consultant of unacceptable conditions immediately upon discovery.
- .3 Proceed with installation only after unacceptable conditions have been remedied [and after receipt of written approval to proceed from Consultant.

3.2 INSTALLATION

- .1 Do finish carpentry to Quality Standards of (AWMAC).
- .2 Scribe and cut as required, fit to abutting walls, and surfaces, fit properly into recesses and to accommodate piping, columns, fixtures, outlets, or other projecting, intersecting or penetrating objects.
- .3 Form joints to conceal shrinkage.

3.3 CONSTRUCTION

- .1 Fastening:
 - .1 Position items of finished carpentry work accurately, level, plumb, true and fasten or anchor securely.
 - .2 Design and select fasteners to suit size and nature of components being joined. Use proprietary devices as recommended by manufacturer.
 - .3 Set finishing nails to receive filler. Where screws are used to secure members, countersink screw in round smooth cut hole and plug with wood plug to match material being secured.
 - .4 Replace items of finish carpentry with damage to wood surfaces including hammer and other bruises.

3.4 INSTALLATION OF SOFFIT DECKING

- .1 Decking lengths: 1.2 to 3 m or longer with a minimum of 90% planks exceeding 1.2 m. Square end trimmed. For single spans shorter than 3 m use decking of same length as span.
- .2 Install decking to CSA O86, controlled random pattern.
- .3 Stagger end joints in adjacent planks minimum of 0.5 m.
 - .1 Separate joints in same area by at least 2 intervening courses.
 - .2 Avoid joints in first fifth of end spans.
- .4 Decking shall be screwed from above with 2 – 6mm diam. X 70 Ceramic coated deck screws.

3.5 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in

accordance with Section 01 74 11 - Cleaning.

- .3 Waste Management: separate waste materials for reuse and recycling.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.6 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by finish carpentry installation.

END OF SECTION

PART 1- GENERAL

1.1 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit duplicate samples of joints, edging and cutouts in accordance with Section 01 33 00 - Submittal Procedures.

1.2 MAINTENANCE DATA

- .1 Provide maintenance data for plastic laminate work for incorporation into Operation and Maintenance Manual specified in Section 01730.

1.3 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground, indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Cover finished laminated plastic surfaces with heavy kraft paper or put in cartons during shipment. Protect installed laminated surfaces by approved means. Do not remove until immediately before final inspection.
 - .3 Do not store or install materials in areas where relative humidity is less than 25% or greater than 60% at 22 degrees C.
 - .4 Shop assemble work for delivery to site in size easily handled and to assure passage through building openings.
 - .5 Store and protect laminate, adhesive, and core materials from nicks, scratches, and blemishes.
 - .6 Replace defective or damaged materials with new.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Laminated plastic for flatwork: to CAN3-A172-M79, Grade GP-R, 1.27 mm thick; based on solid or printed pattern colour range by Formica and Arborite with suede finish. Allow for one (1) colour.
- .2 Laminated plastic for postforming work: to CAN3-A172, Grade PF, 1.27 mm thick, based on printed pattern, full colour range by Formica with matte finish. Allow for four (4) colours.
- .3 Plywood core: to CSA 0151 solid two sides, 19 mm thick.
- .4 Laminated plastic liner sheet: supplied by same manufacturer as facing sheet, not less than 0.76 mm thick, white colour.
- .5 Laminated plastic adhesive: urea resin adhesive to CSA 0112.5-M1977
- .6 Sealer: water resistant sealer or glue acceptable to laminate manufacturer.
- .7 Sealant: in accordance with Section 07 92 00, colour shall be selected later by Architect.

2.2 FABRICATION

- .1 Comply with NEMA LD3, Annex A.
- .2 Obtain governing dimensions before fabricating items which are to accommodate or abut appliances, equipment and other materials.
- .3 Ensure adjacent parts of continuous laminate work match in colour and pattern.
- .4 Veneer laminated plastic to core material in accordance with adhesive manufacturer's instructions. Ensure core and laminate profiles coincide to provide continuous support and bond over entire surface. Use continuous lengths up to 3000 mm. Keep joints 600 mm from sink cutouts.
- .5 Form shaped profiles and bends as indicated, using postforming grade laminate to laminate manufacturer's instructions.
- .6 Use straight self-edging laminate strip for flatwork to cover exposed edge of core material. Chamfer exposed edges uniformly at approximately 20 degrees. Do not mitre laminate edges.
- .7 Apply laminate backing sheet to reverse side of core of plastic laminate work.
- .8 Apply laminated plastic liner sheet where indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for laminate, adhesive, and core materials installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate.
 - .2 Inform Consultant of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied.

3.2 INSTALLATION

- .1 Install work plumb, true and square, neatly scribed to adjoining surfaces.
- .2 Make allowances around perimeter where fixed objects pass through or project into laminated plastic work to permit normal movement without restriction.
- .3 Use draw bolts and splines in countertop joints. Maximum spacing 450 mm on centre, 75 mm from edge. Make flush hairline joints.
- .4 Provide cutouts for inserts, grilles, appliances, outlet boxes and other penetrations. Round internal corners, chamfer edges and seal exposed core.
- .5 At junction of laminated plastic counter back splash and adjacent wall finish, apply small bead of sealant.

END OF SECTION

PART 1 - GENERAL

1.1 REFERENCES

- .1 American Society for Testing and Materials International (ASTM)
 - .1 ASTM C 553-02, Specification for Mineral Fibre Blanket Thermal Insulation for Commercial and Industrial Applications.
 - .2 ASTM C 665-01e1, Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
 - .3 ASTM C 1320-05, Standard Practice for Installation of Mineral Fiber Batt and Blanket Thermal Insulation for Light Frame Construction.
- .2 Canadian Standards Association (CSA International): CSA B111-1974(R2003), Wire Nails, Spikes and Staples.
- .3 Underwriters Laboratories of Canada (ULC): CAN/ULC-S702-1997, Standard for Mineral Fibre Insulation.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.

PART 2- PRODUCTS

2.1 INSULATION

- .1 Install Insulation as follows (unless otherwise noted on the drawings):
 - .1 Exterior Cavity Wall Assemblies: 100mm Roxul Cavity Rock DD.
 - .2 Insulation for Curtain Wall System and Metal Panels: 100mm Roxul Curtain Rock
 - .3 All Interior Wall Partitions: 100mm Roxul AFB (Acoustical Fire Batts)

2.2 ACCESSORIES

- .1 Insulation clips: Impale type, perforated 50 x 50 mm cold rolled carbon steel 0.8 mm thick, adhesive back, spindle of 2.5 mm diameter annealed steel, length to suit insulation, 25 mm diameter washers of self locking type.
- .2 Nails: galvanized steel, length to suit insulation plus 25 mm, to CSA B111.
- .3 Staples: 12 mm minimum leg.
- .4 Tape: as recommended by manufacturer.

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 INSULATION INSTALLATION

- .1 Install insulation to maintain continuity of thermal protection to building elements and spaces and to ASTM C 1320.
- .2 Lap ends and side flanges of membrane over framing members. Retain in position with insulation clips installed as recommended by manufacturer. Tape seal butt ends and lapped side flanges. Do not tear or cut vapour barrier.
- .3 Fit insulation closely around electrical boxes, pipes, ducts, frames and other objects in or passing through insulation.
- .4 Do not compress insulation to fit into spaces.
- .5 Keep insulation minimum 75 mm from heat emitting devices such as recessed light fixtures, and minimum 50 mm from sidewalls of CAN/ULC-S604 Type A chimneys and CAN/CGA-B149.1 and CAN/CGA-B149.2 Type B and L vents.
- .6 Do not enclose insulation until it has been inspected and approved Consultant.

END OF SECTION

PART 1- GENERAL

1.1 REFERENCES

- .1 ASTM International: ASTM C 919-08, Standard Practice for Use of Sealants in Acoustical Applications.
- .2 Canadian General Standards Board (CGSB)
 - .1 CGSB 19-GP-5M-1984, Sealing Compound, One Component, Acrylic Base, Solvent Curing (Issue of 1976 reaffirmed, incorporating Amendment No. 1).
 - .2 CAN/CGSB-19.13-M87, Sealing Compound, One-component, Elastomeric, Chemical Curing.
 - .3 CGSB 19-GP-14M-1984, Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing (Reaffirmation of April 1976).
 - .4 CAN/CGSB-19.17-M90, One-Component Acrylic Emulsion Base Sealing Compound.
 - .5 CAN/CGSB-19.24-M90, Multi-component, Chemical Curing Sealing Compound.
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS): Material Safety Data Sheets (MSDS).
- .4 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards: SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of material safety data sheets acceptable to Labour Canada.
- .2 Manufacturer's Instructions: Submit instructions to include installation instructions for each product used. Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.

1.3 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for incorporation into manual.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground, indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect joint sealants from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

1.5 SITE CONDITIONS

- .1 Ambient Conditions:
- .1 Proceed with installation of joint sealants only when:
 - .1 Ambient and substrate temperature conditions are within limits permitted by joint sealant manufacturer or are above 4.4 degrees C.
 - .2 Joint substrates are dry.
 - .3 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.
- .2 Joint-Width Conditions: Proceed with installation of joint sealants only where joint widths are more than those allowed by joint sealant manufacturer for applications indicated.
- .3 Joint-Substrate Conditions: Proceed with installation of joint sealants only after contaminants capable of interfering with adhesion are removed from joint substrates.

1.6 WARRANTY

- .1 Repair or replace any caulking that runs, cracks or otherwise shows sign of failure within five (5) years from the date of the Certificate of Substantial Performance.

PART 2 - PRODUCTS

2.1 SEALANT MATERIALS

- .1 General:
 - .1 Do not use caulking that emits strong odours, contains toxic chemicals or is not certified as mould resistant in air handling units.
 - .2 When low toxicity caulks are not possible, confine usage to areas which off gas to exterior, are contained behind air barriers, or are applied several months before occupancy to maximize off gas time.
 - .3 Where sealants are qualified with primers use only these primers.
- .2 Primers: type recommended by sealant manufacturer.
- .3 Joint Fillers:
 - .1 General: compatible with primers and sealants, oversized 30 to 50%.
 - .2 Joint backing rod: round, non-gassing, polyurethane foam, closed-cell polyethylene, non-bleeding neoprene or butyl rod. Installed under the manufacturer's recommended compression. Note: joint backing and adjoining substrates must be thoroughly dry.
 - .3 Polyurethane and/or polyethylene: to shore A hardness 20, tensile strength 140 kPa to 200 kPa.
 - .4 Neoprene or butyl rubber: to shore A hardness 70.
 - .5 Caution: do not install more joint backing than can be sealed the same day.
- .4 Bond Breakers:
 - .1 Adhesive backed, pressure sensitive, polyethylene or PVC bond breaker tape to prevent three-sided adhesion and which will not bond to sealants.
 - .2 Acceptable Products: 470 tape or 481 tape by 3M.
- .5 Sealants:
 - .1 For Exterior Application:

- .1 Use three component, chemically curing, epoxidized polyurethane terpolymer sealant to CAN/CGSB 19.24-M90, Type II.
- .2 Acceptable Material: Dymeric epoxidized polyurethane sealant as manufactured by Tremco Incorporated.
- .2 For Interior Application:
 - .1 One part acrylic to CGSB 19-GP-5M Tremco Acrylic 555.
- .6 Colour of Sealants:
 - .1 To be selected from Tremco Standard "Colour-Paks".
 - .2 Aluminum windows/doors (exterior) - to be selected later by the Architect. Allow for four (4) different colours.
 - .3 Aluminum windows/doors (interior) - to match interior paint colour.
 - .4 Steel doors (interior and exterior) - to match colour of door frame.
 - .5 Brick control joints - to match colour of adjacent brick.
- .7 Compressible Seal: permanently elastic, precompressed, latex modified asphalt-impregnated, high density open celled polyurethane foam strip. Size as recommended by manufacturer for joint to be sealed. Degree of compression: 25%
 - .1 Acceptable material: Emseal expanding foam sealant as manufactured by Emseal Corporation.
- .8 Joint Cleaner: xylol, methylethyleketon or non-corrosive type recommended by sealant manufacturer and compatible with joint forming materials.

PART 3- EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for joint sealants installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate
 - .2 Inform Consultant of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied.

3.2 SURFACE PREPARATION

- .1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants (depth ratio 1/2 of joint width with minimum width and depth of 6 mm, maximum width 25 mm).
- .2 Clean bonding joint surfaces of harmful matter substances including dust, rust, oil grease, and other matter which may impair Work.
- .3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.
- .4 Remove dust, paint, loose mortar and other foreign matter. Dry joint surfaces.
- .5 Remove rust, mill scale and coatings from ferrous metals by wire brush, grinding or sandblasting.
- .6 Remove oil, grease and other coatings from non-ferrous metals with joint cleaner.

- .7 Prepare concrete, masonry, glazed and vitreous surfaces to sealant manufacturer's instructions.
- .8 Install joint filler to achieve correct joint depth, with approximately 30% compression.
- .9 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.
- .10 Apply bond breaker tape where required to manufacturer's instructions.
- .11 Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.
- .12 Ensure joint surfaces are dry and frost free.
- .13 Prepare surfaces in accordance with manufacturer's directions.

3.3 MIXING

- .1 Mix materials in strict accordance with sealant manufacturer's instructions.

3.4 APPLICATION

- .1 Sealant:
 - .1 Apply sealant in accordance with manufacturer's written instructions.
 - .2 Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint.
 - .3 Apply sealant in continuous beads.
 - .4 Apply sealant using gun with proper size nozzle. Apply sealants, primers, joint fillers, compressible seal, and bond breakers as indicated to manufacturer's instructions. Apply sealant using gun with proper size nozzle. Use sufficient pressure to fill voids and joints solid. Superficial pointing with skin bead is not acceptable.
 - .5 Use sufficient pressure to fill voids and joints solid.
 - .6 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.
 - .7 Tool exposed surfaces before skinning begins to give slightly concave shape.
 - .8 Remove excess compound promptly as work progresses and upon completion.
- .2 Curing:
 - .1 Cure sealants in accordance with sealant manufacturer's instructions.
 - .2 Do not cover up sealants until proper curing has taken place.

3.5 EXTENT OF CAULKING

- .1 Provide caulking in all locations as shown on drawings and where noted below.
- .2 Provide caulking at the perimeter of all door and window frames, glazed metal screens, and at window flashings where they abut adjacent materials.
- .3 Provide caulking where countertops and countertop splashbacks butt against vertical surfaces.
- .4 Seal interior perimeters of exterior openings.
- .5 Perimeters of interior frames.
- .6 Exposed interior control joints in drywall.

3.6 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning. Leave Work area clean at end of each day.
 - .1 Clean adjacent surfaces immediately.
 - .2 Remove excess and droppings, using recommended cleaners as work progresses.
 - .3 Remove masking tape after initial set of sealant.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

3.7 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by joint sealants installation.

END OF SECTION

PART 1- GENERAL

1.1 GENERAL

- .1 Glazed Aluminum Curtain Wall and Window System (including glazing) is to meet or exceed requirements of SB-10 of the Ontario Building Code.
- .2 Contractor to submit in writing, certification and test results that the proposed systems (including glazing), meets or exceeds requirements of SB-10 of the Ontario Building Code.

1.2 REFERENCES

- .1 ASHRAE/IES 90.1-1989
- .2 ANSI/ASHRAE/USGBC/IES 189.1-2009
- .3 Aluminum Association (AA): AA DAF 45-03(R2009), Designation System for Aluminum Finishes.
- .4 American Architectural Manufacturers Association (AAMA)
 - .1 AAMA CW-10-04, Care and Handling of Architectural Aluminum From Shop to Site.
 - .2 AAMA CW-11-85, Design Wind Loads and Boundary Layer Wind Tunnel Testing.
 - .3 AAMA T1R-A1-04, Sound Control for Fenestration Products.
 - .4 AAMA 501-05, Methods of Test for Exterior Walls.
 - .5 AAMA 611-98, Voluntary Specifications for Anodized Finishes Architectural Aluminum.
 - .6 AAMA 612-02, Voluntary Specifications, Performance Requirements, and Test Procedures for Combined Coatings of Anode Oxide and Transparent Organic Coatings on Architectural Aluminum.
 - .7 AAMA 2603-02, Voluntary Specification Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
 - .8 AAMA 2604-05, Voluntary Specification Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
- .5 ASTM International
 - .1 ASTM A 36/A 36M-08, Specification for Carbon Structural Steel.
 - .2 ASTM A 123/A 123M-09, Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - .3 ASTM A 167-99(2009), Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
 - .4 ASTM A 653/A 653M-09a, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - .5 ASTM B 209-07, Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
 - .6 ASTM B 221-08, Specification for Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
 - .7 ASTM E 283-04, Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
 - .8 ASTM E 330-02, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls, by Uniform Static Air Pressure Difference.
 - .9 ASTM E 331-00(2009), Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform Static Air Pressure Difference.
 - .10 ASTM E 413-04, Classification for Rating Sound Insulation.
 - .11 ASTM E 1105-00(2008), Standard Test Method for Field Determination of Water

Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference.

- .6 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB 1.108-M89, Bituminous Solvent Type Paint.
 - .2 CAN/CGSB-12.20-M89, Structural Design of Glass for Buildings.
- .7 CSA International
 - .1 CSA G40.20/G40.21-04(R2009), General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
 - .2 CSA S136-07, North American Specification for the Design of Cold Formed Steel Structural Members.
 - .3 CAN/CSA-S157/S157.1-05, Strength Design in Aluminum/Commentary on CAN/CSA-S157, Strength Design in Aluminum.
 - .4 CSA W59.2-M1991(R2008), Welded Aluminum Construction.
- .8 Society for Protective Coatings (SSPC)
 - .1 SSPC - Paint 20-02(R2004), Zinc Rich Coating, Type I - Inorganic and Type II - Organic.
 - .2 SSPC - Paint 25 - 97(R2004) BCS, Zinc Oxide, Alkyd, Linseed Oil and Primer for Use Over Hand Cleaned Steel Type 1 and Type 2.
- .9 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
 - .1 SCAQMD Rule 1113-A2007, Architectural Coatings.
 - .2 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.

1.3 ADMINISTRATIVE REQUIREMENTS

- .1 Co-ordination: co-ordinate work of this Section with installation of fire stopping, air barrier placement, vapour retarder placement, flashing placement, installing ductwork to rear of louvres, rough carpentry and components or materials.

1.4 EXAMINATION

- .1 Examine the structure to which work is to be fixed and report any deficiency which is detrimental to the proper installation of the work.
- .2 Verify all dimensions on site, and site dimension to ensure that adjustments in fabrication and installation are provided for and clearances to other construction have been maintained.
- .3 Report any defects discovered to the Architect and do not commence work before these have been remedied. Commencement of work shall be construed as acceptance of underlying conditions.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Handle work of this Section in accordance with AAMA CW-10.

- .2 Store materials off ground, indoors, in dry location, and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
- .3 Store and protect aluminum glazed curtain wall components from nicks, scratches, and blemishes.
- .4 Protect prefinished aluminum surfaces with [wrapping] [strippable coating]. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather.
- .5 Replace defective or damaged materials with new.

1.6 AMBIENT CONDITIONS

- .1 Install sealants when ambient and surface temperature is above 5 degrees C minimum.
- .2 Maintain this minimum temperature during and for 48 hours minimum after installation of sealants.

1.7 WARRANTY

- .1 From the date of Certificate of Substantial Performance, the work shall be warranted for a period of **three (3) years** against defects due to faulty materials and/or workmanship.
- .2 Repair and/or replace when so directed by the Architect, within the said periods, any and all portions of work which fail to perform according to the requirements of these Specifications.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Sheet steel: to CSA S136 ASTM A 653/A 653M; galvanized.
- .2 Steel sections: to CSA G40.20/G40.21 ASTM A 36/A 36M ASTM A 167 Type 304 stainless; shaped to suit mullion sections.
- .3 Anchors: 3-way adjustable hot-dip galvanized cast iron.
- .4 Fasteners: stainless steel, finish to match curtain wall.
- .5 Bituminous paint: CAN/CGSB 1.108, without thinner.
- .6 Fire Safety Materials: see Section 07 84 00 - Fire Stopping.

2.2 FABRICATION

- .1 Infill Panels:
 - .1 Fabricate infill panels with metal covered edge seals around perimeter of panel assembly, enabling installation and minor movement of perimeter seal.
 - .2 Accurately fit and secure joints and corners. Make joints flush, hairline, and weatherproof.
 - .3 Arrange fasteners and attachments to ensure concealment from view.

2.3 ISOLATING COATING

- .1 Isolate aluminum from following components, by means of isolation coating:
 - .1 Dissimilar metals except stainless steel, zinc, or white bronze of small area.
 - .2 Concrete, mortar and masonry.

2.4 SOURCE QUALITY CONTROL

- .1 Perform work in accordance with AAMA GSM-1 and AAMA CW-I-9. Maintain 1 copy on site.
- .2 Manufacturer qualifications: company specializing in manufacturing the products specified in this section with minimum 3 years documented experience.
- .3 of a Professional Structural Engineer experienced in design of this Work and licensed at the place where the Project is located.
- .4 Perform welding Work in accordance with CSA W59.2.

2.5 FABRICATION

- .1 Fabricate in accordance with CAN/CSA-A440-00 supplemented as follows:
 - .1 Fabricate units square and true with maximum tolerance of plus or minus 1.5 mm for units with a diagonal measurement of 1800 mm or less and plus or minus 3 mm for units with a diagonal measurement over 1800 mm.
 - .2 Face dimensions detailed are maximum permissible sizes.
 - .3 Brace frames to maintain squareness and rigidity during shipment and installation.
 - .4 Finish steel clips and reinforcement for fire rated windows with 380 g/m² zinc coating to CSA G164.
- .2 Provide 2 mm thick, aluminum drip flashing at the head of ALL windows.

2.6 INSULATED SANDWICH PANELS

- .1 Back-up spandrel panel: use minimum 0.9 mm thick (20 gauge) galvanized sheet steel at interior face of panel.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for aluminum curtain wall installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate.
 - .2 Verify dimensions, tolerances, and method of attachment with other work.
 - .3 Verify wall openings and adjoining air barrier and vapour retarder materials are ready to receive work of this Section.
 - .4 Inform Consultant of unacceptable conditions immediately upon discovery.
 - .5 Proceed with installation only after unacceptable conditions have been remedied.

3.2 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
- .2 Leave Work area clean at end of each day.
- .3 Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean.

- .4 Remove excess sealant by moderate use of mineral spirits or other solvent acceptable to sealant manufacturer.
- .5 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

3.3 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by glazed aluminum curtain wall installation.

END OF SECTION

PART 1- GENERAL

1.1 RELATED REQUIREMENTS

- .1 Do work in accordance with CSA A82.31-M1980 and the C.G.C. Gypsum Construction Handbook Latest Edition, except where specified otherwise.

1.2 REFERENCES

- .1 ASTM International
 - .1 ASTM C 475-02(2007), Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
 - .2 ASTM C 514-04(2009e1), Standard Specification for Nails for the Application of Gypsum Board.
 - .3 ASTM C 557-03(2009)e1, Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.
 - .4 ASTM C 840-08, Standard Specification for Application and Finishing of Gypsum Board.
 - .5 ASTM C 954-07, 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 C 1002-07, 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 C 1047-09, Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
 - .8 ASTM C 1280-99, Standard Specification for Application of Gypsum Sheathing.
 - .9 ASTM C 1177/C 1177M-08, Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
 - .10 ASTM C 1178/C 1178M-08, Standard Specification for Glass Mat Water-Resistant Gypsum Backing Board.
 - .11 ASTM C 1396/C 1396M-09a, Standard Specification for Gypsum Wallboard.
- .2 Association of the Wall and Ceilings Industries International (AWCI): AWCI Levels of Gypsum Board Finish-97.
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-51.34-M86(R1988), Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
 - .2 CAN/CGSB-71.25-M88, Adhesive, for Bonding Drywall to Wood Framing and Metal Studs.
- .4 Underwriters' Laboratories of Canada (ULC): CAN/ULC-S102-07, Standard Method of Test of Surface Burning Characteristics of Building Materials and Assemblies.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.

- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store gypsum board assemblies materials level, off ground, indoors, in dry location, and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect gypsum board assemblies from nicks, scratches, and blemishes.
 - .3 Protect from weather, elements and damage from construction operations.
 - .4 Handle gypsum boards to prevent damage to edges, ends or surfaces.
 - .5 Protect prefinished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather.
 - .6 Replace defective or damaged materials with new.

1.5 AMBIENT CONDITIONS

- .1 Maintain temperature 10 degrees C minimum, 21 degrees C maximum for 48 hours prior to and during application of gypsum boards and joint treatment, and for 48 hours minimum 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.

1.6 FIRE RATED CONSTRUCTION

- .1 Provide wall and ceiling assemblies for fire rated partitions, and floor or roof assemblies to ULC test designs and National Building Code Fire performance Requirements indicated on drawings.

PART 2 - PRODUCTS

2.1 GENERAL ACCEPTANCE

- .1 For materials manufactured by CGC and listed in this specification section, equivalents can be proposed as manufactured by CertainTeed and Georgia-Pacific.

2.2 GYPSUM BOARD PANELS

- .1 Interior: abuse resistant gypsum core panel to CSA A82.27-M91, Type X, 16 mm thick as indicated on drawings, 1200 mm wide by maximum practical lengths, ends square cut, edges tapered with round edges.

2.3 METAL FURRING AND SUSPENSION SYSTEMS

- .1 Metal Furring Runners 0.87 mm (20 gauge), Hangers, Tie Wires, Inserts, Anchors: to CSA A82.30-M1980, hot dipped, galvanized.
- .2 Resilient Channels and Furring Channels: 0.87 mm (20 gauge) core thickness galvanized steel channels for screw attachment of all kinds of gypsum boards specified herein.

2.4 FASTENINGS AND ADHESIVES

- .1 Nails and Screws: to CSA A82.31-M1980, Type S, bugle head, fine thread, rust-resistant, sharp point drywall screw for light gauge metal framing or furring. Type S-12, bugle head, fine thread, rust-resistant, drill point drywall screw for heavy gauge (12-22 gauge) steel framing. Screws for exterior application shall be zinc coated or stainless steel.
- .2 Stud adhesive: to CAN/CGSB-71.25-M88.
- .3 Laminating compound as recommended by manufacturer.
- .4 Contact cement: premium grade.

2.5 JOINT TREATMENT MATERIAL

- .1 For Interior Use:
 - .1 Joint tape: 50 mm wide, high strength cross fibre paper tape for reinforcing joints, as manufactured by C.G.C. Inc.
 - .2 Joint compound: ready-mixed all-purpose drywall compound as manufactured by C.G.C. Inc.

2.6 ACCESSORIES

- .1 Casing Beads, Corner Beads, Control Joints: 26 gauge galvanized steel, as manufactured by The Canadian Gypsum Company:
 - .1 Casing Beads: C.G.C.-200B, the use of "J" trims is not permitted
 - .2 Corner Beads: No. 114, C.G.C Dur-A-BEAD.
 - .3 Control Joints: C.G.C. Control Joint # 093.
 - .4 Column Rings: At all round concrete columns (refer to drawings for quantities) intersecting with gypsum board bulkheads, provide shadow mould column rings. Rings equal to model CRR 144 as manufactured by C.G.C. Inc. All exposed surfaces of rings to be prefinished to match acoustical ceiling suspension system components.
 - .5 Edge mouldings and trims: Metal or extruded aluminum of types and profiles indicated. Provide flexible and fixed reveal shadow mouldings at all locations indicated. Reveal trim equal to model D-300 as manufactured by Bailey Metal Products Ltd.
- .2 Acoustic Sealant: to CAN/CGSB-19.21-M87. Sealants acceptable for use on this project must be listed on CGSB Qualified Product List issued by CGSB Qualification Panel for Joint Sealants.
- .3 Polyethylene: to CAN/CGSB-51GP-51M, Type 2.
- .4 Insulating Strip: rubberized, moisture resistant, 3 mm thick closed cell neoprene strip, 12 mm wide, with self sticking permanent adhesive on one (1) face; lengths as required.
- .5 Sound Attenuation Batts: 76 mm, friction fit, semi-rigid, mineral wool insulation with fire hazard classification of: flame spread 15, fuel contributed 0, and smoke developed 0. Acceptable material: Acoustical Fire Batt as manufactured by Roxul.
- .6 Fire Stopping Material: "Fire-Stop" as manufactured by AA/D Distributors.
- .7 Adhesive for Trim Accessories: "premium grade" contact cement.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for gypsum board assemblies installation in accordance with manufacturer's written instructions.
- .1 Visually inspect substrate.
- .2 Inform Consultant of unacceptable conditions immediately upon discovery.
- .3 Proceed with installation only after unacceptable conditions have been remedied.

3.2 INSTALLATION OF SOUND ATTENUATION BATTS

- .1 Provide sound attenuation batts in **all interior walls**.

3.3 GYPSUM BOARD APPLICATION (INTERIOR)

- .1 Do not apply gypsum board until bucks, anchors, blocking, electrical and mechanical work are reviewed by the Architect.
- .2 The use of crimpers shall be not permitted on this project.
- .3 Apply 12 mm diameter bead of acoustic sealant continuously around perimeter 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, ducts, etc., in partitions where perimeter is sealed with acoustical sealant.
- .4 Install acoustic fibrous material in all metal stud partitions both above and below the ceiling to achieve minimum STC 45 rating for partition.
- .5 Install specified layers of the specified wallboard to steel studs as indicated.
- .6 Apply the specified number of layers of gypsum wallboard over steel studs:
 - .1 one (1) layer: vertically
 - .2 two (2) layers: first layer horizontally, second layer vertically
- .7 Gypsum wallboard shall be screwed at 300 mm on centres at a maximum in the field of the board and 200 mm, 8" on centres along the vertical abutting edges.
- .8 Use 31.7 mm (1-1/4") screws for one (1) layer of wallboard; 63.4 mm (2-1/2") screws for two (2) layers of wallboard:
 - .1 first layer: apply with screws as specified in para .7 above
 - .2 second layer: laminate over first layer using the specified compound
- .9 Install sound attenuation batts as specified herein at all interior partitions, and elsewhere Specified herein or shown on the drawings. Press in tightly and staple to the back side of one (1) face of the partition.
- .10 Joints on opposite sides of the partition shall occur on different studs. Cut wallboard neatly to fit around all interruptions.
- .11 Install sealant at the perimeter and on both sides of all walls and at all interruptions.
- .12 All visible internal and external angles formed by the intersection of either wallboard surfaces or other surfaces shall be treated with vinyl trims, as specified herein and as indicated.
- .13 Carry all partitions to underside of concrete structure. Pack all gaps between deck and top of partitions with the specified sound attenuation batts. Use ULC approved fire stopping material

for walls which are required to provide a smoke barrier or fire rating.

- .14 All abutting end or edge joints shall occur over the web surface of the furring channel and shall be fitted neatly and accurately with end joints staggered.
- .15 Gypsum wallboard shall be properly supported around all cutouts and openings in the ceiling.
- .16 Install casing beads around perimeter of suspended ceilings.
- .17 For diffusers and access panels see mechanical specifications and mechanical drawings for details to be complied with.
- .18 Install wire mesh in walls between Library and Teacher=s Lounge as per O.B.C. 4.1.10.3.

3.4 ACCESSORIES

- .1 Erect accessories straight, 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, and free of rough edges.
- .2 Install metal corner beads on external angles.
- .3 Install metal casing beads around perimeter of suspended ceilings.
- .4 Install metal casing beads where gypsum board butts against surfaces which have no trim to conceal the junction, and where indicated. Seal joints with sealant.
- .5 Install insulating strips continuously at edges of gypsum board or casing beads abutting metal window or exterior door frames, to provide thermal break.
- .6 Install metal casing beads where gypsum board butts dissimilar material.

3.5 ACCESS DOORS

- .1 Install access doors to electrical or mechanical fixtures specified in respective Sections.
- .2 Rigidly secure frames to furring or framing system.

3.6 TRIM

- .1 Minimize joints; use corner pieces as specified herein.

3.7 INSTALLATION OF GYPSUM WALLBOARD TREATMENT JOINT TREATMENT

- .1 All junctions of wallboard panels shall be taped and filled in accordance with the following:
 - .1 Joint compounds shall be mixed in accordance with manufacturer's instructions and CSA A82.31-M1980.
 - .2 Prefill abutting rounded edges of eased edge gypsum wallboard with pre-fill compound. Leave a depression for tape.
 - .3 Apply the specified reinforced tape; embed it in joint compound and fold it and embed it in all angles to provide a true angle.
 - .4 A filling coat shall be applied over the embedding coat to fill board tapers flush with the wallboard surface. On joints with no taper the fill coat shall cover the tape and feather

- out at least 100 mm on either side of the tape.
- .5 A finishing coat shall be applied to the fill coat and feathered to a smooth uniform finish.
- .6 To provide a smooth surface, sanding shall occur between coats and following the final application of compound.

3.8 CONTROL JOINTS

- .1 Construct control joints of preformed units set in gypsum board facing and supported independently on both sides of joint.
- .2 Provide continuous polyethylene dust barrier behind and across control joints.
- .3 For interior work, locate control joints at changes in substrate construction at approximate 10m spacing on walls, at approximate 15 m spacing on ceilings.
- .4 For exterior work, locate control joints as per manufacturer's recommendations.
- .5 Install control joints straight and true.

3.9 PATCHING AND MAKING GOOD

- .1 Patch and make good new surfaces cut, damaged or disturbed, to Architect's approval.
- .2 Making good shall extend beyond the immediate limits of the disturbed surfaces to ensure the imperceptible continuity of existing décor.

END OF SECTION

PART 1- GENERAL

1.1 RELATED REQUIREMENTS

- .1 Ontario Building Code (latest edition).
- .2 National Building Code of Canada (latest edition)
- .3 CAN3-S136, Cold Formed Steel Structural Members.
- .4 CSA-W47.1, Certification of Companies for Fusion Welding of Steel Structures
- .5 CSA-W59, Welded Steel Construction (Metal Arc Welding)
- .6 CAN-CGSB, 1-GP-181M Standard for: Coating, Zinc Rich, Organic Ready Mix

1.2 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM).
 - .1 ASTM C 645-00, Specification for Nonstructural Steel Framing Members.
 - .2 ASTM C 754-00, Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
- .2 Canadian General Standards Board (CGSB): CAN/CGSB-1.40-97, Primer, Structural Steel, Oil Alkyd Type.

1.3 FIRE RATED CONSTRUCTION

- .1 Provide wall assemblies for fire rated partitions to ULC test designs.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 NON-LOADBEARING CHANNEL STUD FRAMING FOR INTERIOR USE: to ASTM C645-81; 92 mm and 152 mm deep x 0.53 mm thick; roll formed from electrogalvanized steel sheet, for screw attachment of gypsum board. Knock out service holes at 460 mm centres.
- .2 NON-LOADBEARING CHANNEL STUD FRAMING FOR INTERIOR USE AT ABUSE-RESISTANT GYPSUM BOARD: to ASTM C645-81; 92 mm and 152 mm deep x 0.36 mm thick; roll formed from electrogalvanized steel sheet, for screw attachment of gypsum board. Knock out service holes at 460 mm centres.
- .3 FLOOR AND TOP TRACKS FOR INTERIOR STUD WALLS: to ASTM C645-81; in widths to suit stud sizes, minimum 40 mm flange height. Top tracks for partitions located below steel roof or floor structures shall be deflection tracks which allow maximum 25 mm deflection of building structure.
- .4 METAL CHANNEL STIFFENER FOR STUD WALLS: 2 mm thick by minimum 38 mm wide cold rolled steel, coated with rust inhibitive coating.
- .5 ACOUSTICAL SEALANT: to CGSB 19-GP-21M.

- .6 INSULATING STRIP: rubberized, moisture resistant 3 mm thick neoprene strip, 12 mm wide, with self-sticking adhesive on one (1) face, lengths as required.
- .7 SCREWS AND FASTENINGS FOR STUD WALL SYSTEM: purpose-made to suit application, to CSA-A82.31-M1980, Type S, shall be zinc coated, stainless steel for exterior stud wall system.

PART 3 - EXECUTION

3.1 ERECTION OF NON LOAD BEARING CHANNEL STUD FRAMING FOR INTERIOR USE

- .1 Align partition tracks at floor and underside of metal deck and concrete structure and secure at 400 mm o.c. maximum.
- .2 Place studs vertically at 400 mm o.c. and not more than 50 mm from abutting walls, and at each side of openings and corners. Position studs in tracks at floor and ceiling. Cross brace steel studs as required to provide rigid installation to manufacturer's instructions.
- .3 Erect metal studding to tolerance of 1:1000.
- .4 Attach studs to bottom and top track or as detailed on drawings, using screws or crimp pop rivets.
- .5 Coordinate simultaneous erection of studs with installation of service lines. When erecting studs ensure web openings are aligned.
- .6 Coordinate erection of studs with installation of door/window frames and special supports or anchorage for work specified in other Sections.
- .7 Provide two (2) or more studs extending from floor to ceiling at each side of openings wider than stud centres specified or as shown on drawings. Secure studs together, 50 mm apart using column clips or other approved means of fastening placed alongside frame anchor clips.
- .8 Provide one row of continuous horizontal of stiffener for all interior stud walls. At partitions over 3500 mm (12'-0") high provide two (2) rows. There upon provide one additional row of horizontal stiffener for every 1500 mm (5'0") height of partition.
- .9 Erect track at head of door/window openings and sills of sidelight/window openings to accommodate intermediate studs. Secure track to studs at each end, in accordance with manufacturer's printed instructions. Install intermediate studs above and below openings in same manner and spacing as wall studs.
- .10 Provide 40 mm stud or furring channel and wood blocking as required secured between studs for attachment of millwork, fixtures, etc., and other items including wall stops for doors, towel rails, etc., attached to steel stud partitions.
- .11 Install steel studs or furring channel between studs for attaching electrical and other boxes.
- .12 Extend partitions to underside metal deck and/or concrete except where noted otherwise.
- .13 Maintain clearance under steel structure to avoid transmission of structural loads to studs. Use 50 mm leg top tracks with stud connections at these locations to allow for movement. Refer to drawings for additional details.
- .14 Install continuous insulating strips to isolate studs from uninsulated surfaces.

- .15 Install two (2) continuous beads of sealant behind studs and tracks around perimeter of all partitions.
- .16 Extend studs vertically and tie to structure to provide lateral stability.
- .17 Provide diagonal bracing above ceilings as required to meet design criteria.
- .18 Frame all openings in fire rated partitions, inclusive of mechanical and electrical Channel openings, to ULC-G21, Figures 4, 5, 6, 7, 8 for and 15, ULC CR 1255, Figures 1 and 2, and ULC Certification Bulletin #80-5.

3.2 SUSPENDED AND FURRED CEILINGS AND BULKHEADS

- .1 Erect hangers and runner channels for suspended ceilings in accordance with CSA A82.31-M1980 except where specified otherwise.
- .2 Install work level to tolerance of 1:1200.
- .3 4 mm (9 gauge) hangers shall be spaced not over 1200 mm for interior applications, and not over 900 mm for exterior applications, in the direction of the 33 mm main runner channels and not over 1200 mm for interior applications, and not over 900 mm for exterior applications in the direction at right angles to the main runners, and within 150 mm of the ends of main runner runs and of boundary walls or similar interruptions of ceiling continuity. Secure hangers to u/s of overhead steel structure. It is NOT PERMISSIBLE to attach hangers or channels from the steel deck. Where it is not possible to attach to steel structure, provide additional supports hung from steel structure.
- .4 Main runners shall be placed not over 1200 mm oc for internal applications, and maximum 900 mm oc for exterior applications, properly positioned, levelled, and hangers shall be saddle tied along runner.
- .5 Main runners shall not be let into nor come in contact with abutting walls. Runner channels shall be located within 150 mm, 6" of the walls to support the ends of the furring channels.
- .6 Except where shown otherwise, metal furring channels shall be spaced 450 mm oc for internal application and 300 mm oc for exterior application. Metal furring channels shall be securely clipped with furring channel clips or saddle tied with two (2) strands of 16 gauge tie wire to main runners or main support members and shall not be let into or come in contact with abutting masonry walls.
- .7 End splices shall be provided by nesting channels or studs no less than 200 mm and securely attached with wire.
- .8 Metal furring channel clips shall be installed on alternate sides of the main runner channel. Wire tie metal furring channel to 38 mm channel and to main support members when clips cannot be alternated.
- .9 At light fixtures or any openings that interrupt the main runner or channels, reinforce grillage with 19 mm cold rolled channels, wire tied atop and parallel to the main runner channels. Provide gypsum board boxing over fixtures or other devices to maintain fire resistance rating of one (1) hour. Size boxing of recessed light fixtures to meet fixture manufacturer's requirements for dissipation of heat.
- .10 Support light fixtures by providing additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of fixture.

- .11 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, grilles.
- .12 Install 22 x 68 mm C.G.C. furring channels parallel to, and at exact locations of steel stud partition header track.
- .13 Furr for gypsum board faced vertical bulkheads within or at termination of ceilings. Vertical furring shall be braced type wherever possible. Where bracing is impractical, furring shall be sized to suit the condition prevailing.

3.3 CLEANING

- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

PART 1- GENERAL

1.1 REFERENCES

- .1 Environmental Protection Agency (EPA): Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 (for Surface Coatings).
- .2 Do painting to CAN/CGSB-85-100-M81.
- .3 Flame spread rating to ASTM E-84 (NFPA 255).
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS): Material Safety Data Sheets (MSDS).
- .5 The Master Painters Institute (MPI)
 - .1 Architectural Painting Specification Manual - February 2004.
 - .2 Standard GPS-1-05, MPI Green Performance Standard for Painting and Coatings.
- .6 National Fire Code of Canada and Ontario Fire Code.
- .7 Society for Protective Coatings (SSPC): Systems and Specifications, SSPC Painting Manual 2005.

1.2 QUALITY ASSURANCE

- .1 Qualifications:
 - .1 Contractor: to have a minimum of five years proven satisfactory experience. When requested, provide list of last three comparable jobs including, job name and location, specifying authority, and project manager.
 - .2 Qualified journeypersons as defined by local jurisdiction to be engaged in painting work
 - .3 Apprentices: may be employed provided they work under direct supervision of qualified journeyperson in accordance with trade regulations.
 - .4 Conform to latest MPI requirements for exterior painting work including preparation and priming.
 - .5 Materials: in accordance with MPI Painting Specification Manual "Approved Product" listing and from a single manufacturer for each system used.
 - .6 paint materials such as linseed oil, shellac, and turpentine to be highest quality product of an approved manufacturer listed in MPI Painting Specification Manual and to be compatible with other coating materials as required.
 - .7 Standard of Acceptance:
 - .1 Walls: No defects visible from a distance of 1000 mm at 90 degrees to surface.
 - .2 Soffits: No defects visible from floor at 45 degrees to surface when viewed using final lighting source.
 - .3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 On request of the Architect submit sample "draw downs" sets of materials and colours proposed for use in the work. One set of each sample will be retained by the Architect for future comparison. Finished work shall be equal to samples.
- .3 When required, samples shall be made on the actual work in the building.

1.4 QUALITY CONTROL

- .1 Provide mock-up in accordance with Section 01 45 00 - Quality Control.
- .2 When requested by Consultant, prepare and paint designated surface, area, room or item to requirements specified herein, with specified paint or coating showing selected colours, number of coats, gloss/sheen, textures and workmanship to MPI Painting Specification Manual standards for review and approval. When approved, surface, area, room and/or items shall become acceptable standard of finish quality and workmanship for similar on-site work.

1.5 MAINTENANCE

- .1 Extra Materials:
 - .1 Submit maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.
 - .2 Submit one, four litre can of each type and colour of primer, stain, finish coating. Identify colour and paint type in relation to established colour schedule and finish system.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.

1.7 AMBIENT CONDITIONS

- .1 Heating, Ventilation and Lighting:
 - .1 Ventilate enclosed spaces.
 - .2 Do not perform painting work unless adequate and continuous ventilation and sufficient heating facilities are in place to maintain ambient air and substrate temperatures above 10 degrees C for 24 hours before, during and after paint application until paint has cured sufficiently.
 - .3 Where required, provide continuous ventilation for seven days after completion of application of paint.
 - .4 Co-ordinate use of existing ventilation system with Owner and ensure its operation during and after application of paint as required.
 - .5 Provide temporary ventilating and heating equipment where permanent facilities are not available or supplemental ventilating and heating equipment if ventilation and heating from existing system is inadequate to meet minimum requirements.
 - .6 Perform no painting work unless a minimum lighting level of 323 Lux is provided on surfaces to be painted. Adequate lighting facilities to be provided by General Contractor.
- .2 Temperature, Humidity and Substrate Moisture Content Levels:
 - .1 Unless specifically pre-approved by specifying body, Paint Inspection Agency and, applied product manufacturer, perform no painting work when:
 - .1 Ambient air and substrate temperatures are below 10 degrees C.
 - .2 Substrate temperature is over 32 degrees C unless paint is specifically formulated for application at high temperatures.
 - .3 Substrate and ambient air temperatures are expected to fall outside MPI or paint manufacturer's prescribed limits.
 - .4 Relative humidity is above 85 % or when dew point is less than 3 degrees C variance between air/surface temperature.
 - .5 Rain or snow are forecast to occur before paint has thoroughly cured or when it is foggy, misty, raining or snowing at site.
 - .2 Perform no painting work when maximum moisture content of substrate exceeds:
 - .1 12% for concrete and masonry (clay and concrete brick/block).

- .2 15% for wood.
- .3 12% for plaster and gypsum board.
- .3 Conduct moisture tests using a properly calibrated electronic Moisture Meter, except test concrete floors for moisture using a simple "cover patch test".
- .4 Test concrete, masonry and plaster surfaces for alkalinity as required.
- .3 Surface and Environmental Conditions:
 - .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 to adequately prepared surfaces and to surfaces within moisture limits noted herein.
 - .3 Apply paint when previous coat of paint is dry or adequately cured.
 - .4 Apply paint finishes when conditions forecast for entire period of application fall within manufacturer's recommendations.
 - .5 Do not apply paint when:
 - .1 Temperature is expected to drop below 10 degrees C before paint has thoroughly cured.
 - .2 Substrate and ambient air temperatures are expected to fall outside MPI or paint manufacturer's limits.
 - .3 Surface to be painted is wet, damp or frosted.
 - .6 Provide and maintain cover when paint must be applied in damp or cold weather. Heat substrates and surrounding air to comply with temperature and humidity conditions specified by manufacturer. Protect until paint is dry or until weather conditions are suitable.
 - .7 Schedule painting operations such that surfaces exposed to direct, intense sunlight are scheduled for completion during early morning.
 - .8 Remove paint from areas which have been exposed to freezing, excess humidity, rain, snow or condensation. Prepare surface again and repaint.
 - .9 Paint occupied facilities in accordance with approved schedule only. Schedule operations to approval of Owner such that painted surfaces will have dried and cured sufficiently before occupants are affected.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Paint materials listed in latest edition of MPI Approved Products List (APL) are acceptable for use on this project.
- .2 The Products of generally only one (1) manufacturer shall be used on the project and the Architect shall be notified of the proposed products to be used prior to delivery of the materials to the site.
- .3 Materials shall be premium grade manufactured by Pratt and Lambert Incorporated, Canadian Pittsburgh Industries Limited, Benjamin-Moore and Company Limited, Sherwin Williams, Para Paints, or Betonel.

2.2 MIXING AND TINTING

- .1 Perform colour tinting operations prior to delivery of paint to site. On-site tinting of painting materials is allowed only with Consultant's written permission.
- .2 Mix paste, powder or catalyzed paint mixes in accordance with manufacturer's written instructions.

- .3 Add thinner to paint manufacturer's recommendations. Do not use kerosene or organic solvents to thin water-based paints.
- .4 Thin paint for spraying according in accordance with paint manufacturer's instructions. If directions are not on container, obtain instructions in writing from manufacturer and provide copy of instructions to Consultant.
- .5 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.

2.3 GLOSS/SHEEN RATINGS

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

Gloss Level Category	Units @ 60 Degrees	Units @ 85 Degrees
G1 - matte finish	0 to 5	max. 10
G2 - velvet finish	0 to 10	10 to 35
G3 – eggshell finish	10 to 25	10 to 35
G4 – satin finish	20 to 35	min. 35
G5 – semi-gloss finish	35 to 70	
G6 – gloss finish	70 to 85	
G7 – high gloss finish	> 85	

- .2 Gloss level ratings of painted surfaces [as specified] [and] [as noted on Finish Schedule] .

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 EXAMINATION

- .1 Exterior repainting work: inspected by Contractor. Painting contractor to notify Consultant minimum of one week prior to commencement of work and provide copy of project repainting specification and Finish Schedule.
- .2 Exterior surfaces requiring repainting: inspected by Contractor who will notify Consultant in writing of defects or problems, prior to commencing repainting work, or after surface preparation if unseen substrate damage is discovered.
- .3 Where assessed degree of surface degradation of DSD-1 to DSD-3 before preparation of surfaces for repainting is revealed to be DSD-4 after preparation, repair or replacement of such unforeseen defects discovered are to be corrected, as mutually agreed, before repainting is started.
- .4 Where "special" repainting or recoating system applications (i.e. elastomeric coatings) or non-MPI listed products or systems are to be used, paint or coating manufacturer to provide as part of work, certification of surfaces and conditions for specific paint or coating system application as well as on site supervision, inspection and approval of their paint or coating system application as required at no additional cost to Owner.

3.3 STORAGE

- .1 Store paint materials in areas assigned for the purpose. Ventilate well and take all fire safety precautions. Keep containers closed.
- .2 Keep all paint materials in unopened, original containers which are sealed and labelled.
- .3 Packaged items which require inside protection shall be stored in a warm, dry area within the building.
- .4 All soiled or used rags and waste shall be removed from the building every night.

3.4 PREPARATION

- .1 Perform preparation and operations for exterior painting in accordance with MPI Maintenance Repainting Manual except where specified otherwise.
- .2 Apply paint materials in accordance with paint manufacturer's written application instructions.
- .3 Clean and prepare exterior surfaces to be repainted in accordance with MPI Maintenance Repainting Manual requirements. Refer to the MPI Manual in regard to specific requirements and as follows:
 - .1 Remove dust, dirt, and surface debris by vacuuming, wiping with dry, clean cloths or compressed air.
 - .2 Wash surfaces with a biodegradable detergent and bleach where applicable and clean warm water using a stiff bristle brush to remove dirt, oil and other surface contaminants.
 - .3 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.
 - .4 Allow surfaces to drain completely and allow it to dry thoroughly. Allow sufficient drying time and test surfaces using electronic moisture meter before commencing work.
 - .5 Use water-based cleaners in place of organic solvents where surfaces will be repainted using water based paints.
 - .6 Many water-based paints cannot be removed with water once dried. Minimize use of kerosene or such organic solvents to clean up water-based paints.
- .4 Clean metal surfaces to be repainted by removing rust, dirt, oil, grease and foreign substances in accordance with MPI requirements. Remove such contaminants from surfaces, pockets and corners to be repainted by brushing with clean brushes, blowing with clean dry compressed air, or brushing/vacuum cleaning as required.
- .5 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before priming and between applications of remaining coats. Touch-up, spot prime, and apply primer, paint, or pretreatment as soon as possible after cleaning and before deterioration occurs.
- .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.

3.5 EXISTING CONDITIONS

- .1 Investigate existing substrates for problems related to proper and complete preparation of surfaces to be painted. Report to Consultant damages, defects, unsatisfactory or unfavourable conditions before proceeding with work.
- .2 Conduct moisture testing of surfaces to be painted using a properly calibrated electronic moisture meter, except test concrete floors for moisture using a simple "cover patch test" and

report findings to Consultant. Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.

- .3 Maximum moisture content as follows:
 - .1 Stucco: 12%.
 - .2 Concrete: 12%.
 - .3 Clay and Concrete Block/Brick: 12%.
 - .4 Wood: 15%.

3.6 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 such surfaces as directed by Consultant.
- .2 Protect items that are permanently attached such as Fire Labels on doors and frames.
- .3 Protect factory finished products and equipment.
- .4 Protect passing pedestrians, building occupants, and general public in and about building.
- .5 Remove light fixtures, surface hardware on doors, and other surface mounted equipment, fittings and fastenings prior to undertaking painting operations. Store items and re-install after painting is completed.
- .6 Move and cover exterior furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.
- .7 As painting operations progress, place "WET PAINT" signs in pedestrian and vehicle traffic areas to approval of Consultant.

3.7 MECHANICAL/ELECTRICAL EQUIPMENT

- .1 Unless otherwise specified, paint ALL exterior exposed conduits, piping, hangers, duct work and other mechanical and electrical equipment with colour and finish to match adjacent surfaces, except as noted otherwise. Do not paint inside mechanical cabinets.
- .2 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.
- .3 Do not paint over nameplates.
- .4 Fire protection piping shall be red 509-102 in accordance with CAN/CGSB 60.1-M89.
- .5 Natural gas piping shall be yellow 505-101 in accordance with CAN/CGSB 60.1-M89.
- .6 Keep sprinkler heads free of paint.
- .7 Paint inside of ductwork where visible with primer and one coat of matt black paint.
- .8 Paint both sides and edges of plywood backboards for equipment before installation. Leave equipment in original finish except for touch-ups as required. Do not paint over name plates.
- .9 Paint steel electrical light standards. Do not paint outdoor transformers and substation equipment.

3.8 EXTENT OF INTERIOR PAINTING

- .1 As indicated in Room Finish Schedule, drawings and specifications.
- .2 All interior mechanical and electrical equipment, inclusive of exposed pipes and ducts, shall be painted.

3.9 SURFACE PREPARATION

- .1 General:
 - .1 Surfaces shall be carefully cleaned. Remove all oil, ridges and unevenness
 - .2 Surfaces shall be dry.
- .2 Plaster and Drywall:
 - .1 Plaster shall be thoroughly cured. Prepare to CAN/CGSB-85.100-93. Fill minor cracks with plaster patching compound.
 - .2 Gypsum wall board shall be properly finished, patched, taped and sanded smooth, by the drywall contractor, prior to painting. All surface dust shall be removed to enhance adhesion.
- .3 Wood:
 - .1 Prepare to CAN/CGSB-85.100-93. Putty all holes, cracks, joints and other defects and sand smooth. Sand lightly between all coats. Knots, sap and pitch in wood shall be stopped with two (2) coats of shellac before priming.
- .4 Concrete Block and Concrete Surfaces:
 - .1 Prepare to CAN/CGSB-85.100-93. Wire brush off loose particles and dust.
- .5 Ferrous Surfaces:
 - .1 Remove dirt and grease with benzene. Remove runs and defective prime paint down to bare metal and touch up with CGSB 1-GP-40M to CGSB 85-GP-14M.
- .6 Galvanized Steel (including but not limited to exposed roof deck and exposed ductwork):
 - .1 Prepare galvanized and zinc coated surfaces to CGSB 85-GP-16M. Prime with metal conditioner which conforms to CGSB 1-GP-121M. After ten (10) minutes wash with clean water. Mild steel shall be primed with red lead primer.
- .7 Concrete Floors:
 - .1 Prepare to CGSB 85-GP-32M.
- .8 Plastic/Vinyl/PVC:
 - .1 After removing all surface contaminants, the surface shall be scuff sanded or scrubbed with an abrasive cleaner to dull the surface for best adhesion. Prime with PrepRite Bonding Primer B51W50 as manufactured by Sherwin Williams.

3.10 APPLICATION

- .1 Paint colours shall be in accordance with the colour schedule prepared by the Architect at a later date.
- .2 The different surfaces in any one (1) room will not necessarily be one (1) colour. Millwork, doors, walls, and other elements within rooms shall be painted with different strong accent colours. The total number of strong accent colours in the project shall be limited to two (2). A total of two (2) basic wall colours shall be used. Doors shall be a different colour from walls.

- .3 In the Room Finish Schedule, where surfaces in rooms are specified to be painted, all elements fixed to those surfaces including frames of openings, doors, radiators, exposed new metal surfaces, shall be painted unless otherwise specified. Paint behind radiator covers.
- .4 In the Room Finish Schedule, where surfaces in rooms are specified to be painted, all elements fixed to those surfaces including frames of openings, doors, radiators, exposed new metal surfaces, shall be painted unless otherwise specified. Paint behind radiator covers.
- .5 Apply each coat at the proper consistency in accordance with the manufacturer's directions.
- .6 Sand lightly between coats when enamel or varnish is applied to wood or metal.
- .7 Regardless of the number of coats specified for any surface, apply sufficient number of extra coats of paint to produce a solid, uniform appearance and coverage in the opinion of the Architect.
- .8 Paint shall be applied by brush, roller, and airless spray. Reduce paint materials in strict accordance with the manufacturer's directions.
- .9 Top and bottom edges of doors shall receive the same finish as the face of the door.
- .10 New Gypsum Board:
 - .1 One (1) coat of primer-sealer to CAN/CGSB-1-119-2000
 - .2 Two (2) coats of eggshell, premium quality, 100% acrylic latex enamel.
 - .3 Acceptable Material: Sherwin Williams "Luster-Flex" 2000 Series, ICI Devoe "Devflex".
- .11 Concrete Block and Poured Concrete Walls:
 - .1 One (1) coat of block filler to CAN/CGSB-1.188-96
 - .2 Two (2) coats of eggshell, premium quality, 100% waterborne acrylic latex enamel.
 - .3 Acceptable Material: Sherwin Williams "Luster-Flex" 2000 Series, ICI Devoe "Devflex"
- .12 Concrete Floors:
 - .1 One (1) coat of two component catalyzed semi-gloss epoxy resin. Reduce in accordance with manufacturer's instructions.
 - .2 One (1) coat of two component catalyzed semi-gloss epoxy resin.
 - .3 Acceptable material: Sherwin Williams "Tile-Clad II Epoxy Series B62".
- .13 Interior Metalwork:
 - .1 Interior exposed metalwork except chromium, stainless steel, baked enamel and factory finish coated metalwork shall be painted:
 - .1 One (1) coat of metal primer to CAN/CGSB-1.40-97
 - .2 One (1) coat of enamel undercoat to CAN/CGSB-1.38-2000
 - .3 One (1) coat of semi-gloss, premium quality alkyd enamel to CAN/CGSB-1.57
 - .4 Acceptable Material: Equal to ICI Devoe "Devguard"
- .14 Interior Woodwork:
 - .1 On surfaces designated to receive Intumescent fire retardant clear finish:
 - .1 One (1) Flame Control No.6 Clear Wood Sealer.
 - .2 Two (2) coats Flame Control No.166
- .15 Interior of Ductwork:
 - .1 On interior of ductwork visible through grilles or diffusers:
 - .1 One (1) coat matt black conforming to CAN/CGSB-1.114-M91
 - .2 May be spray applied.
- .16 Exposed Mechanical Plastic/Vinyl/PVC Piping:
 - .1 One (1) coat PrepRite Bonding Primer

- .2 Two (2) coat of semi-gloss, premium quality alkyd enamel to CAN/CGSB-1.57-96

3.11 FIELD QUALITY CONTROL

- .1 Inspection: Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

3.12 CLEANING

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .1 Remove paint where spilled, splashed, splattered or sprayed as work progresses using means and materials that are not detrimental to affected surfaces.

3.13 RESTORATION

- .1 Clean and re-install hardware items removed before undertaken painting operations.
- .2 Remove protective coverings and warning signs as soon as practical after operations cease.
- .3 Remove paint splashings on exposed surfaces that were not painted. Remove smears and spatter immediately as operations progress, using compatible solvent.
- .4 Protect freshly completed surfaces from paint droppings and dust to approval of Consultant. Avoid scuffing newly applied paint.

END OF SECTION