

CRS38 STANDING SEAM STEEL ROOF INSTALLATION MANUAL

Product: CRS38 Standing Seam Steel Roofing System

Manufacturer: CR Systems

Application: Roof

Document Type: Installation Manual

Revision: 1.0

DOCUMENT PURPOSE

This manual provides installation requirements and guidelines for the CRS38 mechanically seamed standing seam steel roof system manufactured by CR Systems.

This document is intended for use by qualified and experienced roofing contractors familiar with standing seam metal roofing systems.

This manual:

- Defines minimum installation requirements
- Identifies approved materials and methods
- Clarifies responsibilities between CR Systems and the installer

This document does not replace:

- Project-specific shop drawings
 - Engineered details
 - Applicable building codes or regulations
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INSTALLER RESPONSIBILITY

The installing contractor is responsible for:

- Verifying site conditions prior to installation
- Confirming substrate suitability and readiness
- Ensuring structural adequacy of the roof assembly
- Compliance with all applicable building codes and safety regulations

- Proper installation of all panels, clips, fasteners, membranes, sealants, and flashings

CR Systems supplies materials only and does not provide installation services or site supervision.

SAFETY NOTICE

Standing seam steel roof installation involves work at height and the handling of long metal panels.

All work must be performed in accordance with applicable occupational health and safety regulations.

The installer is responsible for providing appropriate safety equipment and procedures.

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SECTION 1 – INTRODUCTION

This manual provides general installation guidelines for the CRS38 mechanically seamed standing seam steel roof system manufactured by CR Systems.

It is intended for use by qualified and experienced roofing contractors familiar with standing seam metal roofing systems. This document is not a substitute for professional judgment, project-specific shop drawings, or engineered details.

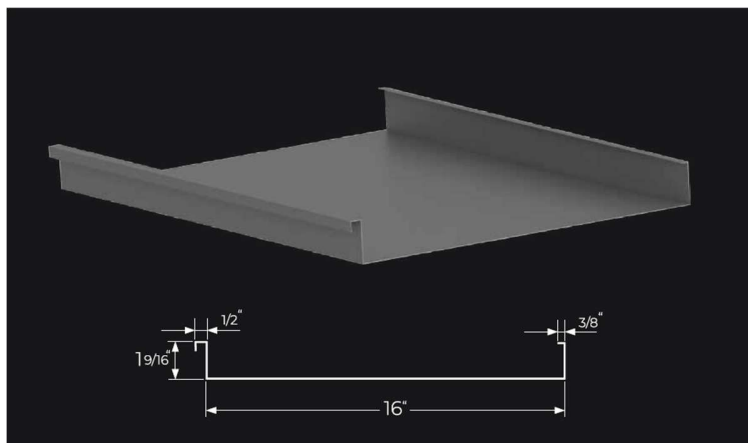
All installations must comply with:

- Applicable building codes
- Project specifications
- Approved shop drawings
- Manufacturer instructions for all materials used

SECTION 2 – PRODUCT DESCRIPTION

The CRS38 is a mechanically seamed standing seam steel roofing system manufactured by CR Systems.

See Figure 2.1 for a typical CRS38 panel profile.



The system has the following general characteristics:

- Panel coverage: 16 inches (406 mm)
- Seam height: 1.5 inches (38 mm)

- Seam type: Mechanically seamed (single-lock or double-lock)
- Application: Roof
- Panel length: No fixed maximum (subject to design, handling, and installation considerations)

CRS38 panels are designed to accommodate thermal expansion and contraction through the use of fixed and expansion clips, as specified in this manual.

Figure 2.1 – CRS38 Panel Profile

CRS38 mechanically seamed standing seam steel panel showing typical seam geometry and panel coverage.

SECTION 3 – SCOPE OF MANUAL & RESPONSIBILITIES

3.1 Scope

This manual covers roof applications only for the CRS38 system.

Wall applications are not included and must be addressed by separate documentation or details.

This manual provides general installation guidance and does not cover every possible condition or project-specific requirement.

3.2 Installer Responsibility

The installing contractor is fully responsible for:

- Verifying site conditions prior to installation
- Confirming substrate suitability and readiness
- Ensuring structural adequacy of the roof assembly
- Compliance with all applicable building codes and regulations
- Proper installation of all panels, clips, fasteners, membranes, and flashings

CR Systems does not provide installation services or site supervision.

3.3 CR Systems Scope of Supply

CR Systems' role is supply only.

CR Systems will supply:

- CRS38 standing seam roof panels
- CR Systems–supplied clips and fasteners
- Roof membranes and underlayment
- Pre-formed or custom flashings
- Standard CR Systems details where applicable

For roof penetrations, CR Systems will supply:

- Custom colour-matched steel pipe flashings, or
- Rubber pipe boots

All materials supplied by CR Systems must be installed in accordance with this manual, project documents, and applicable codes.

Final coordination, sequencing, and installation of panels, membranes, flashings, and penetrations remain the responsibility of the installer unless otherwise specified in writing.

3.4 Limitations

CR Systems is not responsible for:

- Improper installation
- Field modifications not approved by CR Systems
- Failure to follow this manual, project documents, or applicable codes
- Conditions beyond CR Systems' control, including site conditions and workmanship

SECTION 4 – SAFETY REQUIREMENTS

4.1 General

All work must be performed in accordance with applicable occupational health and safety regulations.

The installing contractor is responsible for:

- Providing and enforcing appropriate safety procedures
- Ensuring workers are properly trained and equipped

- Complying with all federal, provincial/state, and local safety regulations

4.2 Personal Protective Equipment (PPE)

At a minimum, installers must use:

- Safety helmets
- Cut-resistant gloves
- Safety footwear
- Eye protection

Additional PPE may be required depending on site conditions and project requirements.

4.3 Fall Protection

Standing seam roof installation involves work at height.

The installer is responsible for:

- Providing appropriate fall protection systems
- Ensuring fall protection is installed and used correctly
- Complying with all applicable fall protection regulations

CR Systems does not supply fall protection equipment.

4.4 Material Handling & Storage

Panels and accessories must be handled in a manner that prevents damage, bending, or distortion.

Improper handling can result in panel damage, oil canning, or installation issues.

4.4.1 Panel Carrying Method

CRS38 panels must be carried using the correct handling method, as shown in Figure 4.1.

Panels must be carried on their side, with the flat portion of the panel perpendicular to the ground.

Panels must be supported from the bottom.

Panels must not be carried by the seam.

4.4.2 Number of Handlers

The number of people required to move and handle a panel must be based on panel length.

Under 6 feet: 1 handler
 7 to 15 feet: 2 to 3 handlers
 16 to 30 feet: 3 to 4 handlers
 31 to 45 feet: 4 to 5 handlers
 Over 45 feet: 4 or more handlers, using extreme caution

Where more than one handler is used:

- Handlers must be spaced 10 to 12 feet apart
- The first and last handlers must be approximately 5 feet from each end

4.4.3 Handling Restrictions

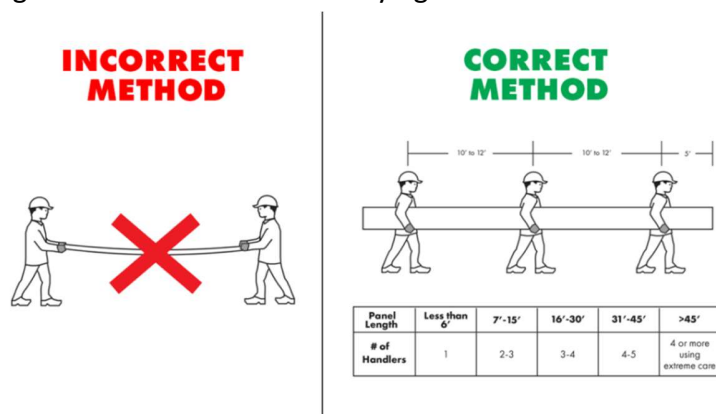
Panels must not be dragged across each other or abrasive surfaces.

Panels must not be allowed to sag between handlers.

Panels must not be twisted or flexed during handling.

Damaged panels must not be installed.

Figure 4.1 – Correct Panel Carrying Method



SECTION 5 – GENERAL SYSTEM REQUIREMENTS

5.1 Approved Components

Only CR Systems–supplied panels, clips, fasteners, membranes, and sealants are approved for use with the CRS38 standing seam roof system.

Substitution of components is not permitted unless approved in writing by CR Systems.

5.2 Thermal Movement

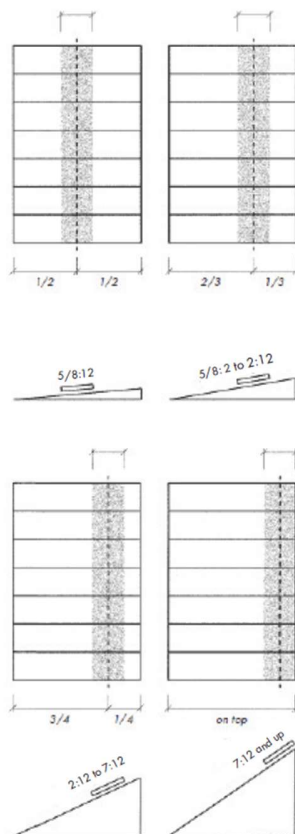
CRS38 panels are designed to accommodate thermal expansion and contraction through the use of fixed and expansion clips.

Panels under 30 feet: fixed clips

Panels over 30 feet: combination of fixed and expansion clips

Clip placement must allow panels to expand and contract freely without inducing stress.

Figure 5.1 – Clip Placement for Thermal Movement



5.3 Roof Slope Requirements

Minimum roof slope: 1:12

For slopes between 1:12 and 3:12, additional requirements apply and are addressed in Section 12.

5.4 Mechanical Seaming

All CRS38 roof installations require mechanical seaming.

Panels may be single-lock (90°) or double-lock (180°) seamed.

Specific seamer types and pass sequences are not prescribed and remain the responsibility of the installer.

5.5 Temperature Considerations

There are no temperature restrictions for panel installation.

Sealants must be installed in accordance with the sealant manufacturer's temperature requirements.

5.6 Coordination With Other Trades

The installer is responsible for coordinating CRS38 installation with:

- Substrate preparation
- Underlayment and membrane installation
- Flashings, penetrations, and roof accessories

Installation must not proceed until all required preceding work is complete and verified.

SECTION 6 – SUBSTRATE REQUIREMENTS

6.1 General

The roof substrate must be structurally sound, clean, dry, and properly fastened prior to installation.

6.2 Approved Substrates

Minimum approved substrates:

- 9/16 inch OSB
- 1/2 inch plywood

Thicker substrates are acceptable.

All CR Systems supplied screws are tested and approved for use into these minimum substrates.

6.3 Substrate Conditions

Substrates must be free of oil, dirt, moisture, frost, or debris and installed in accordance with applicable building codes.

Warped or uneven substrates must be corrected prior to installation.

6.4 Tolerances

Standing seam systems require a flat and consistent substrate.

Uneven substrates may result in panel distortion, oil canning, or improper seaming.

SECTION 7 – UNDERLAYMENT & MEMBRANE REQUIREMENTS

7.1 General

A high-temperature roof membrane is required for all CRS38 roof installations.

7.2 Standard Installations

For roof slopes of 3:12 and greater:

- Install a high-temperature membrane
- Full deck coverage is required

7.3 Low-Slope Installations (1:12 to 3:12)

For roof slopes between 1:12 and 3:12:

- Double peel-and-stick membrane is required
- Membrane must be continuous with fully sealed laps

7.4 Membrane Installation Responsibility

Membranes supplied by CR Systems must be installed in accordance with this manual and the membrane manufacturer's instructions.

SECTION 8 – PANEL LAYOUT & PREPARATION

Proper layout is critical to system performance and appearance.

Installers must:

- Review approved shop drawings
- Verify roof dimensions
- Confirm panel orientation

A straight and square starting line must be established.

Errors at the starting panel will carry through the installation.

SECTION 9 – CLIP INSTALLATION

Only CR Systems supplied clips and fasteners are permitted.

Clip types:

- Fixed clips
- Expansion clips

Panels under 30 feet require fixed clips.

Panels over 30 feet require fixed and expansion clips.

Minimum roof clip spacing is 18 inches on center.

Clip spacing must be reduced where required by high wind loads or project-specific engineering.

SECTION 10 – PANEL INSTALLATION

Preferred installation sequence:

1. Install panel
2. Install clips
3. Snip clips
4. Seam panel

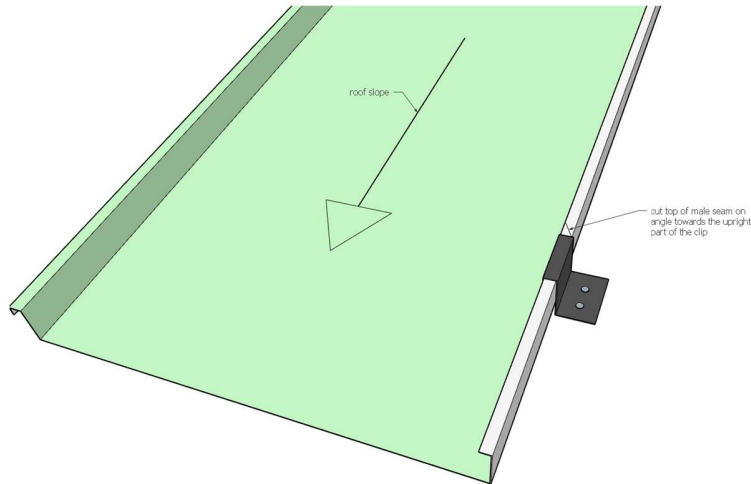
Panels must not be left unsecured or unseamed.

Snipped Clip Requirement:

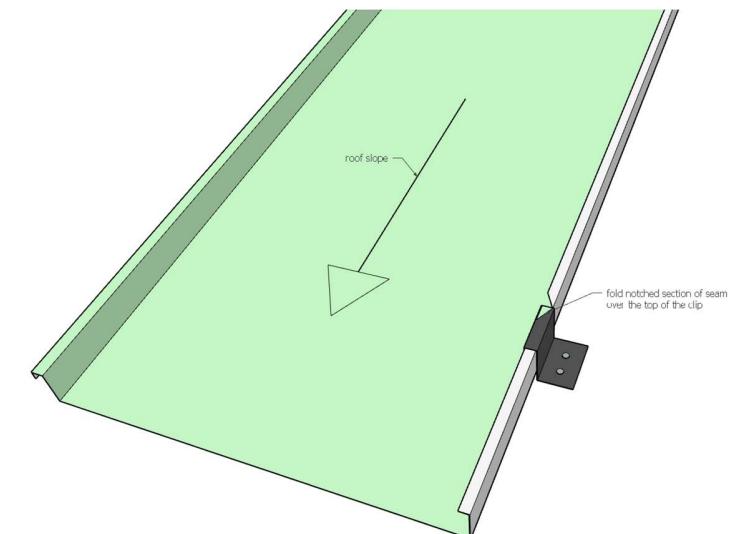
Two clips must be snipped for every 10 feet of panel length.

10.6 Snipped Clip Procedure

Step 1: Cut the top of the male seam on an angle toward the upright portion of the clip.



Step 2: Fold the notched section of the male seam over the top of the clip to restrain panel movement.



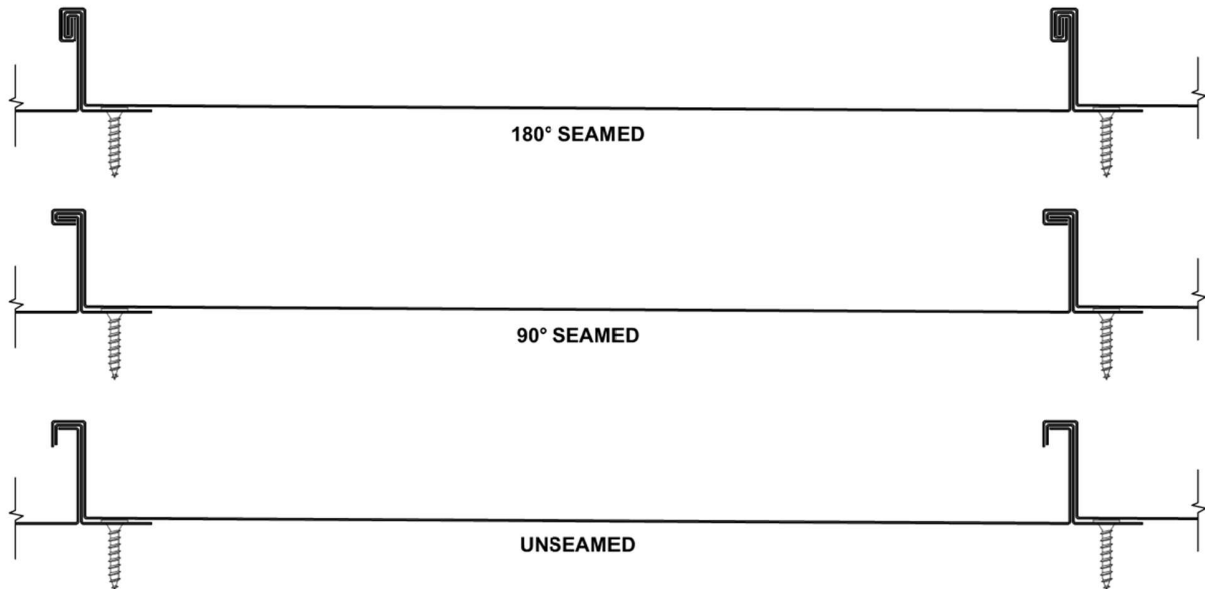
C-clamps may be used temporarily to prevent sliding or correct out-of-square gables and must be removed prior to final seaming.

SECTION 11 – MECHANICAL SEAMING

All CRS38 roof installations require mechanical seaming.

Seams must be continuous, uniform, and fully closed.

Figure 11.1 – Seam Conditions



SECTION 12 – LOW-SLOPE INSTALLATIONS (1:12 TO 3:12)

Double peel-and-stick membrane is required.

Sealant:

- Supplied by CR Systems
- Must be applied inside the panel seam
- Must be applied under and over clip locations
- Must not interfere with seam formation

Mechanical seaming is required.

SECTION 13 – END LAPS

End laps are permitted when properly detailed.

End laps must:

- Follow project-specific approved details
 - Allow for thermal movement unless otherwise detailed
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SECTION 14 – PENETRATIONS & FLASHINGS

CR Systems supplies flashings.

Installer is responsible for proper installation and integration.

Penetrations must be fully sealed and integrated with the membrane system.

SECTION 15 – QUALITY CONTROL

Installer must verify:

- Seam closure
- Clip installation and restraint
- Membrane continuity
- Flashing integration

Issues must be corrected as they occur.

SECTION 16 – MAINTENANCE & LIMITATIONS

Periodic inspection and maintenance are required.

CR Systems is not responsible for damage caused by:

- Improper installation
- Unauthorized modifications
- Lack of maintenance
- Conditions beyond its control