

Section 07 46 19F - Preformed Steel Siding

Part 1 General

1.1 SECTION INCLUDES

- .1 Requirements for the installation of preformed metal siding, soffit, and fascia.

1.2 RELATED SECTIONS

- .1 Section 01 11 00 – Summary of Work
- .2 Section 01 33 00 - Submittal Procedures.
- .3 Section 01 35 00 LEED Requirements.
- .4 Section 01 61 00 – Common Product Requirements.
- .5 Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
- .6 Section 01 78 00 -Closeout Submittals.
- .7 Section 01 7 4 11 – Cleaning.
- .8 Section 05 41 00 - Structural Metal Stud Framing.
- .9 Section 06 10 00 – Rough Carpentry.
- .10 Section 07 21 13 – Board Insulation.
- .11 Section 07 26 00 Air Barriers.
- .12 Section 07 62 00 Sheet Metal Flashing and Trim.
- .13 Section 07 92 00 - Joint Sealing.
- .14 Section 09 22 16 – Non-structural Metal Framing

1.3 REFERENCES

- .1 American National Standards Institute (ANSI).
 - .1 ANSI B18.6.4-99, Thread Forming and Thread Cutting Tapping Screws and Metallic Drive Screws.
- .2 American Society for Testing and Materials International, (ASTM).
 - .1 ASTM B117-16, Standard Method Of Salt Spray (Fog) Testing.
 - .2 ASTM 2244-15a, Standard Practice for Calculation of Colour Tolerances and Colour Differences from Instrumentally Measured Colour Coordinates.
 - .3 ASTM D522/D522M-13, Standard Test Methods for Mandrel Bend Test of Attached Organic Coating.
 - .4 ASTM D968-15, Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasion.
 - .5 ASTM D1005-95/2013), Standard Test Method For Measurement Of Dry-Film Thickness Of Organic Coatings Using Micrometers.

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- .6 ASTM D1308-02(2013) Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Finishes.
- .7 ASTM D7091-13, Standard Test Method for Non-destructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals.
- .8 ASTM D523, Standard Test Method for Specular Gloss.
- .9 ASTM D2247-15, Standard Practice For Testing Water Resistance of Coatings in 100% Relative Humidity.
- .10 ASTM D2369-10(2015)e1, Test Method for Volatile Content of Coatings.
- .11 ASTM D2794-93(2010), Standard Test Method For Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
- .12 ASTM D2832-92(2016), Standard Guide for Determining Volatile and Non-volatile Content of Paint and Related Coatings.
- .13 ASTM D3359-09e2, Standard Test Methods For Measuring Adhesion by Tape Test.
- .14 ASTM D3363-05(2011)e2, Standard Test Method For Hardness by Pencil Test.
- .15 ASTM D4214-07(2015), Standard Test Methods For Evaluating the Degree of Chalking of Exterior Paint Films.
- .16 ASTM D5116-10, Standard Guide For Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products.

- .3 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB-51.32-M77, Sheathing, Membrane, Breather Type.
 - .2 CAN/CGSB-93.4, Galvanized and Aluminum-Zinc Alloy Coated Steel Siding Soffits and Fascia, Prefinished, Residential.
 - .3 CGSB 93.5, Installation of Metal Residential Siding, Soffits and Fascia.
 - .4 CGSB 19-GP-5m

- .4 Canada Green Building Council (CaGBC):
 - .1 LEED Canada 2009 Rating System: LEED Canada for New Construction and Major Renovations. LEED Canada for Core and Shell Development. [Website: www.cagbc.org]

- .5 Canadian Standards Association (CSA International).
 - .1 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.

- .6 Environmental Choice Program (ECP).
 - .1 CCD-045-[95], Sealants and Caulking Compounds.

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- .7 SCAQMD South Coast Air Quality Management District, California State (SCAQMD):
 - .1 SCAQMD Rule #1168, June 2006

1.4 DESIGN

- .1 Siding shall be designed to withstand positive wind load of [] 1 kPa and negative load of [] 0.6 kPa at a maximum allowable deflection of [] [1/180] of span between attachments.
- .2 Indicate test data supporting the above requirements on shop drawing submission.

1.5 SUBMITTALS – ACTION AND INFORMATION

- .1 Product Data: Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.
 - .1 Submit two copies of WHMIS MSDS - Material Safety Data. Indicate VOC's for caulking materials during application and curing.
- .2 Shop Drawings:
 - .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Indicate dimensions, profiles, attachment methods, schedule of wall elevations, trim and closure pieces, [soffits, fascia, metal furring, and related work].
- .3 Samples:
 - .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Submit duplicate 300 mm samples of siding material, of colour and profile specified.
- .4 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation instructions.
- .5 Sustainable Design Submittals
 - .1 LEED Submittals: submit LEED submittal forms for Credit MR 4 in accordance with Section 01 32 16 LEED Submittal Forms and Section 01 35 18 LEED Requirements and the following:
 - .1 Recycled Content: provide listing of products incorporating recycled content. Include details of percentages of post- consumer and pre-consumer recycled content for materials and products. Indicate material and product costs.
 - .2 LEED Submittals: submit LEED submittal forms for Credit MR 5 in accordance with Section 01 32 16 LEED Submittal Forms and Section 01 35 18 LEED Requirements and the following:

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- .1 Regional Materials: provide evidence that project incorporates required percentage [20] [30] % of regional materials/products, showing their cost, distances from extraction to manufacture and manufacture to project site, and total cost of materials for project.

1.6 CLOSEOUT SUBMITTALS

- .1 Operation and Maintenance Data: Submit manufacturer's printed operation and maintenance literature in accordance with Section 01 78 00 – Closeout Submittals. Submit [2] copies for inclusion in the project O&M manual, [4] weeks prior to substantial performance of the work.
- .2 Warranty Documentation: Submit manufacturer's warranty documentation in accordance with Section 01 78 00 – Closeout Submittals. Submit [2] copies for inclusion in the project O&M manual, [4] weeks prior to substantial performance of the work.
- .3 Record Documentation: Submit record documentation in accordance with 01 78 00 – Closeout Submittals. Submit [2] copies for inclusion in the project record documents, [4] weeks prior to substantial performance of the work.
- .4 Sustainable Design Closeout Documentation: Submit sustainable design documentation in accordance with 01 78 00 – Closeout Submittals. Submit [2] copies, [4] weeks prior to substantial performance of the work.

1.7 QUALITY ASSURANCE

- .1 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .3 Pre-Installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.
 - .1 Convene pre-installation meeting two (2) week prior to beginning [work of this Section] [on-site installation], with [install contractor's representative] [Owner Representative] [Consultant] in accordance with [Section [01 32 16.06 - Construction Progress Schedule - Critical Path Method (CPM)]] [Section [01 32 16.07 - Construction Progress Schedule - Bar (GANTT) Chart]] to:

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- .1 Verify project requirements.
 - .2 Review installation and substrate conditions.
 - .3 Co-ordination with other building sub-trades.
 - .4 Review [manufacturer's] installation instructions and warranty requirements.
- .4 Manufacturer: All products and components from same manufacturer/supplier.
- .5 Sustainable Standards Certification: Sustainability Standards Certification:
- .1 Recycled Content: [provide listing of recycled content products used, including details of required percentages or recycled content materials and products, showing their costs and percentages of [post-consumer] [post-industrial] content, and total cost of materials for project].
 - .2 Regional Materials: provide evidence that project incorporates required percentage [10] [20] % of regional materials/products, showing their cost, distance from project to furthest site of extraction or manufacture, and total cost of materials for project.
- .6 Mock-ups: Mock-ups: construct mock-ups in accordance with Section [01 45 00 - Quality Control] and to requirements supplemented as follows:
- .1 Provide mock-up for evaluation of surface finishes and workmanship.
 - .2 Provide initial production units for job-site assembly with other materials for review and approval.
 - .3 Co-ordinate type and location of mock-ups with project requirements.
 - .4 Accepted units will be used as standard for acceptance of production units.
 - .5 Remove and replace units, which are not accepted.
 - .6 Do not proceed with remaining work until workmanship, colour, and finish are reviewed and approved by [Owner] [Consultant].
 - .7 Refinish mock-up area as new.
 - .8 Approved mock-up may [not] remain as part of finished work.
 - .9 Remove mock-up and dispose of materials when no longer required and when directed by [Owner] [Consultant].
- .7 Waste Management & Disposal
- .1 Separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .2 Divert used metal cut-offs from landfill by disposal

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- .1 Into the on-site metals recycling bin.
- .2 By removed for disposal at the nearest metal recycling facility.
- .3 Divert reusable materials for reuse at nearest used building materials facility.
- .4 Divert unused caulking, sealants, and adhesive materials from landfill through disposal at hazardous material depot.

1.8 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section [01 61 00 - Common Product Requirements] [with manufacturer's written instructions].
- .2 Delivery and Acceptance Requirements:
 - .1 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 Stack panel sheets tilted to provide water run-off.
 - .3 Store and protect siding from nicks, scratches, and blemishes.
 - .4 Replace defective or damaged materials with new.
- .4 Waste Management and Disposal:
 - .1 Separate waste materials for [reuse] [and] [recycling] in accordance with Section [01 74 19 - Management and Disposal.]

1.9 EXTENDED WARRANTY

- .1 Manufacturer's Extended Warranty:
 - .1 Provide a written guarantee, signed and issued in the name of the owner, covering the materials and finish of this section for 10 (ten) years and workmanship for a period of 2 (years) years from the date of substantial performance of the work.
 - .2 Repair or replace defective areas at no cost to the owner.

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Part 2 Products

2.1 ACCEPTABLE MANUFACTURER

- .1 Wayne Building Products:
 - .1 Edmonton: 12603 - 123 Street NW Edmonton, AB T5L0H9; Phone: 780.455.8929
Toll Free: 800.763.6378; Fax: 780.452.1186.
 - .2 Calgary: 2323 22 Street NE Calgary, AB T2E 8K8; Phone: 403.250.5844
Toll Free: 800.892.4144 Fax: 403-250-5846.
 - .3 Regina: 155-6th Ave East Regina, Sask. S4N5A6 Phone: 306.352.7377
Toll Free: 1.888.889.2963 Fax: 306.949.5353.
- .2 Alternative Manufacturer: No alternatives considered for this project.

2.2 DESCRIPTION

- .1 System-1: Directly Installation: Apply over building paper or air barrier membrane, on exterior grade gypsum board or exterior grade wood sheathing.
- .2 System 2: Furred Installation: Installation of metal furring over building paper or air barrier membrane, on exterior grade gypsum board or exterior grade wood sheathing.
- .3 System 3: Insulated: Installation of metal furring over building paper or air barrier membrane, rigid board insulation between z-bars, on exterior grade gypsum board or exterior grade wood sheathing.
- .4 System 4: Rated: Installation of metal z-bars over building paper or air barrier membrane, mineral fibre insulation between furring, on type-x exterior grade gypsum board.

2.3 MATERIALS

- .1 Exterior Sheet: Base metal with Z275 zinc coating, factory prefinished to [Consultant's] [Owner's] selection.

2.4 SIDING/ CLADDING COMPONENTS

- .1 Metal Panel Siding: Lux Panel - Roll-formed, galvanized steel, to custom profile, for horizontal or vertical installations:
 - .1 Base Metal Thickness: 0.559 mm (24 gauge).
 - .2 Exposed Face: 100 mm (4 inch).
 - .3 Profile: .438 mm deep, 100.88 width, bevelled face edges, preformed interlocking joints, fastener holes pre-punched.

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Metal Panel Siding: Lux Panel - Roll-formed, galvanized steel, to custom profile, for horizontal or vertical installations:

- .1 Base Metal Thickness: 0.559 mm (24 gauge).
- .2 Exposed Face: 152 mm (6 inch).
- .3 Profile: .438 mm deep, 152.88 width, bevelled face edges, preformed interlocking joints, fastener holes pre-punched.

2.5 FINISHES

- .1 Finish: Prefinished, coil coated. 1.0 mil fluoropolymer (PVDF)
- .2 Colour:
 - .1 Natural Wood: [Cedar] [Dark Ash] [Light Ash] [Pecan] [Espresso] [Tigerwood] [Driftwood] [Willow] [Knotty Ebony] [Knotty Redwood] [Dark Cherry] [Fir] [Walnut] [Saddle].
 - .2 Textures: [Textured Coffee] [Textured Rosewood] [Textured Black Onyx].
 - .3 Metals: [Aged Copper] [Silver Metallic] [Dark Zinc] [Rustic Red] [Champagne Metallic] [Copper Penny] [Weathered Zinc] [Starlight] [Cosmic]
 - .4 Solid: [Regal White] [Parchment] [Sierra Tan] [Mocha] [Weathered Copper] [Bronze] [Dark Bronze] [Terra Cotta] [Colonial Red] [Retro Red] [Hemlock Green] [Forest Green] [Hartford Green] [Black] [Twilight Blue] [Regal Blue] [Old Town Grey] [Old Zinc Grey] [Slate Grey] [Zinc Grey}
 - .5 [Custom colour].
 - .6 [Colour as selected by [Owner] [Consultant].
- .3 Exposed Metal Trim:
 - .1 Composition: Match to metal siding panel.
 - .2 Finish/Colour: Match to metal siding panel.
 - .3 Base Metal Thickness: 0.559 mm (24 gauge).
 - .4 Shapes: Base Trim, J Channel, Top J Channel Insert, Hidden Closure, Outside Corner, Inside Corner, Joiner J, Drip Cap, Window Batton, Open Outside Corner, Open Inside Corner, Bottom J Receiver, Snap-T Outside Corner, Two Piece J-Channel, Joiner J Insert, Snap-T Inside Corner, Two Piece Joiner J.
- .4 Soffit:
 - .1 Colour: [custom colour] [colour match to wall panel].
 - .2 Profile: flat sheet 'V' crimped for stiffness, vents preformed with elongated slits and small perforations. Vented 0.1 m² of opening for every 30 m² of building area.
 - .1 Pattern: plain surface.

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- .3 Thickness: Match to metal siding panel, 0.559 mm.
- .5 Fascia and exposed trim:
 - .1 Colour: [custom colour] [colour match to wall panel].
 - .2 Profile: [custom] [manufacturer's standard] as indicated.
 - .3 Pattern: [plain] [pattern] surface.
 - .4 Base Metal Thickness: 0.559 mm (24 gauge).
 - .5 Profile: flat sheet "V" crimped for stiffness, preformed with elongated slits and small perforations.

2.6 FASTENERS

- .1 Screws: ANSI B18.6.4. Purpose made [aluminum alloy] [stainless steel], [cadmium plated steel].

2.7 JOINT SEALANTS

- .1 Sealants: Section 07 92 00 – Joint Sealants.
- .2 Sealant: [one component acrylic to CGSB 19-GP-5M:
 - .1 [two component polysulphide to CAN/CGSB-19.24]
 - .2 [one component silicone to CAN/CGSB-19.18]
 - .3 [VOC content compliant with SCAQMD Rule #1168, June 2006].
- .3 Sealants: [____].
 - .1 Test for acceptable VOC emissions in accordance with ASTM D2369 and ASTM D2832.

2.8 MEMBRANE

- .1 Membrane: Building paper, #15 asphalt felt to CSA A123.3.
- .2 Membrane: to CAN2-51.32, [single ply] [laminated] [spunbound olefin] type [coated] [impregnated] [as indicated].
 - .1 Acceptable Material: [Environmental Choice Certification Program ECP-69] [____].

2.9 INSULATION

- .1 Refer to Section [07 21 13 – Board Insulation.]

2.10 FURRING

- .1 Sub-Girt:
 - .1 Galvanized steel to ASTM A653/A653M.
 - .2 Grade 230 with Z275 zinc coating.
 - .3 Minimum Thickness: 1.21 mm base metal thickness.

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- .2 Size/Shape: Custom, to accommodate insulation thickness.
- .3 Furring Channel:
 - .1 Galvanized steel to ASTM A653/A653M.
 - .2 Grade 230 with Z275 zinc coating.
 - .3 Minimum Thickness: 1.21 mm base metal thickness.
 - .4 Size/Shape: [Custom], [12.7mm] [18mm] [25 mm] depth, hat channel shape.

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 EXAMINATION

- .1 Confirm acceptability of wall sheathing of soundness, measurement and flatness.
- .2 Verify that building framing members are ready to receive siding system.

3.3 PREPARATION

- .1 Protect siding surfaces with isolation coating from concrete, mortar, plaster or other cementitious surfaces.

3.4 CONTROL AND EXPANSION JOINTS

- .1 General: Form control or expansion over and in alignment with building control or expansion joints.
- .2 Install where and as indicated
- .3 Fabricate custom form joint assembly from same material as preformed metal siding.

Part 4 Execution

4.1 INSTALLATION - GENERAL

- .1 Install cladding in accordance with manufacturer's written instructions.

4.2 MEMBRANE INSTALLATION

- .1 Install membrane on exterior sheathing horizontally by [stapling] [nailing].
 - .1 Lap horizontal edges minimum 75 mm; vertical edges minimum 150 mm.

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- .2 Install two [single] [double] layer application.

4.3 SUB- GIRT INSTALLATION

- .1 Install Sub-girt:
 - .1 Install metal girts [horizontally] [vertically].
 - .2 Mechanically anchor furring to framing at [1200 mm] centers.

4.4 FURRING INSTALLATION

- .1 Install Furring:
 - .1 Install metal furring [horizontally] [vertically].
 - .2 Mechanically anchor furring to framing at [1200 mm] centers.

4.5 INSTALLATION

- .1 Install continuous starter strips, inside [and outside] corners, edgings, soffit, drip, cap, sill and window/door opening flashings as indicated.
- .2 Install control and expansion joints:
 - .1 Where indicated,
 - .2 Use stock or custom break-shape components to form joints
 - .3 Mechanical fasten to allow for joint movement.
 - .4 Fill joint with rod and sealant designed to meet the designed joint movement limits.
- .3 Install outside corners, fillers and closure strips with carefully formed and profiled work.
- .4 Install siding [and attachments] [sequentially] [from sill up], to manufacturer/fabricators written instructions.
- .5 Attach components to allow for thermal movement.
- .6 Install soffit and fascia cladding as indicated.
- .7 Maintain joints in exterior cladding, true to line, tight fitting, hairline joints.

4.6 SEALANT INSTALLATION

- .1 Apply joint sealant at junctions with adjoining work with sealant. Do work in accordance with Section [07 92 00 - Joint Sealing].

4.7 CLEANING

- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.
- .2 Wash interior and exterior surfaces with solution recommended by manufacturer.
- .3 Remove excess sealant as recommended by manufacturer.

END OF SECTION