

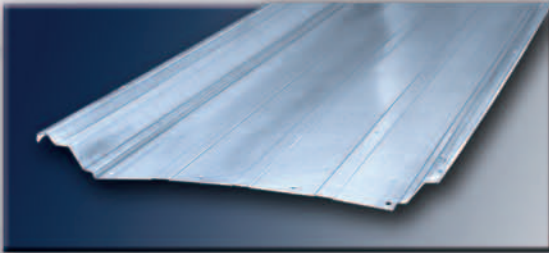


BEHLEN

ZL-24[®]
Standing Seam Roof

ZL-24[®]

Zonal Lock[®]



ZL-24[®] Standing Seam Roof

The Good Iron People

Serious Performance Through Superior Design

ZL-24[®] Standing Seam Roof System

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

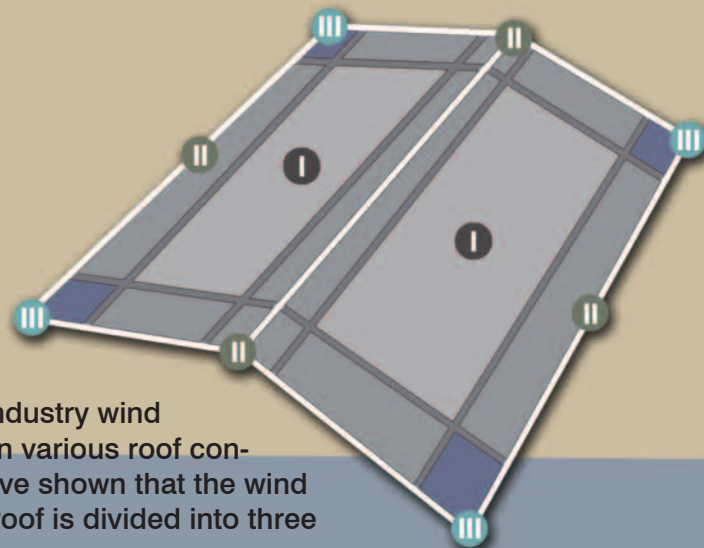
Recent changes in wind uplift resistance requirements and testing methods have called for a new approach to roof performance. Behlen has specifically designed the ZL-24[®] to meet and exceed these new requirements. The versatile seaming system of the ZL-24[®] allows for the ultimate flexibility in roof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

- Zonal Lock[®] seaming system which accommodates the various wind load zones.

- Three Seaming Options to meet precise roof wind loading requirements for each roof zone.

These features add up to a quality, reliable roof over your building, and create a savings in cost and time for your project.

Zonal Lock[®]



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 surface)

Zone II: Next Higher Load

Area around the perimeter of the roof (about 15% of total roof surface)

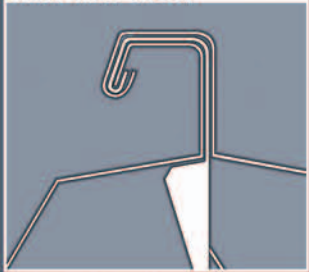
Zone III: Highest Load

At each corner of the roof (about 5% of total roof surface)

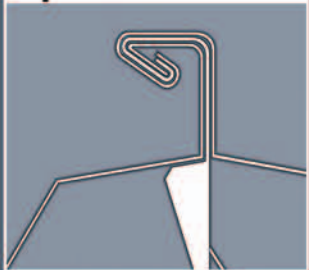
The Behlen ZL-24[®] Roof System accommodates all three roof zones simply and efficiently, by executing one of three seaming shapes. Each shape is formed in the field after the roofing panels have been installed. Precise roof wind loading requirements are met with our roof system, by matching seaming effort to loading.

It All Begins with a Revolutionary Seam

Roll-and-Lock



Triple-Lock



Quadri-Lock



Stand-Up Crimper

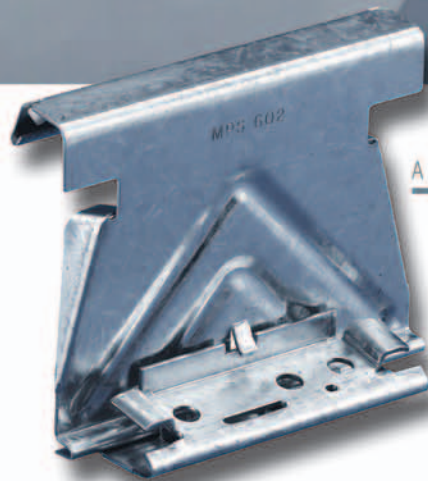


The Behlen ZL-24® offers a competitive advantage.

The roof system has the ability to resist different roof zone loads simply by selecting the appropriate seaming method to meet the uplift load for that zone. No need to change purlin spacing and no need for external clips over the seam.

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

Three Revolutionary Seaming Methods also eliminate the need to run an electric seaming machine as the roof is installed. No more delays waiting for a seamer, as the seaming can be performed at any time after the roof panels have been installed.



A Better Connection Makes for a Better Roof

MPS® Clip

- **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 prevent the tab from sliding out of the seam under severe uplift
- **Factory-applied sealant** is placed under the tab so it will merge with the factory sealant in the panel seam upon installation to assure a superior sidelap seal at each clip location
- **All clips are fashioned from G-90 galvanized steel** to assure a long, corrosion-free life
- **Patented base** provides bearing edges that compress blanket insulation in small areas (to minimize clip roll when attached to purlin over blanket insulation)



The Bottom-Line Result:

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

Easy, Reliable & Cost-Efficient.

The following recognized certifications and listings have been earned:

- Underwriters Laboratories UL-90 Classification Construction No. 552
- Corps of Engineers CEGS 07416 Uplift Test
- ASTM E 1592 Uplift Test (three tests each span each gauge)
- ASTM E 1680 Air Infiltration
- ASTM E 1646 Water Leak

The ZL-24[®] panel system technology has been tested and certified by independent testing agencies and laboratories and achieved the loads and listings shown below.

Underwriters Laboratories Inc. Construction No. 552, 552A, 552B
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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