



SECTION 07 41 13

STANDING SEAM METAL ROOF PANELS – CRS38

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes:

1. Factory-formed standing seam metal roof panels (CRS38 profile).
2. Concealed clip fastening system.
3. Flashings, trims, ridge caps, valleys, closures, and related sheet metal components.
4. Self-adhered underlayment membrane.
5. Ventilation/drainage mat.
6. Snow retention system (where specified).

B. Related Sections:

- 07 21 00 – Thermal Insulation
 - 07 27 00 – Air Barriers
 - 07 26 00 – Vapour Retarders
 - 07 92 00 – Joint Sealants
 - 05 12 00 – Structural Steel
 - 05 31 00 – Steel Decking
 - 06 10 00 – Rough Carpentry
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1.02 REFERENCES

Comply with latest editions of:

- National Building Code of Canada (NBC)
 - CSA S136 – Design of Cold Formed Steel Structural Members
 - ASTM A653/A653M – Zinc-Coated (Galvanized) Steel Sheet
 - ASTM A792/A792M – Aluminum-Zinc Alloy Coated Steel Sheet
 - ASTM E1592 – Structural Performance of Sheet Metal Roof Systems (Wind Uplift)
 - ASTM E1646 / ASTM E1680 – Water Penetration of Exterior Metal Roof Panel Systems
 - CAN/ULC S107 – Fire Tests of Roof Coverings
 - CSSBI 10M and 20M
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1.03 SYSTEM DESCRIPTION

A. Provide complete standing seam metal roofing system designed to:

1. Accommodate structural deflection and thermal movement from -40°C to +80°C.
2. Resist factored wind uplift pressures as determined in accordance with NBC for project location.
3. Prevent water infiltration under design wind conditions.
4. Maintain structural integrity, coating performance, and watertightness without distortion, fastener withdrawal, or panel disengagement.

B. System performance shall be validated by testing in accordance with ASTM E1592. Provide tested assembly data upon request.

C. Fire Classification:

Roof assembly shall achieve classification in accordance with CAN/ULC S107 where required by Code.

1.04 SUBMITTALS

A. Product Data: Manufacturer's technical data for panels, clips, fasteners, membrane, drainage mat, and accessories.

B. Shop Drawings: Indicate:

- Panel layout and seam direction

- Clip type and spacing
- Fastener types
- Flashing and trim details
- Snow retention layout (if applicable)
- Expansion provisions

C. Samples: 200 mm x 200 mm panel samples showing profile, finish, and colour.

D. Engineering: Submit confirmation that system meets project-specific wind uplift loads when required.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Minimum five (5) years documented experience installing standing seam systems of similar scope and complexity.

B. Manufacturer Qualifications: Minimum five (5) years production experience manufacturing similar profiles.

1.06 WARRANTY

A. Installer Warranty: Two (2) years against defects in workmanship.

B. Manufacturer Warranties: Provide manufacturer's written warranties issued in the Owner's name covering the following:

1. **Finish Warranty:** Minimum forty (40) years for film integrity (peeling, checking, cracking, blistering) and for colour fade and chalk within manufacturer's published limits for the specified coating system.
2. **Substrate/Perforation Warranty:** Minimum forty (40) years against perforation due to corrosion of the metal sheet, subject to manufacturer's standard terms, exclusions, and environmental limitations.
3. **Accessory Components:** Minimum forty (40) years for clips, fasteners, closures, and related components supplied under this Section.
4. **Weathertightness Warranty (if offered):** Provide manufacturer's weathertightness warranty where available for the specified system and installation scope.

PART 2 – PRODUCTS

2.01 MANUFACTURER

CRS38 Standing Seam Metal Roof Panel as manufactured by CR Systems or approved equivalent.

2.02 ROOF PANELS

A. Profile:

- 38 mm high standing seam
- 406 mm panel width
- Single-lock 90° seam
- Concealed clip system
- Architectural (non-structural) panel requiring solid substrate

B. Material:

1. Minimum 0.61 mm (24 gauge) steel.
2. Coating:
 - Z275 (G90) galvanized to ASTM A653/A653M, OR
 - AZ150 Galvalume to ASTM A792/A792M.

C. Finish:

- SMP (Silicone Modified Polyester), or
- PVDF
- Colour: As selected by Consultant/Architect.

D. Fabrication:

- Factory roll-formed panels.
- Continuous lengths as shown on drawings.
- Designed to allow thermal expansion and contraction without buckling or seam disengagement.

E. Oil Canning:

Minor surface waviness inherent in light-gauge metal shall not be cause for rejection.

2.03 CLIPS AND FASTENERS

A. Provide concealed sliding seam clips designed to allow full thermal movement of panels without distortion or loss of engagement.

B. Clips:

1. Type and gauge as required by manufacturer for CRS38 profile and project design loads.
2. Minimum corrosion protection: Z275 galvanized coating.
3. Clip spacing: As required to meet project-specific wind uplift loads and tested assembly requirements.

C. Fasteners:

1. Type and size as required by manufacturer for substrate and design loads.
 2. Corrosion-resistant stainless steel or long-life coated fasteners compatible with panel material and environmental exposure.
 3. No exposed fasteners permitted unless specifically detailed and accepted by Consultant.
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2.04 SUBSTRATE

A. Solid deck required.

B. Minimum 15 mm (5/8") exterior grade plywood conforming to CSA O121 or CSA O151.

C. Deck shall be installed to resist project wind uplift loads and meet minimum deflection criteria of L/240.

2.05 UNDERLAYMENT

A. Self-adhered high-temperature SBS modified bitumen membrane suitable for use under metal roofing.

B. Minimum service temperature rating: 120°C.

C. Install in accordance with manufacturer's written instructions.

D. Provide full coverage membrane at eaves, valleys, and penetrations as required by NBC.

Acceptable Product: Platinum HTB by FT Synthetics (by CR Systems) or approved equivalent.

2.06 DRAINAGE / VENTILATION MAT

A. Full coverage 7.6 mm drainage/ventilation mat installed between membrane and metal panels.

B. Provide airflow capacity minimum 170 cm² per linear metre at ridge when used with vented closures.

Acceptable Product: Keene Driwall CDR Vent (by CR Systems) or approved equivalent.

2.07 FLASHINGS AND TRIMS

A. Fabricate from same material and finish as roof panels.

B. Include:

- Eave starter
 - Gable trim
 - Valleys
 - Ridge caps
 - Parapet flashings
 - Closures (solid or vented as required)
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2.08 SNOW RETENTION

A. Where required, provide engineered snow retention system suitable for standing seam roofing.

B. System shall be clamp-on type; no penetrations through panels or seams permitted.

C. Provide layout and attachment design based on project snow loads in accordance with NBC.

D. Acceptable Product: S-5! ColorGard by S-5! Metal Roof Innovations, or approved equivalent.

2.09 SEALANTS

- A. Neutral cure, non-corrosive, high-temperature sealants compatible with metal roofing.
 - B. Install in accordance with Section 07 92 00 and sealant manufacturer's written instructions.
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PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify substrate is dry, structurally sound, properly fastened, and ready to receive roofing system.
 - B. Do not proceed until unsatisfactory conditions have been corrected.
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3.02 PREPARATION

- A. Coordinate roofing installation with drainage systems, parapets, copings, wall air barriers, and adjacent materials.
 - B. Isolate dissimilar metals to prevent galvanic corrosion.
 - C. Prevent direct contact between roof panels and pressure-treated wood unless separated by approved membrane.
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3.03 INSTALLATION

- A. Install self-adhered membrane over properly prepared and primed substrate; provide required laps, seals, and tie-ins.
- B. Install drainage/ventilation mat in accordance with manufacturer's instructions; maintain airflow continuity and avoid compression.
- C. Install starter trims, flashings, and closures prior to panel installation as required by system sequencing.
- D. Install panels in accordance with manufacturer's written instructions and approved shop drawings, including:
 - 1. Concealed sliding clip installation and spacing as required for wind uplift resistance.
 - 2. Formation of single-lock 90° standing seam for CRS38 profile.

3. Provisions for unrestricted thermal movement at eaves, ridges, and transitions.

E. Install flashings, ridge assemblies, hips, valleys, and closures to provide continuous watertight system.

F. Install snow retention system where specified in accordance with manufacturer's layout and instructions.

G. Remove protective film immediately after installation; do not allow film to remain exposed beyond manufacturer limits.

H. No exposed fasteners permitted unless specifically detailed and accepted by Consultant.