



BEHLEN.

Building Systems

ZL-24 Standing Seam Roof



Good Iron. GREAT Experience!

Serious Performance Through Superior Design

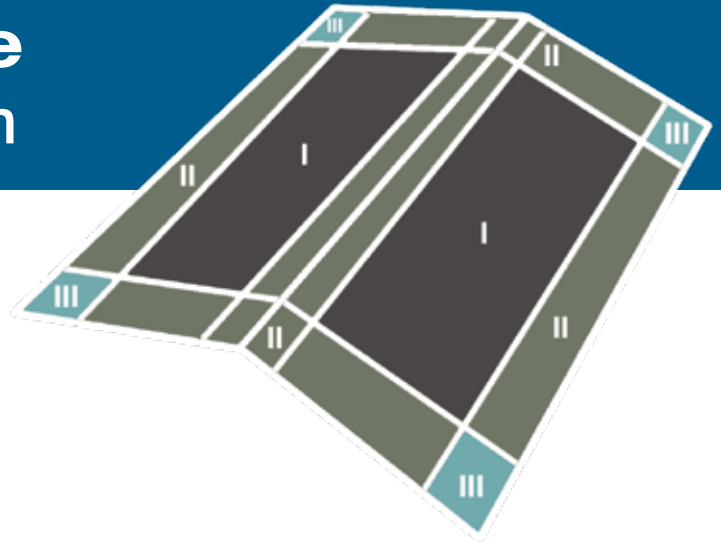
ZL-24® Standing Seam Roof System

The patented Behlen ZL-24® Roof System uses the latest technology to economically meet today's code requirements and your specifications. It is the roof system designed for the future with techniques and components that outperform other roof systems.

Recent changes in wind uplift resistance requirements and testing protocols have called for a new approach to roof performance. Behlen has specifically designed the ZL-24® to meet and exceed these new requirements. The versatile seaming system of the ZL-24® allows for the ultimate flexibility in roof design and installation.

- **Zonal Lock® seaming system** accommodates the various wind load zones.
- **Three seaming options** meet precise roof wind loading requirements for each roof zone.

These features add up to a quality, reliable roof system over your building and create savings in cost and time for you and your customers' projects.



Standard industry wind tunnel tests on various roof configurations have shown that the wind loading on a roof is divided into three zones:

Zone I: Lowest Load

- Main field of the roof
- *About 80% of total roof surface*

Zone II: Intermediate Load

- Along the edges of the roof
- *About 15% of total roof surface*

Zone III: Highest Load

- At each corner of the roof
- *About 5% of total roof surface*

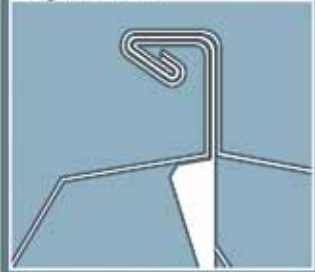
The Behlen ZL-24® Roof System accommodates all three roof zones simply and efficiently by executing one of three seam profiles. Each seam is formed in the field after the roofing panels have been installed. Precise roof wind loading requirements are met with our roof system by matching seam profile to load resistance required.

It all begins with a Revolutionary Seam

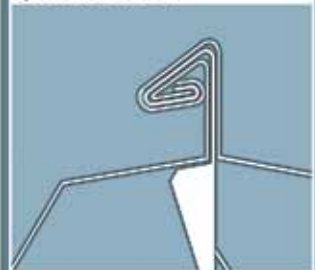
Roll-and-Lock



Triple-Lock



Quadri-Lock



Stand-Up Crimper



The Behlen ZL-24® Standing Seam Roof System offers a competitive advantage.

The roof system has the ability to resist different roof zone loads simply by selecting the appropriate seam to meet the uplift load for that zone. There is no need to change purlin spacings and no need for external mechanisms over the seams.

This results in a lower overall cost for both materials and installation.

Three revolutionary seaming profiles also eliminate the need to run an electric seaming machine as the roof is installed. No more delays in commencing roof panel installation while waiting for a seamer; seaming can be performed at any time after the roof panels have been installed.

The entire roof can be seamed with an electric seamer if desired.



MPS®
CLIP

A better connection makes for a better roof

- Provides lateral stability to purlins by restricting purlin roll while allowing complete panel expansion and contraction movement
- Allows a full 3½" of roof movement (1¾" contraction & 1¾" expansion)
- Positive acting centering tab assures the clip tab is centered until the fastener is installed
- Clip hook engages the end of the male lip to lock the tab in the seam under severe uplift
- Factory-applied sealant is placed under the tab so, upon installation, it will merge with the factory-applied sealant in the panel seam to assure a superior sidelap seal at each clip location
- All clips are fabricated from G-90 galvanized steel to assure a long, corrosion-resistant life
- Patented base provides bearing edges that compress blanket insulation in small areas (to maximize clip stability when attached to purlins over blanket insulation)

Easy, Reliable & Cost Efficient.

The Bottom-Line Result

In virtually every case, your entire roofing system is accomplished with one consistent purlin spacing, one panel size, and one clip throughout.

The following recognized certifications and listings have been earned:

Underwriters Laboratories UL-90 Classification Construction No. 552, 552A, and 552B

ASTM E 1680 Air Infiltration
ASTM E 1646 Water Leak

Corps of Engineers CEGS 07416 Uplift Test
ASTM E 1592 Uplift Test (three tests each span each gauge)

Factory Mutual 4471
FM 1-90 at 4' Purlin Spacing
FM 1-60 at 5' Purlin Spacing

Underwriters Laboratories Inc. Construction No. 552
ZL-24® roof with Roll-and-Lock, Triple-Lock and Quadri-Lock Seam

UL Listing	Panel Width	Panel Gauge	Seam Type	Purlin Gauge	Purlin Spacing
UL-60	24"	24 ga.	All Seam Types	16 ga.	5'0"
UL-90	24"	24 ga.	All Seam Types	16 ga.	5'0"

ASTM E 1592 Uplift Test Results - ZL-24® roof with Roll-and-Lock Seam

Purlin Spacing	Panel Width	Panel Gauge	Design Load AISI CF00-1 (sf=1.724*)
2'6"	24"	24 ga.	56.2
5'0"	24"	24 ga.	32.1

ASTM E 1592 Uplift Test Results - ZL-24® roof with Triple-Lock Seam

Purlin Spacing	Panel Width	Panel Gauge	Design Load AISI CF00-1 (sf=1.724*)
2'6"	24"	24 ga.	83.0
5'0"	24"	24 ga.	56.2

ASTM E 1592 Uplift Test Results - ZL-24® roof with Quadri-Lock Seam

Purlin Spacing	Panel Width	Panel Gauge	Design Load AISI CF00-1 (sf=1.724*)
2'6"	24"	24 ga.	120.3
5'0"	24"	24 ga.	64.2

ASTM E 1680 Air Infiltration all seams 24" wide panels = .0005 CFM/sq.ft

ASTM E 1646 Water Leakage all seams 24" wide panels - None at 12 psf

*Design Load - (Mean Ultimate Load/sf) x 1.33 when allowed by building code

ZL-24® roof system and its components are covered by US Patent numbers 5,692,352-5,737,894-6,301,853 B1 and other patents pending.



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