Architectural Standing Seam roof panels require a solid substrate to transfer live loads to the structure. Solid substrates assemblies can include, but are not limited to:

- Built up roof systems comprised of a steel deck, metal Z bars and rigid insulation.
- Wood sheathing deck, wood strapping with infilled rigid insulation.
- Direct to wood sheathing deck with underlayment.

Westman Steel recommends CSA Standard exterior grade wood sheathing acceptable to local building codes based on project location, building category and design loads. Roofs with high wind or snow loads may require a minimum of 16mm (5/8") Plywood. If 12.7mm (1/2") Plywood or 11mm (7/16") OSB is acceptable for design loads, then fastener pull out strength must be checked with the fastener manufacturer for correct use based on application. It is the installers responsibility to ensure the correct sheathing and applicable fasteners are suitable for intended use and design loads prior to installation.

Rigid insulation must have a high compression strength capable of handling expected loads applied to the roof.

Underlayments can include full peel and stick membrane types as well as synthetic slip sheet underlayment. Both types of products must be designed for installation under metal roofs to ensure they can perform under the range of temperatures that the underside of a roof panel can experience. Consult with Westman Steel for information on underlayment products based on installation.

IT IS THE RESPONSIBILITY OF THE DESIGN PROFESSIONAL OR PROFESSIONAL ENGINEER TO ENSURE ALL ROOF SUPPORTS, SUBSTRATES, FASTENERS AND MEMBRANES ARE SUITABLE FOR STRUCTURAL INTEGRITY AND LOCAL BUILDING CODE COMPLIANCE.

ATTACHMENT METHODS AND SYSTEMS

Mechanical Lock panels are designed as a standing seam roof system that requires the seams between panels to be mechanically seamed (folded) to engage the roof clips. Snap Seam panels are designed to be installed with fixed clip and panel seams snapped into place. Snap-Lok panels are manufactured with a pre-punched concealed fastener flange and panels seams snapped into place. Snap Seam and Snap-Lok do not require mechanical seaming.

Mechanical Lock and Snap Seam roof panels are designed as a floating roof system with concealed clips and exposed fasteners at either the low eave or ridge location only.

The purpose of the exposed fasteners are to fix the panel at one end to prevent panels from sliding under snow loads (drag). It is important to only fasten at the eave or the ridge, not both, this will still allow for expansion along the panel length. The preferred method for Mechanical Lock panels is to fix at the ridge.

The purpose of clips are to anchor the roof panel edges when they are seamed, or engaged in the case of Snap Seam. Clips are a major component for concealed fastened metal roofs. Clips are installed with appropriate fasteners to the structure and can be floating or fixed.

FLOATING CLIPS

Floating clips are used on long run (>30 feet) panels and are designed for greater thermal expansion and contraction than fixed clips. As the floating clips are intended to allow the roof to move, care must be taken on large area roofs to ensure fasteners at the endlaps, ridge, and gables, do not restrict movement of the roof panels.

FIXED CLIPS

Fixed clips do not expand or contract and are used on shorter panel lengths (<30 feet) that are less likely to experience thermal expansion and contraction.

SNAP SEAM FIXED CLIP

Snap Seam Fixed Clips are used for Snap Seam roof panels without requiring mechanical seaming. This fixed clip still allows for thermal movement as the panels are able to move independent of each other.

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