

## **Part 1 - General**

### **1.1 REFERENCE STANDARDS**

- .1 ASTM A792 Specification for Steel Sheet, Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
- .2 CGSB 37-GP-29M Sealing Compound, Rubber-Asphalt.
- .3 ASTM E 330 Structure Performance.
- .4 ASTM E283 Air Infiltration.
- .5 ASTM E 331 Water Penetration.
- .6 SMACNA (Sheet Metal and Air Conditioning Contractor's National Association) Architectural Sheet Metal Manual Specifications.
- .7 ASHRAE Handbook of Fundamentals.
- .8 AAMA-605-1 Finish Standards.
- .9 ASTM E84 Flame Spread Rating.
- .10 CSSBI Canadian Sheet Steel Building Institute.

### **1.2 QUALIFICATION OF APPLICATOR**

- .1 The work of this section shall be carried out by experienced and competent subcontractors. Subcontractors for this work must be authorized by the manufacturer.

### **1.3 SHOP DRAWINGS**

- .1 Submit shop drawings to Contract Administrator.
- .2 Clearly indicate dimensions, wall openings, head jamb, sill and mullion detail, materials and finish, anchor details, compliance with design criteria and requirements of related work such as allowable tolerances of building frame from design opening size.

### **1.4 STORAGE/PROTECTION**

- .1 Stack panel sheets tilted to provide water runoff.
- .2 Cover prefinished components with black polyethylene sheets to protect from direct sunlight and moisture penetration. Vent to encourage air movement.

## Part 2 - Products

### 2.1 MATERIALS

- .1 Sheet steel: aluminum-zinc alloy coated steel sheet to ASTM A792M, minimum grade 230, coating designation AZ150, 26 ga. base metal thickness.
- .2 Fasteners: as recommended by manufacturer, factory finish to match cladding, and shall maintain weathertight installation.
- .3 Sealants: as recommended by siding manufacturer.
- .4 Gaskets: soft pliable vinyl, extruded profile, to achieve weather-tightness when installed, as recommended by manufacturer.
- .5 Closures: closed-cell neoprene type material, "Rubatex" EPT compound, grade R483T or equal in accordance with B6.
- .6 Bituminous paint: to CGSB 1-GP-108c, Type 2.
- .7 Thermal Separators – Neoprene gasket.

### 2.2 FABRICATION

- .1 Exterior steel sheet cladding: factory preformed precoated metal.
  - .1 Acceptable products:
    - VicWest Steel Inc., profile Diamond Rib.
  - Colour:
    - As per Colour/Material Schedule
- .2 Exterior corners: of same profile, material and finish as adjacent siding material, shop cut and brake formed to right angle, concealed corner brace, hairline exposed joint, pop rivet connections with painted head to match siding.
- .3 Exposed joint (perpendicular to profile): ends of siding sheet shop cut clean and square, backed with tight fitting filler lapping back of joint, pop rivet connections, all exposed components to be colour matched to siding.
- .4 Accessories: cap flashings, drip flashings, internal corner flashings, copings and closures for head, jamb, sill and corners, of same material and colour as exterior siding, brake formed to shape.

## Part 3 - Execution

### 3.1 PREPARATION

- .1 Before commencing erection, the supporting structure shall be carefully examined. Any defects, misalignments, missing or improperly spaced supports shall be reported to the Engineer. Work shall not proceed until conditions are satisfactory. Warp or distortion of the finished siding will not be accepted.

- .2 Protect metal surfaces in contact with concrete, mortar, plaster or other cementitious material with protective bituminous paint.

### **3.2 INSTALLATION (FIELD ASSEMBLED)**

- .1 Install all wall/siding assemblies to material fabricator's instructions.
- .2 Provide alignment bars, brackets, clips, inserts, shims, etc., as required to securely and permanently fasten the wall system to the building structure.
- .3 Install exterior finish siding to integral thermal clips with fasteners as specified.
- .4 Sheets shall be fastened at a maximum of 300 mm o.c. to intermediate supports and 150 mm at end laps. Closures and flashings shall be fastened at 300 mm o.c.
- .5 End laps must occur over supports with a minimum 100 mm lap.
- .6 At vertical profiles for exterior siding, provide notched and formed top closures, caulked and sealed to arrest direct weather penetration. Ensure continuity of 'Pressure Equalization' of rain screen principles.
- .7 Completed installation to be free from noise, rattles, wind whistles, or noise due to thermal movement.

### **3.3 CLEANING**

- .1 Wash down exposed exterior surfaces using a solution of mild domestic detergent in warm water, applied with soft clean wiping cloths.
- .2 Remove excess sealant by use of recommended solvent.

**END OF SECTION**

## **Part 1 - General**

### **1.1 REFERENCES**

- .1 American Society for Testing and Materials (ASTM)
  - .1 ASTM A 167- 94a, Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
  - .2 ASTM A 480/A 480M- 95a, Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip.
  - .3 ASTM A 653/A 653M- 95, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - .4 ASTM A 792/A 792M- 95, Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot Dip Process.
  - .5 ASTM B 32- 95, Specification for Solder Metal.
  - .6 ASTM B 370- 92e1, Specification for Copper Sheet and Strip for Building Construction.
  - .7 ASTM D 523- 89(1994e1), Test Method for Specular Gloss.
  - .8 ASTM D 822- 89, Practice for Conducting Tests on Paint and Related Coatings and Materials Using Filtered Open-Flame Carbon-Arc Light and Water Exposure Apparatus.
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-37.5- M89, Cutback Asphalt Plastic Cement.
  - .2 CAN/CGSB-37.29- M89, Rubber-Asphalt Sealing Compound.
  - .3 CAN/CGSB-51.32- M77, Sheathing, Membrane, Breather Type.
  - .4 CAN/CGSB-93.1- M85, Sheet, Aluminum Alloy, Prefinished, Residential.
- .3 Canadian Standards Association (CSA)
  - .1 CSA A123.3- M1979, Asphalt or Tar Saturated Roofing Felt.

### **1.3 MEASUREMENT AND PAYMENT**

- .1 No measurement will be made under this Section. Include cost in work for each building for which sheet metal roofing is required.
- .2 No payment will be made under this Section. This work is considered part of the Lump Sum for each building for which sheet metal roofing is required.

### **1.4 SUBMITTALS**

- .1 Submit proof of manufacturer's CCMC Listing and listing number to the Engineer.

### **1.5 PRODUCT DATA**

- .1 Submit manufacturer's printed product literature, specifications and data sheets in accordance with Section 01330 - Submittal Procedures.

## 1.6 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Section 01330 - Submittal Procedures.
- .2 Indicate arrangements of sheets and joints, types and locations of fasteners and special shapes and relationship of panels to structural frame.

## 1.7 SAMPLES

- .1 Submit samples in accordance with Section 01330 - Submittal Procedures.
- .2 Submit duplicate 300 x 300 mm samples of each sheet metal material.

## Part 2 - Products

### 2.1 PREFINISHED STEEL SHEET

- .1 VOC content for surface coatings and touch up coatings for prefinished metal sheet maximum 250 g/L.
- .2 Surface coatings and touch up coatings manufactured or formulated without aromatic solvents, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium and their compounds will be acceptable for use on this project.
- .3 Prefinished steel with factory applied polyvinyl chloride.
  - .1 Class F1S.
  - .2 colour selected by the Engineer from manufacturer's standard range.
  - .3 Specular gloss: 30 units +/-5 in accordance with ASTM D 523.
  - .4 Coating thickness: not less than 200 micrometres.
  - .5 Resistance to accelerated weathering for chalk rating of 8, colour fade 5 units or less and erosion rate less than 20 % to ASTM D 822 as follows:
    - .1 Outdoor exposure period 5000 hours.
    - .2 Humidity resistance exposure period 5000hours.

### 2.2 ACCESSORIES

- .1 Isolation coating: alkali resistant bituminous paint.
- .2 Plastic cement: to CAN/CGSB-37.5.
- .3 Slip sheet: reinforced sisal paper or a heavy felt kraft paper.
- .4 Sealant: compatible with systems materials, recommended by system manufacturer.
- .5 Rubber-asphalt sealing compound: to CAN/CGSB-37.29.
- .6 Cleats: of same material, and temper as sheet metal, minimum 50 mm wide. Thickness same as sheet metal being secured.
- .7 Fasteners: concealed.
- .8 Washers: of same material as sheet metal, 1 mm thick with rubber packings.

### **2.3 FABRICATION**

- .1 Form individual pieces in 2400 mm maximum lengths. Make allowances for expansion at joints.
- .2 Hem exposed edges on underside 12 mm, miter and seal.
- .3 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.
- .4 Apply minimum 0.2 mm dry film thickness coat of plastic cement to both faces of dissimilar metals in contact.

### **Part 3 - Execution**

#### **3.1 INSTALLATION**

- .1 Use concealed fastenings except where approved by the Engineer before installation.
- .2 Secure cleats with two fasteners each and cover with cleat tabs.
- .3 Stagger transverse seams in adjacent panels.
- .4 Flash roof penetrations with material matching roof panels, and make watertight.
- .5 Form seams in direction of water-flow and make watertight.
- .6 Perform soldering with well heated coppers, heat seam thoroughly and sweat solder through its full width.
- .7 Clean and flux metals before soldering.
- .8 Follow sheet metal manufacturer's recommendations for soldering procedures.
- .9 As work progresses, neutralize excess flux with 5% to 10% washing soda solution, and thoroughly rinse. Leave work clean and free of stains.

#### **3.2 BUILT-IN GUTTERS**

- .1 Form built-in box gutter.
- .2 Use 1000 mm long sheets if section profile of gutter exceeds 1000 mm. Use 2.4 m or 3 m long sheets if sectional profile is less than 1000 mm.
- .3 Longitudinal joints not acceptable.
- .4 Secure gutter lining to substrate with screws, washers and expansion shields spaced maximum 1200 mm o/c along center of lining.

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- .5 At roof edges extend gutter lining under metal roofing 150 mm minimum and terminate in 20 mm folded edge secured by cleats. Hook lower end of roofing into lock strip to form 20 mm wide loose-lock seam.

**END OF SECTION**

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**1.1                Related Sections**

- .1        Section 01330 - Submittal Procedures.

**1.2                References**

- .1        The Aluminum Association Inc. (AA)
  - .1        Aluminum Sheet Metal Work in Building Construction-2000.
  - .2        AA DAF45-[97], Designation System for Aluminum Finishes.
- .2        American Society for Testing and Materials (ASTM International)
  - .1        ASTM A167-[99], Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
  - .2        ASTM A240/A240M-02, Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
  - .3        ASTM A591/A591M-98, Standard Specification for Steel Sheet, Electrolytic Zinc-Coated, for Light Coating Applications.
  - .4        ASTM A653/A653M-[01a], Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - .5        ASTM A792/A792M-[02], Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
  - .6        ASTM B32-[00], Standard Specification for Solder Metal.
- .3        Canadian Roofing Contractors Association (CRCA)
  - .1        Roofing Specifications Manual 1997.
- .4        Canadian General Standards Board (CGSB)
  - .1        CAN/CGSB-37.5-M89, Cutback Asphalt Plastic Cement.
  - .2        CAN/CGSB-51.32-M77, Sheathing, Membrane, Breather Type.
  - .3        CAN/CGSB-93.1-M85, Sheet Aluminum Alloy, Prefinished, Residential.

**1.3                Samples**

- .1        Submit shop drawings in accordance with Section 01330 - Submittal Procedures.
- .2        Submit 50 x 50 mm samples of each type of sheet metal material, colour and finish.

**1.4                Waste Management and Disposal**

- .1        Remove from site and dispose of all packaging materials at appropriate recycling facilities.
- .2        Place materials defined as hazardous or toxic in designated containers.
- .3        Ensure emptied containers are sealed and stored safely for disposal away from children.



- .4 Divert unused metal materials from landfill to metal recycling facility as approved by Contract Administrator.
- .5 Unused paint and sealant material must be disposed of at an official hazardous material collections site as approved by Contract Administrator.
- .6 Unused paint and sealant material material must not be disposed of into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.
- .7 Fold up metal banding, flatten and place in designated area for recycling.

## **Part 2 Products**

### **2.1 Sheet Metal Materials**

- .1 Zinc coated steel sheet, thickness as indicated, commercial quality to ASTM A653/A653M, with [Z275] designation zinc coating.

### **2.2 Prefinished Steel Sheet**

- .1 Prefinished steel with factory applied polyvinylidene fluoride.
  - .1 Colour selected by Consultant from manufacturer's standard range.
  - .2 Specular gloss: 30 units +/- in accordance with ASTM D523.
  - .3 Coating thickness: not less than 22 micrometres.
  - .4 Resistance to accelerated weathering for chalk rating of [8], colour fade [5] units or less and erosion rate less than [20] % to ASTM D822 as follows:
    - .1 Outdoor exposure period [2500] hours.
    - .2 Humidity resistance exposure period [5000] hours.
- .2 Prefinished steel with factory applied polyvinyl chloride.
  - .1 Colour selected by Consultant from manufacturer's standard range.
  - .2 Specular gloss: 30]units +/- 5 in accordance with ASTM D523.
  - .3 Coating thickness: not less than 200 micrometres.
  - .4 Resistance to accelerated weathering for chalk rating of 8, colour fade 5 units or less and erosion rate less than 20 % to ASTM D822 as follows:
    - .1 Outdoor exposure period 5000 hours.
    - .2 Humidity resistance exposure period 5000 hours.
- .3 Prefinished steel with factory applied silicone modified polyester.
  - .1 Class F1S].
  - .2 Colour selected by Consultant from manufacturer's standard range.
  - .3 Specular gloss: 30 units +/- 5 in accordance with ASTM D523.
  - .4 Coating thickness: not less than 20 micrometres.
  - .5 Resistance to accelerated weathering for chalk rating of 8, colour fade 5 units or less and erosion rate less than 20 % to ASTM D822 as follows:

- .1 Outdoor exposure period 1000 hours.
- .2 Humidity resistance exposure period 1000 hours.

### **2.3 Accessories**

- .1 Isolation coating: alkali resistant bituminous paint.
- .2 Plastic cement: to CAN/CGSB 37.5.
- .3 Underlay for metal flashing :
- .4 Sealants: as per 07900.
- .5 Cleats: of same material, and temper as sheet metal, minimum 50 mm wide. Thickness same as sheet metal being secured.
- .6 Fasteners: of same material as sheet metal, to CSA B111, [ring thread] flat head roofing nails of length and thickness suitable for [metal flashing] application.
- .7 Washers: of same material as sheet metal, 1 mm thick with rubber packings.
- .8 Solder: to ASTM B32,
- .9 Flux: rosin, cut hydrochloric acid, or commercial preparation suitable for materials to be soldered.
- .10 Touch-up paint: as recommended by prefinished material manufacturer.

### **2.4 Fabrication**

- .1 Fabricate metal flashings and other sheet metal work [in accordance with applicable CRCA 'FL' series details] [as indicated].
- .2 Fabricate aluminum flashings and other sheet aluminum work in accordance with AA-Aluminum Sheet Metal Work in Building Construction.
- .3 Form pieces in 2400 mm maximum lengths. Make allowance for expansion at joints.
- .4 Hem exposed edges on underside 12 mm. Mitre and seal corners with sealant.
- .5 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.
- .6 Apply isolation coating to metal surfaces to be embedded in concrete or mortar.

### **2.5 Metal Flashings**

- .1 Form flashings, copings and fascias to profiles indicated of 24 Ga prefinished steel.

## **2.6 Eaves Troughs and Downpipes**

- .1 Form eaves troughs and downpipes from 22 Ga prefinished.
- .2 Sizes and profiles [as indicated].
- .3 Provide goosenecks, [outlets], strainer baskets and necessary fastenings.

## **Part 3 Execution**

### **3.1 Installation**

- .1 Install sheet metal work [in accordance with CRCA FL series details
- .2 Use concealed fastenings except where approved before installation.
- .3 Provide underlay under sheet metal. Secure in place and lap joints 100 mm.
- .4 Counterflash bituminous flashings at intersections of roof with vertical surfaces and curbs. Flash joints using [S-lock] [standing seams] forming tight fit over hook strips, [as detailed].
- .5 Lock end joints and caulk with sealant.
- .6 Install surface mounted reglets true and level, and caulk top of reglet with sealant.
- .7 Insert metal flashing under cap flashing to form weather tight junction.
- .8 Turn top edge of flashing into recessed reglet or mortar joint minimum of 25 mm. Lead wedge flashing securely into joint.
- .9 Caulk flashing at cap flashing with sealant.
- .10 Install pans, where shown around items projecting through roof membrane.

### **3.2 Eaves Troughs and Downpipes**

- .1 Install eaves troughs and secure to building at 750 mm on centre with eaves trough spikes through spacer ferrules. Slope eaves troughs to downpipes as indicated. Seal joints watertight.
- .2 Install downpipes and provide goosenecks back to wall. Secure downpipes to wall with straps at 1800 mm on centre; minimum two straps per downpipe. Connect downpipes to drainage system and seal joint with plastic cement].
- .3 Install splash pans as indicated.

### **3.3 Scuppers**

- .1 Install scuppers as indicated.

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**END OF SECTION**

## **Part 1 - General**

### **1.2 QUALIFICATIONS**

- .1 Only competent and qualified tradesmen shall execute the work of this section, using adequate plant facilities and equipment.

### **1.3 MEASUREMENT AND PAYMENT**

- .1 No measurement will be made under this Section. Include cost in work for each building for which gutters and downspouts are required.
- .2 No payment will be made under this Section. This work is considered part of the Lump Sum for each building for which gutters and downspouts are required.

### **1.4 PROTECTION**

- .1 Exercise care when working on or about roof surface to avoid damaging or puncturing membrane or membrane flashings.
- .2 Place plywood panels on roof surfaces adjacent to work of this section. Keep in place until completion of the work.

## **Part 2 - Products**

### **2.1 MATERIALS/COMPOUNDS**

- .1 Gutters and Downspouts: minimum 0.61 mm (24 ga.) Galvalume sheet steel coating conforming to CSA S136-94, Grade 230, coating designation AZ150 with Barrier Series factory applied enamel finish. Colour to match fascias.
- .2 Bituminous Paint: Acid and alkali resistant type; black colour; conforming to requirements of CGSB 1-FP-108c.
- .3 Anchorage Devices: Type recommended by manufacturer and acceptable to the City.
- .4 Splash Pads: Precast concrete, 280 x 760 mm.

## **Part 3 - Execution**

### **3.1 INSTALLATION**

- .1 Fabricate gutters on site in continuous lengths, minimum 125 mm width.
- .2 Install gutters and downspouts where indicated on drawings. Join lengths with formed seams sealed watertight. Flash and seal gutters to downspouts.
- .3 Apply bituminous paint on all surfaces to be in contact with dissimilar materials.

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- .4 Slope gutters minimum 6 mm per 1220 mm.
- .5 Set splash pads under downspouts where and as indicated on drawings.

**END OF SECTION**

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**1.1                SECTION INCLUDES**

- .1        Materials, preparation and application for caulking and sealants.

**1.2                RELATED SECTIONS**

- .1        Section 01330 - Submittal Procedures.
- .2        Section 01450 - Quality Control].
- .3        Section 01610 - Basic Product Requirements.

**1.3                REFERENCES**

- .1        American Society for Testing and Materials International, (ASTM)
  - .1        ASTM C919-02, 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        Department of Justice Canada (Jus)
  - .1        Canadian Environmental Protection Act, 1999 (CEPA).
- .4        Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1        Material Safety Data Sheets (MSDS).
- .5        Transport Canada (TC)
  - .1        Transportation of Dangerous Goods Act, 1992 (TDGA).

**1.4                SUBMITTALS**

- .1        Submit product data in accordance with Section 01330 - Submittal Procedures.
- .2        Manufacturer's product to describe.
  - .1        Caulking compound.

- .2 Primers.
- .3 Sealing compound, each type, including compatibility when different sealants are in contact with each other.
- .3 Submit samples in accordance with Section 01330 - Submittal Procedures.
- .4 Submit duplicate samples of each type of material and colour.
- .5 Cured samples of exposed sealants for each color where required to match adjacent material.
- .6 Submit manufacturer's instructions in accordance with Section 01330 - Submittal Procedures.
  - .1 Instructions to include installation instructions for each product used.

## **1.5 DELIVERY, STORAGE, AND HANDLING**

- .1 Deliver, handle, store and protect materials in accordance with Section [01610 - Basic Product Requirements].
- .2 Deliver and store materials in original wrappings and containers with manufacturer's seals and labels, intact. Protect from freezing, moisture, water and contact with ground or floor.

## **1.6 PROJECT CONDITIONS**

- .1 Environmental Limitations:
  - .1 Do not proceed with installation of joint sealants under following conditions:
    - .1 When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 4.4 degrees C.
    - .2 When joint substrates are wet.
- .2 Joint-Width Conditions:
  - .1 Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.
- .3 Joint-Substrate Conditions:
  - .1 Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

## **1.7 ENVIRONMENTAL REQUIREMENTS**

- .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 (MSDS) acceptable to Labour Canada.
- .2 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.



**Part 2 Products**

**2.1 SEALANT MATERIALS**

- .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 offgas to exterior, are contained behind air barriers, or are applied several months before occupancy to maximize offgas time.
- .3 Where sealants are qualified with primers use only these primers.

**2.2 SEALANT MATERIAL DESIGNATIONS**

- .1 Polysulfide Two Part.
  - .1 Self-Leveling to CAN/CGSB-19.24, Type 1, Class B, colour as indicated.
- .2 Polysulfide One Part.
  - .1 Self-Leveling to CAN/CGSB-19.13, [MC-1-40-B-N] [MC-1-25-B-N], colour indicated.
  - .2 Urethanes Two Part.
- .3 Urethanes Two Part.
  - .1 Non-Sag to CAN/CGSB-19.24, Type 2, Class B, colour indicated..
- .4 Urethanes One Part.
  - .1 Self-Leveling to CAN/CGSB-19.13, Type 1, colour indicated..
- .5 Silicones One Part.
  - .1 To CAN/CGSB-19.13.
- .6 Acrylics One Part.
  - .1 To CGSB 19-GP-5M.
- .7 Acrylic Latex One Part.
  - .1 To CAN/CGSB-19.17.
- .8 Acoustical Sealant.
  - .1 To [ASTM C919].
- .9 Butyl.
  - .1 To CGSB 19-GP-14M.
- .10 Preformed Compressible and Non-Compressible back-up materials.
  - .1 Polyethylene, Urethane, Neoprene or Vinyl Foam.
    - .1 Extruded closed cell foam backer rod.
    - .2 Size: oversize 50 %.
  - .2 Neoprene or Butyl Rubber.

- .1 Round solid rod, Shore A hardness 70.
- .3 High Density Foam.
  - .1 Extruded closed cell polyvinyl chloride (PVC), extruded polyethylene, closed cell, Shore A hardness 20, tensile strength 140 to 200 kPa, extruded polyolefin foam, 32 kg/m<sup>3</sup> density, or neoprene foam backer, size as recommended by manufacturer.
- .4 Bond Breaker Tape.
  - .1 Polyethylene bond breaker tape which will not bond to sealant.

### **2.3 JOINT CLEANER**

- .1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.
- .2 Primer: as recommended by manufacturer.

## **Part 3 Execution**

### **3.1 PROTECTION**

- .1 Protect installed Work of other trades from staining or contamination.

### **3.2 SURFACE PREPARATION**

- .1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.
- .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 Ensure joint surfaces are dry and frost free.
- .5 Prepare surfaces in accordance with manufacturer's directions.

### **3.3 PRIMING**

- .1 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.
- .2 Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.

### **3.4 BACKUP MATERIAL**

- .1 Apply bond breaker tape where required to manufacturer's instructions.

- .2 Install joint filler to achieve correct joint depth and shape, with approximately 30% compression.

**3.5 MIXING**

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

**3.6 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.
  - .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 Cleanup.
  - .1 Clean adjacent surfaces immediately and leave Work neat and clean.
  - .2 Remove excess and droppings, using recommended cleaners as work progresses.
  - .3 Remove masking tape after initial set of sealant.

**END OF SECTION**