

## 07 92 00 JOINT SEALANTS

.1 Seal at every joint as required to make the building weather tight, including but not limited to, windows, doors, between electrical / mechanical ducts, conduits or pipes.

.2 Unless noted otherwise, sealant shall be one part acrylic solvent release mono (555) by Tremco Manufacturing Co., in a colour to match the adjacent window/door frames, or the surrounding materials.

.3 Fill voids with loose glass fibre insulation and back the sealant with polyethylene rope as required.

.4 Fully seal joints and finish free of ridges, wrinkles, air pockets and embedded foreign matter.

.5 Do not allow sealants to cover or spot adjacent surfaces, protect as necessary.

.6 Clean all areas of drops, splatters or smudges as a result of this work.

## 08 11 00 STEEL DOORS AND FRAMES

.1 Hot dipped galvanized steel sheet: to ASTM A 653M or latest, minimum base steel thickness in accordance with CSDFMA Table 1 - Thickness for Component Parts or latest.

.2 Reinforcement channel: to CAN/CSA-G40.21 or latest, Type 44W, coating designation to ASTM A 653M or latest.

.3 Composites: balance of core materials used in conjunction with lead: in accordance with manufacturers' proprietary design.

.4 Hardware: (see Drawing A-03 for Hardware Schedule)

### FINISH

.1 Primer: Touch-up prime CAN/CGSB-1.181 or latest.

.2 Steel frames shall be field painted in accordance with Sections 09 90 00. Weatherstrips shall be protected from paint. Finish shall be free of scratches or other blemishes.

.3 Paint: water based, manufactured without compounds, which contribute to ozone depletion in the upper atmosphere, does not contain toxic metal pigments.

### FRAMES FABRICATION GENERAL

.1 Fabricate frames in accordance with CSDFMA specifications.

.2 Fabricate frames to profiles and maximum face sizes as indicated.

.3 Interior frames: 16 gauge minimum welded type construction.

.4 Blank, reinforce, drill and tap frames for mortised, templated hardware and electronic hardware using templates provided by finish hardware supplier. Reinforce frames for surface mounted hardware.

.5 Prepare frame for door silencers, 3 for single door.

.6 Manufacturer's nameplates on frames and screens are not permitted.

.7 Conceal fastenings except where exposed fastenings are indicated.

.8 Provide factory-applied touch up primer at areas where zinc coating has been removed during fabrication.

### FRAME ANCHORAGE

.1 Provide appropriate anchorage to floor and wall construction.

.2 Locate each wall anchor immediately above or below each hinge reinforcement on hinge jamb and directly opposite on strike jamb.

.3 Provide 2 anchors for rebate opening heights up to 1520 mm and 1 additional anchor for each additional 760 mm of height or fraction thereof.

.4 Locate anchors for frames in existing openings not more than 150 mm from top and bottom of each jambs and intermediate at 660 mm o.c. maximum.

.5 Frames for installation in stud partitions shall be provided with steel anchors of suitable design. For installation inside each jamb as follows:

A. Frames up to 2300mm (7'-8") height - four (4) anchors

B. Frames 2300mm (7'-8") to 2450mm (8'-2") - five (5) anchors

### FRAMES: WELDED TYPE

.1 Welding in accordance with CSA W59 or latest.

.2 Accurately mitre or mechanically joint frame profile and securely weld on inside of profile.

.3 Cope accurately and securely weld butt joints of mullions, transom bars, centre rails and sills.

.4 Grind welded joints and corners to a flat plane, fill with metallic paste and sand to uniform smooth finish.

.5 Securely attach floor anchors to inside of each jamb profile.

.6 Weld in 2 temporary jamb spreaders per frame to maintain proper alignment during shipment.

.7 Securely attach lead to inside of frame profile from return to jamb soffit (inclusive) on door side of frame only.

### HOLLOW STEEL CONSTRUCTION

.1 Form each face sheet for exterior doors from 16 gauge minimum sheet steel.

.2 Form each face sheet for interior doors from 16 gauge minimum sheet steel.

.3 Reinforce doors with vertical stiffeners, securely welded to each face sheet at 150 mm on centre maximum.

.4 Fill voids between stiffeners of exterior doors with polyurethane core.

.5 Fill voids between stiffeners of interior doors with temperature rise rated core.

### INSTALLATION

.1 Install labelled steel fire rated doors and frames to NFPA 80 except where specified otherwise.

.2 Install doors and frames to CSDFMA Installation Guide.

.3 Set frames plumb, square, level and at correct elevation.

.4 Secure anchorages and connections to adjacent construction.

.5 Brace frames rigidly in position while building-in. Install temporary horizontal wood spreader at three points of door opening to maintain frame width. Provide vertical support at centre of head for openings over 1200 mm wide. Remove temporary spreaders after frames are built-in.

.6 Make allowances for deflection of structure to ensure structural loads are not transmitted to frames.

.7 Caulk perimeter of frames between frame and adjacent material.

.8 Touch up with primer finishes damaged during installation.

.9 Fill exposed frame anchors and surfaces with imperfections with metallic paste filler and sand to a uniform smooth finish.

## 08 11 16 ALUMINUM DOORS AND FRAMES

.1 Aluminum extrusions: Aluminum Association alloy AA6063-T6 anodizing quality.

.2 Steel reinforcement: to CAN/CSA-G40.21, grade 300 W.

.3 Fasteners: stainless steel, finished to match adjacent material.

.4 Weatherstrip: mohair pile.

.5 Door bumpers: black neoprene.

.6 Isolation coating: alkali resistant.

.7 Glass: Factory sealed double glazing unit to 25mm overall thickness and as specified in Glazing section.

.8 Sealants: to CAN/CGSB 19.13-M87 or latest.

.9 Sheet Aluminum to AA6063-T5 alloy, 2mm thick, bonded to substrate where noted.

.10 Exterior door with NO centre rail: Aluminum-framed swing door with glass insert suitable for inclusion in curtain wall system. ALUMICOR Insuldoor 100A Series, or approved equal in accordance with B7 Substitutes.

.11 Hardware: (see Drawing A-03 for Hardware Schedule)

.12 Insulating glass units for exterior glazed door: In accordance with Section 08 80 00 - Glazing.

### ALUMINUM FRAMES

.1 Exterior curtain wall framing: Extruded aluminum with thermal break to meet CAN A440 performance levels for air leakage (fixed), water leakage (B7), wind load (C4), and condensation resistance (frame I71, glass I64); ALUMICOR 2500 Series Curtainwall, or approved equal in accordance with B7 Substitutes.

### ALUMINUM FINISHES

.1 Finish exposed surfaces of aluminum components in accordance with Aluminum Association Designation System for Aluminum Finishes. Anodized Aluminum Finish. Colour to be selected by Contract Administrator.

.2 Flashings: refer to Section 07 62 00 "Sheet Metal Flashing and Trim" and provide isolation coating.

### STEEL FINISHES

.1 Finish steel clips and reinforcing steel with zinc coating to CSA G164.

.2 Doors and framing to be by same manufacturer.

.3 Fabricate doors and frames to profiles and maximum face sizes as shown on drawings, with allowance for glazing and spandrel panels.

.4 Provide structural steel reinforcement as required.

.5 Fit joints tightly and secure mechanically.

.6 Conceal fastenings.

.7 Mortise, reinforce, drill and tap doors, frames and reinforcements to receive hardware

.8 Isolate aluminum from direct contact with dissimilar metals, concrete and masonry.

## 08 62 70 TUBULAR UNIT SKYLIGHTS

.1 System Description: Tubular unit skylight daylighting devices with exterior glazed dome, glazing retainers and gaskets, pan flashing assembly with integral adjustable pivot device, reflective tunnel, interior diffuser assemblies, and accessories, as required to meet installation and performance requirements indicated. Model: TGC Commercial Pan Flashed Sun Tunnel Skylight . Manufacturer: VELUX America Inc.

.2 Roof Dome Assembly: Transparent, UV-resistant dome with flashing base. Sizes as indicated on Drawings. Dome Glazing: 0.125 inch (3.18 mm) minimum thickness injection molded transparent impact modified acrylic material.

.3 Dome Seal: Adhesive-backed foam weatherstrip.

.4 VELUX SunCurve Daylight Directing Device: 22 inch (559 mm) diameter, injection molded, impact modified acrylic prism array to direct low-angle sunlight into tunnel.

.5 TGC Roof Pan Flashing: One-piece, formed self-flashing type pan flashing. Sizes as required for skylight unit sizes indicated on Drawings. Finish: Powder coat, colour to be selected by Contract Administrator.

.6 Intermediate Ring: High-impact plastic reflective tunnel receiver.

.7 Intermediate Ring Seal: Santoprene O-ring providing weather tight seal with roof flashing.

.8 Pivot Ring and Reflective Tunnel Collar: High-impact plastic pivoting socket mounts in intermediate ring and secures to factory-installed tunnel collar.

.7 Reflective Tunnel: Skylight light shaft formed from Class II anodized aluminum sheet, 0.016-inch/26-ga. (0.41 mm) thick, with silver specular interior finish surface coated with vacuum-evaporated silicone oxide and titanium oxide protective surface. Model: TTK or ZTR Rigid Reflective Tunnel.

.8 Reflective Tunnel Components: Provide extension and fastening components indicated and as required for installation based upon roof, ceiling, and structural member configuration, skylight and diffuser locations indicated on Drawings, and manufacturer's recommendations.

### DIFFUSERS

.1 Round Diffuser Assemblies for Finished Ceiling Applications: Round ceiling diffuser assembly attached directly to bottom of tunnel, dual high visible light transmittance lenses with insulating airspace, airtight seals, and paintable white acrylic trim ring. Model: VELUX America, Inc., Round Diffuser Model THC. Size as required for skylight sizes indicated.

.2 Lens Type: Frosted lens, minimum 92 percent visible light transmittance.

### MATERIALS

.1 Galvanized-Steel Sheet: ASTM A 653/A 653M, G90 (Z275) coating, either commercial steel or forming steel.

.2 Aluminum Sheet: Flat sheet complying with ASTM B 209/B 209M

.3 Bituminous Coating: SSPC-Paint 12, solvent-type, bituminous mastic, nominally free of sulfur and containing no asbestos fibers, formulated for 15-mil dry film thickness per coating.

.4 Mastic Sealants: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.

.5 Roofing Cement: ASTM D 4586, asbestos free, designed for trowel application or other adhesive compatible with roofing system.

### FINISHES

.1 Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

.2 Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

.3 Galvanized Steel Sheet:

A. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils (0.04 mm). Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

B. Color and Gloss: to be selected by Contract Administrator.

## 08 80 00 GLAZING

.1 Insulated Glass Units: CAN2-12.8M or latest. Tempered, double-pane.

.2 Glass units noted to receive mirrored and frosted finish: Outer surface of outer pane to be grey reflective. Concealed surface of inner to be pane acid etched obscure glass such as Matelux or Velour.

.3 Comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, cleaning, preparation, and data sheets.

## 09 29 00 GYPSUM WALLBOARD

.1 Standard interior board: Abuse-resistant Type X gypsum board by Georgia Pacific or approved equal in accordance with B7 Substitutes. Thicknesses as noted on drawings.

.2 Exterior wall and soffit sheathing board: DensGlass Gold by Georgia Pacific or approved equal in accordance with B7 Substitutes. Thicknesses as noted on drawings.

.3 Exterior roof parapet sheathing board: DensDeck by Georgia Pacific or approved equal in accordance with B7 Substitutes. Thicknesses as noted on drawings.

.4 Drywall furring channels: 0.5 mm core thickness galvanized steel channels for screw attachment of gypsum board.

.5 Steel drill screws: to ASTM C 1002 or latest.

.6 Stud adhesive: to CAN/CGSB-71.25 or latest.

.7 Laminating compound: as recommended by manufacturer, asbestos-free.

.8 Sealants: in accordance with Section 07 92 00.

.19 Polyethylene: to CAN/CGSB-51.34 or latest, Type 2.

.10 Insulating strip: rubberized, moisture resistant, 3 mm thick closed cell neoprene strip, 12 mm wide, with self sticking permanent adhesive on one face, lengths as required.

.11 Joint compound: to ASTM C 475 or latest, asbestos-free.

.12 All work is to be done by skilled trades persons, in accordance with CSA Standard A82.31, approved manufacturer's trade specifications and to the Manual of Gypsum Wallboard Construction by Gypsum Drywall Contractors International.

.13 Examine site conditions and other underlying work. Ensure that all bucks, anchors, blocking, electrical and mechanical work which are to be installed in or behind gypsum wallboard have been installed and approved.

.14 Apply wallboard using vertical method, with the board parallel to bearing. Fixing is to be used. Screw fixing at 1' o.c. for ceilings and 16" o.c. for walls.

.15 Install metal accessories as follows: corner beads to be installed at all external corners, using longest practical lengths and fixed at max. 6" o.c. on alternate sides; metal edge trim shall be installed to all cased openings and wherever gypsum wallboard abuts a dissimilar material. Use longest practical lengths, fixed at max. 1' o.c.

.16 To finish gypsum wallboard, tape, fill and sand all exposed joints, edges and corners, openings and fixings to produce an acceptable surface ready for decoration. Metal corner beads, casing beads and trim shall be used wherever detailed or specified or otherwise required to carry out the work in accordance with good construction practice. All such items shall be filled and finished unless specifically noted otherwise. Taping and filling of all joints and other items shall be with a minimum of three coats.

## 09 30 13 CERAMIC TILE

.1 Base Board Wall Tile: SOHWM416, Soho Series, Ceramic Glazed Ceramic/Non-porcelain Matte Non-rectified as distributed by Ames Tile & Stone. Colour to be White, matte finish, with matching grout and sealer. Size to be 4"x16".

.2 All tiling to include matching specialty tiles for external corner and angles, and accessories.

### MORTAR AND ADHESIVE MATERIALS

.1 Portland cement: to CSA A5, type 10.

.2 Sand: to ASTM C144, passing 16 mesh.

.3 Hydrated lime: to ASTM C207, Type N

.4 Latex additive: formulated for use in portland cement mortar and thin set bond coat.

.5 Water: potable and free of minerals and chemicals which are detrimental to mortar and grout mixes.

### BOND COAT AND GROUT

.1 Dry set Portland cement mortar: to ANSI A108.1.

.2 Organic adhesive: to [CGSB 71 GP 22M, Type [1] [2]] [ANSI A136.1].

.3 Epoxy bond coat: non toxic, non flammable, non hazardous during storage, mixing, application, and when cured. To produce shock and chemical resistant mortars having the following physical characteristics: Compressive Strength: 246 kg/cm2, Bond Strength: 53 kg/cm2, Water Absorption: 4.0% Max, Ozone Resistance, 200 hours @ 200 ppm: No loss of strength, Smoke Contribution Factor: 0, Flame Contribution Factor: 0.

.4 Finished mortar and grout to be resistant to urine, dilute acid, dilute alkali, sugar, brine and food waste products, petroleum distillates, oil and aromatic solvents.

.5 Colouring Pigments: Pure mineral pigments, limeproof and nonfading, complying with ASTM C979. Colouring pigments to be added to grout by manufacturer. (Site coloured grout is not acceptable).

.6 Use in Commercial Portland Cement Grout, Dry Set Grout, and Latex Portland Cement Grout. Commercial Portland Cement Grout: to CTI A118.6. Dry Set Grout: to CTI A118.6. Latex Portland Cement Grout: to ANSI A108.1, fast curing, high early strength, polymer modified, stain resistant, sanded mix for floors, unsanded mix for walls and floors with polished tiles commercial tile grout.

### ACCESSORIES

.1 Reinforcing mesh: 50 x 50 x 1.6 x 1.6 mm galvanized steel wire mesh, welded fabric design, in flat sheets, where required.

.2 Floor Transition Strips: purpose made metal extrusion; anodized aluminum type. Product: AHKA80AE, Schluter®-DILEX-AHKA Cove Base 5/16" Alum Satin, c/w matching inside corners (90°), outside corners (135°) and end caps. To be bonded to floor surface.

.3 Top of Base Board Wall Tile Transition Strips: purpose made metal extrusion; anodized aluminum type. Product: AE60, Schluter®-SCHIENE Edge Trim 1/4" Alum Satin.

.4 Reducer Strips: purpose made metal extrusion; anodized aluminum type; maximum slope of 1:2.

.5 Prefabricated Movement Joints: purpose made, having a Shore A Hardness not less than 60 and elasticity of plus or minus 40 percent when used in accordance to TTMAC Detail 301EJ.

.6 Sealant: in accordance with Section 07 90 00 - Joint Sealants.

.7 Floor sealer and protective coating: to CAN/CGSB 25.20, Type 1 to tile and grout manufacturers recommendations with 0 or low VOC.

.8 Corner trims: flush-mounted, purpose made, anodized aluminum corner trims by Schluter, or approved equal in accordance with B7 Substitutes. All outside corners to have continuous trims installed.

### WATERPROOFING MEMBRANE

.1 Latcrete 9235 Waterproofing Membrane at all tiled shower walls. Install in strict accordance with manufacturer's written installation instructions.

### MIXES

.1 Portland Cement:

A. Scratch coat: 1 part portland cement, 1/5 to 1/2 parts hydrated lime to suit job conditions, 4 parts sand, 1 part water, [and latex additive where required]. Adjust water volume depending on water content of sand.

B. Slurry bond coat: portland cement and water mixed to creamy paste. Latex additive may be included.

C. Mortar bed for floors: 1 part portland cement, 4 parts sand, 1 part water. Adjust water volume depending on water content of sand. [Latex additive may be included].

D. Mortar bed for walls and ceilings: 1 part portland cement, 1/5 to 1/2 parts hydrated lime to suit job conditions, 4 parts sand and 1 part water. Adjust water volume depending on water content of sand. [Latex additive may be included].

E. Levelling coat: 1 part portland cement, 4 parts sand, minimum 1/10 part latex additive, 1 part water including latex additive.

F. Bond or setting coat: 1 part portland cement, 1/3 part hydrated lime, 1 part water.

.2 Dry set mortar: mix to manufacturer's instructions.

.3 Organic adhesive: pre mixed.

.4 Mix bond and levelling coats, and grout to manufacturer's instructions.

.5 Adjust water volumes to suit water content of sand.

### PATCHING AND LEVELING COMPOUND

.1 Portland cement base, acrylic polymer compound, manufactured specifically for resurfacing and leveling concrete floors. Products containing gypsum are not acceptable.

.2 Have not less than the following physical properties: Compressive strength: 25 MPa, Tensile strength: 7 MPa, Flexural strength: 7 MPa, Density: 1.9.

.3 Capable of being applied in layers up to 50 mm thick, being brought to feather edge, and being trowelled to smooth finish.

.4 Ready for use in 48 hours after application.

### CLEANING COMPOUNDS

.1 Specifically designed for cleaning masonry and concrete and which will not prevent bond of subsequent tile setting materials including patching and leveling compounds and elastomeric waterproofing membrane and coat. Materials containing acid or caustic material are not acceptable.

### WORKMANSHIP

.1 All tile work shall be in accordance with TTMAC Tile Installation Manual 2000, "Ceramic Tile", unless specified otherwise, and appropriate to the location and to the substrate.

.2 Apply tile or backing coats to clean and sound surfaces.

.3 Maintain uniform joint appearance. Cut edges smooth and even. Do not split tiles.

.4 Maximum surface tolerance 1:800.

.5 Make joints between tile uniform and approximately 1.5 mm wide, plumb, straight, true, even and flush with adjacent tile. Ensure sheet layout not visible after installation. Align patterns.

.6 Lay out tiles so perimeter tiles are a minimum of 1/2 size. Centre patterns as shown on drawings.

.7 Sound tiles after setting and replace hollow sounding units to obtain full bond.

.8 Allow minimum 24 h after installation of tiles, before grouting.

.9 Clean installed tile surfaces after installation and grouting cured.

.10 Make control joints at 3m in each direction. Make joint width same as tile joints. Fill control joints with sealant in accordance with Section [07 92 10 - Joint Sealants]. Keep building expansion joints free of mortar and grout.

.11 Apply floor sealer and protective coating in accordance with manufacturer's instructions.

## 09 65 13 RESILIENT BASE AND ACCESSORIES

.1 Resilient rubber base: top set coved, 3mm (1/8") thick, rubber, 100mm (4") high. Contract of acceptance: Johnstone Traditional wall base. Colour to be selected by Contract Administrator.

.2 Self (cove) base: flooring coved up wall 100mm (4" complete w/ round vinyl resilient cove cap and 22mm (7/8") radius vinyl cove filler strip.

.3 Install as per manufacturer's written instruction. Adhesive: as recommended by manufacturer for the specific product and application.

## 09 77 00 FIBERGLASS REINFORCED PLASTIC PANELS (FRP)

.1 0.090" Smooth Class "III/C" Fiberglass Reinforced Plastic (FRP) Panels c/w harmonizing aluminum trim moldings and noncorrosive drive rivets to match panel colour. Colour to be selected by Contract Administrator. Manufacturer: Marlite or approved equal in accordance with B7 Substitutes.

.2 Install panels in strict accordance with manufacturer's recommended procedures and installation sequence. Comply with manufacturer's instructions for installation.

.3 Examine backup surfaces to determine that corners are plumb and straight, surfaces are smooth, uniform, clean and free from foreign matter, nails countersunk, joints and cracks filled flush and smooth with the adjoining surface.

.4 Repair defects prior to installation. Level wall surfaces to panel manufacturer's requirements. Remove protrusions and fill indentations.

.5 Cut and drill with carbide tipped saw blades or drill bits, or cut with shears. Pre-drill fastener holes 1/8" (3mm) oversize with high speed drill bit.

.6 For application of adhesive, follow adhesive manufacturer's recommendations.

.7 Repair or replace products that have been installed and are damaged. Clean installed products in accordance with manufacturer's instructions. Remove any adhesive or excessive sealant from panel face using solvent or cleaner recommended by panel manufacturer.

## 09 90 00 PAINTING

.1 Provide paint finish where called for on the Drawings. Allow for (1) base colour, and (1) distinct accent colour in each room. Note this does not include pre-finished items, e.g. flashing, windows, etc.

.2 All paint colours to be selected by Contract Administrator.

.3 Provide small area with specified number of coats of each colour prior to complete application or two weeks minimum prior to painting.

.4 Prepare all surfaces (existing and new) according to paint manufacturer's specifications for warrantable adhesion and smooth professional finish.

.6 Paint type and method

A. Interior Gypsum Board walls and ceilings: Paint Requirements: One coat Primer. Two coats epoxy paint using Pro Industrial, Pre Catalyzed water based Epoxy by Sherwin Williams or equal in accordance with B7.

B. Interior exposed steel (D04, D07) Paint Requirements: One coat primer using Pro Industrial Pro-Cryl Universal Acrylic Primer by Sherwin Williams or equal. Two coats epoxy paint using Pro Industrial, Pre Catalyzed water based Epoxy by Sherwin Williams or equal in accordance with B7.

C. Interior Wood Trim: Paint Requirements: One coat primer. Two coats epoxy paint using Pro Industrial, Pre Catalyzed water based Epoxy by Sherwin Williams or equal in accordance with B7.

D. Chalkboard Paint: Paint Requirements: One coat primer.