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| Version | Date | Description of Revisions |
| 1 | August 30, 2006 | Approved final document. |
| 2 | November 13, 2009 | Modified ‘Related Section’ |
| 3 | June 8, 2012 | Addition of References and Replacement Parts sections to this page. |
| 4 | July 6, 2012 | Change tab settings in page 1-6. |
| 5 | April 23, 2015 | General formatting |
| 6 | April 7, 2016 | Phase 1 update (AV) |
| **7** | **November 29, 2016** | **Updated based on Legal’s comments (eDOCs #6396345)** |
| 8 | February 14, 2017 | Removed acceptable materials section (CPD) (AV) |

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NOTE:

This is a CONTROLLED Document. Any documents appearing in paper form are not controlled and should be checked against the on-line file version prior to use.

**Notice:** This Document hardcopy must be used for reference purpose only.

**The on-line copy is the current version of the document.**

# GEneral

## Related Sections

### *[Under "Related Sections", identify other Sections that are related to, and/or dependent on, the work results or information specified elsewhere. The list should be limited to Sections with specific information that the reader might expect to find in this Section, but is specified elsewhere. For example, if hardware for aluminum entrances is specified in the aluminum entrance Section, a cross-reference would be appropriate in the finish hardware Section. The purpose of this cross-referencing is for information only, to aid in finding those other requirements—not to define the scope of the Section.*

### *Cross-referencing here may also be used to coordinate assemblies or systems whose components may span multiple Sections and which must meet certain performance requirements as an assembly or system.*

### *Contractor is responsible for coordination of the Work.*

### *This Section is to be completed/updated during the design development by the Consultant. If it is not applicable to the section for the specific project it may be deleted.]*

### *[List Sections specifying installation of products supplied but not installed under this Section and indicate specific items.]*

### Section [\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_]: Execution requirements for ...[item]... specified under this Section.

### *[List Sections specifying products installed but not supplied under this Section and indicate specific items.]*

### Section [\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_]: Product requirements for ...[item]... for installation under this Section.

### *[List Sections specifying related requirements.]*

### Section [\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_]: *[Optional short phrase indicating relationship*].

#### Section 01060 – Regulatory Requirements

#### Section 01300 – Submittals

## References

### Comply with the latest edition of the following statutes, codes, standards, and all amendments thereto:

#### Aluminum Association (AA)

##### AA DAF-45, Designation System for Aluminum Finishes – 9th Edition

##### AA ADM2015, Aluminum Design Manual.

#### American Society for Testing and Materials (ASTM)

##### ASTM A240/A240M-15a, Standard Specification for Chromium and Chromium – Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.

##### ASTM A653/A653M-15, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

##### ASTM A792/A792M-10(2015), Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot Dip Process.

##### ASTM B32-08(2014), Standard Specification for Solder Metal.

##### ASTM B370-12, Standard Specification for Copper Sheet and Strip for Building Construction.

##### ASTM D412-06a(2013), Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers – Tension.

##### ASTM D523-14, Standard Test Method for Specular Gloss.

##### ASTM D822/D822M-13, Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.

##### ASTM D1970/D1970M-15a, Standard Specification for Self-Adhering Polymer Modifies Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice dam Protection.

#### Canadian General Standards Board (CGSB)

##### CAN/CGSB-51.32-M77, Sheathing, Membrane, Breather Type.

#### Canadian Standards Association (CSA)

##### CSA A123.3-05 (R2015), Asphalt Saturated Organic Roofing Felt.

#### Health Canada/Workplace Hazardous Materials Information System (WHMIS).

#### Canadian Construction Materials Centre (CCMC)

## Submittals

### Submit proof of the manufacturer's CCMC Listing and listing number to the Consultant.

### Submit proof of the manufacturer's ISO 9001 9002 9003 registration and compliance to the Consultant.

### Manufacturer's Instructions: Provide to indicate special handling criteria, installation sequence, cleaning procedures and [\_\_\_\_\_\_].

## Product Data

### Submit product data in accordance with Section 01300 – Submittals.

### Submit WHMIS MSDS Material Safety Data Sheets. WHMIS acceptable to Labour Canada, and Health Canada for [ \_\_\_\_\_\_] .

### Submit product data sheets for insulation. Include:

#### Product characteristics.

#### Performance criteria.

#### Limitations.

## Shop Drawings

### Submit shop drawings in accordance with Section 01300 - Submittals.

### Indicate arrangements of sheets and joints, types and locations of fasteners and special shapes and relationship of panels to structural frame.

## Samples

### Submit samples in accordance with Section 01300 - Submittals.

### Submit duplicate, 300 mm x 300 mm samples of each sheet metal material.

## Mockups

### Submit mock ups in accordance with Section 01300 - Submittals.

### Fabricate 600 mm x 600 mm sample roofing panel using identical project materials and methods to include typical seam.

### Allow [24] hours for inspection of mock-up by the Consultant [     ] before proceeding with sheet metal flashing work.

## Measurement and Payment

*[Choose one of the following payment language provisions that best suits the individual project.*

*If this Section is not specifically referenced by an item in the Bid Form, please use the following language:*

### The work of this Section will not be measured separately for payment. All costs associated with the work of this Section shall be included in the Contract Price.

*OR If this Section is specifically referenced in the Bid Form, use the following language and identify the relevant item in the Bid Form:*

### All costs associated with the work of this Section shall be included in the price(s) for Item No(s). \_\_\_ in the Bid Form.

*If the work of this Section is to be measured and paid for by several different methods, please amend the standard wording given above to reflect the different methods of measurement and payment.*]

# PRODUCTS

## Sheet Metal Materials

### Zinc coated steel sheet: to ASTM A653/A653M-15, commercial quality, with Z275 coating, extra smooth surface, pre-finish as specified in 2.2, 0.91 mm minimum base metal thickness.

## Prefinished Steel Sheet

### Prefinished steel with factory applied polyvinylidene fluoride.

#### Class F1S, F2S .

#### [\_\_\_\_\_] colour to be selected by the Consultant from manufacturer's standard range.

#### Specular gloss: 30 units +/-5 in accordance with ASTM D523-14.

#### Coating thickness: not less than 22 [     ] micrometres.

#### Resistance to accelerated weathering for chalk rating of 8 colour fade 5 [     ] units or less and erosion rate less than 20% [     ] to ASTM D822/D822M-13 as follows:

##### Outdoor exposure period 2,500 hours.

##### Humidity resistance exposure period 5,000 hours.

## Accessories

### Isolation coating: alkali resistant bituminous paint.

### Plastic cement: *[Consultant to determine appropriate standard to replace withdrawn CAN/CGSB 37.5*].

### Underlay: Self adhering rubberized asphalt sheets to ASTM D1970/D1970M-15a and ASTM D412-06a(2013).

### Slip sheet: reinforced sisal paper or a heavy felt kraft paper.

### Rubber-asphalt sealing compound: to *[Consultant to determine appropriate standard to replace withdrawn CAN/CGSB 37.29]*.

#### Acceptable material: to ice and water shield manufacturer's specifications.

### Cleats: of same material, and temper as sheet metal, minimum 50 mm wide. Thickness same as sheet metal being secured.

### Fasteners: concealed to suit roof design and to allow for thermal movement.

### Washers: of same material as sheet metal, 1 mm thick with rubber packings.

### Touch-up paint: as recommended by sheet metal roofing manufacturer.

### [Snow fences], [ice deflectors].

*[Consultant to review the requirements for ice dams to contain sliding ice and snow from roof. Specify materials here.]*

## Fabrication

### Form individual pieces in the longest lengths possible. Make allowances for expansion at joints.

### Hem exposed edges on underside 12 mm, mitre and seal.

### Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.

### Apply minimum 0.2 mm dry film thickness coat of plastic cement to both faces of dissimilar metals in contact.

### Protect exposed metals against oxidization by back-painting with isolation coating where indicated in the Contract Documents.

# EXECUTION

## Installation

### Use concealed fastenings except where approved by the Consultant before installation.

### Provide underlay under sheet metal roofing. Secure in place and lap joints 100 mm minimum.

### Apply slip sheet over underlay to prevent bonding between sheet metal and felt. Secure with minimum anchorage and lap joints 50 mm minimum in direction of water flow.

### Install sheet metal roof panels using cleats spaced to manufacturer's specifications.

### Secure cleats with two fasteners each and cover with cleat tabs.

### Align transverse seams in adjacent panels.

### Flash roof penetrations with material matching roof panels, and make watertight.

### Form seams in direction of water-flow and make watertight.

### Perform soldering with well heated coppers, heat seam thoroughly and sweat solder through its full width.

### Clean and flux metals before soldering.

### Follow sheet metal manufacturer's recommendations for soldering procedures.

### As work progresses, neutralize excess flux with 5% to 10% washing soda solution, and thoroughly rinse. Leave work clean and free of stains.

## Standing Seam Roofing

### Roofing with standing seams [300], [     ] mm on centre. Panel face profile [     ].

### Fold lower end of each pan under 20 mm. Slit fold 25 mm away from corner to form tab where pan turns up to make standing seam. Fold upper end of each pan over 50 mm. Hook 20 mm fold on lower end of upper pan into 50 mm fold on upper end of underlying pan.

### Apply sheet metal roofing beginning at eaves. Loose lock pans to valley flashing and edge strips at eaves and gable rakes.

### Finish standing seams 25 mm high on flat surfaces and 12 mm high on curved surfaces. Bend up one side edge 40 mm and other 45 mm. Make first fold 6mm wide single fold and second fold 12 mm wide, providing locked portion of standing seam with 5 plies in thickness. Fold lower ends of seams at eaves over at 45 degree angle. Terminate standing seams at ridge and hips by turning down in tapered fold.

### Form valleys of sheets not exceeding 3 m in length. Lap joints 150 mm in direction of flow. Extend valley sheet minimum 15 mm under roofing sheets. At valley line, double fold valley and roofing sheets and secure with cleats spaced 450 mm o.c.

## Batten Seam Roofing

### Batten seam roofing with [600], [     ] mm panel face, profile [     ].

### Form cross seams with 20 mm fold under on lower end and 50 mm fold over on upper end. Slit folds in cross seams at each corner 25 mm in from batten to form tab. Hook 20 mm fold on lower end of pan into 50 mm fold on upper end of under-laying pan.

### Apply sheet metal roofing beginning at eaves.

### Place cover strips over battens, locking edges with flanges of pan malleted down against sides of battens. Cover batten ends with cap folded and locked into extensions of batten covers and vertical legs of pans.

### At intersections of roof slope with ridge of hip battens, turn up edges of roof pans against ridge or hip battens, and terminate in 12 mm horizontal flange at top of battens. Install cover strips over top of hip and ridge battens.

### Form valleys of sheets not exceeding 3 m in length. Lap joints 150 mm in direction of flow. Extend valley sheet minimum 150 mm under roofing sheets. At valley line, double fold valley and roofing sheets.

### At eaves without gutters, hook pan over with .91 mm thick edge strip. Extend edge strip up under metal roofing 100 mm and secure with nails at 100 mm o.c., 25 mm from upper end. At eaves with gutters, loose lock end of roofing pans into gutters.

### Install batten flush with gable unless otherwise detailed. Extend batten cover down exterior face and lock into edge strip.

## Gutters and Downspouts

### Form gutter and downspouts from same materials and finish used for metal roofing, to profiles indicated in the Contract Documents.

### Secure with support straps at 2,500 mm o.c. maximum.

### Seal water tight.

**END OF SECTION**