



**WITH MORE OPTIONS IN METAL ROOFING,
KIRBY BUILDING SYSTEMS HAS YOU COVERED.**
Standing Seam 360 Panels



**KIRBY
BUILDING
SYSTEMS**
A HUCOR Company

BETTER SOLUTIONS. BETTER BUILDINGS.





Excellent performance. Superior aesthetics.



Standing Seam 360

Kirby Standing Seam 360 (SS360) panels have been designed to withstand a diverse range of climates and demanding roof conditions. The panels float on a system of sliding clips that prevent damage from thermal expansion and contraction. With a width coverage of 24 inches and a height of 3 inches, Kirby's standing seam designs eliminate 80% of the through fasteners found in other systems for greater weathertightness, energy efficiency and ease of installation.

To ensure weathertightness, Standing Seam 360 panel sidelaps have factory-applied mastic as standard and, even better, Standing Seam 360 panels are joined by an electric seaming machine, developing a full 360-degree rolled seam.

When it comes to performance, few roof systems compare to Kirby's Standing Seam panels. SS360 panels carry a Class 90 Wind Uplift rating by Underwriters Laboratories when tested in accordance with test procedure UL 580. This system also has a Class A fire rating when tested in accordance with test procedures ASTM E108.



SS360 panels are excellent performers in both new and retrofit applications. While this roof panel was designed to withstand the most extreme weather conditions, its benefits don't end there. The uninterrupted linear roof is also aesthetically pleasing, even for higher sloped roofs. Our SS360 panels provide a clean, attractive look that can be used in almost any application.



Kirby Standing Seam Roofing vs. Through-Fastened Roof Systems

The design of the Standing Seam Roof (SSR) System with thermal blocks has been developed and proven to be over 32% more energy efficient than a through-fastened system. Although there is some compression of the blanket insulation with the SSR System, the potential energy loss is offset by the higher R-value provided by thermal blocks.

A roof system's U-factor, which is the overall coefficient of heat transfer for all of the elements of construction and is typically used with a combination of materials, is the inverse of an R-value. The lower the U-factor, the greater the assembly's resistance to heat flow and the better its insulating value. Our SSR Systems maintain a lower U-factor, increasing their energy efficiency over through-fastened systems.

Thermal bridging occurs at the panel screws, with each screw transferring the temperature from outside through the panel to the purlin. Blanket insulation used with a through-fastened roof is compressed over the purlins so that the insulation's R-value is greatly reduced along the purlins. Both of these conditions lower the effectiveness of the roof insulation.

The Kirby Standing Seam 360 Panel System has been designed to minimize thermal bridging and reduce the effect of blanket insulation compression with the addition of thermal blocks, taller clips, the reduction of roof fasteners, and the addition of clip shoulders that provide support to the panel ribs.



Factory-applied mastic for weathertight seams

Overall U-Factor for Entire Base Roof

Fiberglass Insulation R-Value	Through-Fastened Roof	Single Layer Standing Seam Roof with Thermal Blocks	Standing Seam Outperforms Through-Fastened Roof
R-10	0.153	0.097	37%
R-11	0.139	0.092	34%
R-13	0.130	0.083	36%
R-16	0.106	0.072	32%
R-19	0.098	0.065	34%

Meets Current ASHRAE 90.1 Requirements





An Installation Advantage

With the multitude of standing seam roof systems on the market today, Kirby Building Systems offers roofs that are installer friendly. The parts, pieces and details are engineered to require minimal time and effort to erect and install. Our roof systems are designed to maintain integrity throughout the longevity of the structure. The following features and benefits capture positive feedback from building erectors and roofers about SS360.

Feature:

Roof-anchoring fasteners at the building eave are located outside of the building envelope.

Benefit:

Thermal-induced movement of all floating roof systems continually stresses the roof-anchoring attachments, creating the long-term potential for leaks at the anchoring fasteners. With a Kirby Standing Seam Roof System, the potential for a leak at anchoring fasteners within the building envelope has been eliminated.

Feature:

A flatter angle than most other standing seam roof systems is required for locking adjacent panel seams together.

Benefit:

When installing each additional panel run on the SS360 roof system, the added panels require a minimal leading edge lift to engage the previous panel seam. This improves on what could be a time-consuming and cumbersome process, especially with long panel lengths. With other systems long panels tend to shift positions due to their weight, and often do not lock in uniformly along their length and at critical endlap locations.

Feature:

Mechanical seamers for the SS360 Standing Seam Roof System are among the fastest in the industry.

Benefit:

Standing Seam 360 panels are joined by an electric seaming machine, developing a full 360-degree rolled seam to ensure

weathertightness. A consistent 7 to 10 amps of power to the seamer enables up to 30 to 35 lineal feet of panel seaming per minute. In addition to the speed, mechanical seamers engage the panel seam from within the perimeter of the roof — a safer operation for your installation crews. Also, the roller wheel engaging levels and the light seamer weight make these machines very user friendly, reducing installation labor costs.

Feature:

The Kirby panel endlap design provides sturdy, durable and functionally time-tested, high-quality performance.

Benefit:

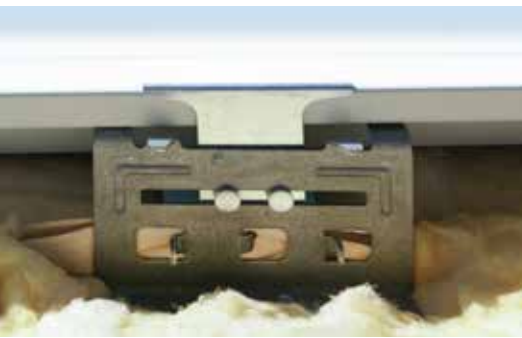
Panel endlaps are one of the most critical installation details of any standing seam (floating) roof system. Kirby provides a heavy-gauge backup plate. Dimples are stamped into the downslope ends of every roof panel indicating proper screw placement in the flat of the panel by the installer. In lieu of a top (or “cinch”) strap, the Kirby design utilizes eight premium screws in the flat of the panel to help ensure alignment of the roof panels, as well as proper compression of the endlap mastic. Our superior endlap design also helps accommodate uniform panel movement due to thermal stresses.

Feature:

Kirby Building Systems offers the job-specific tools (and instructions) required for proper installation of our standing seam roof systems.

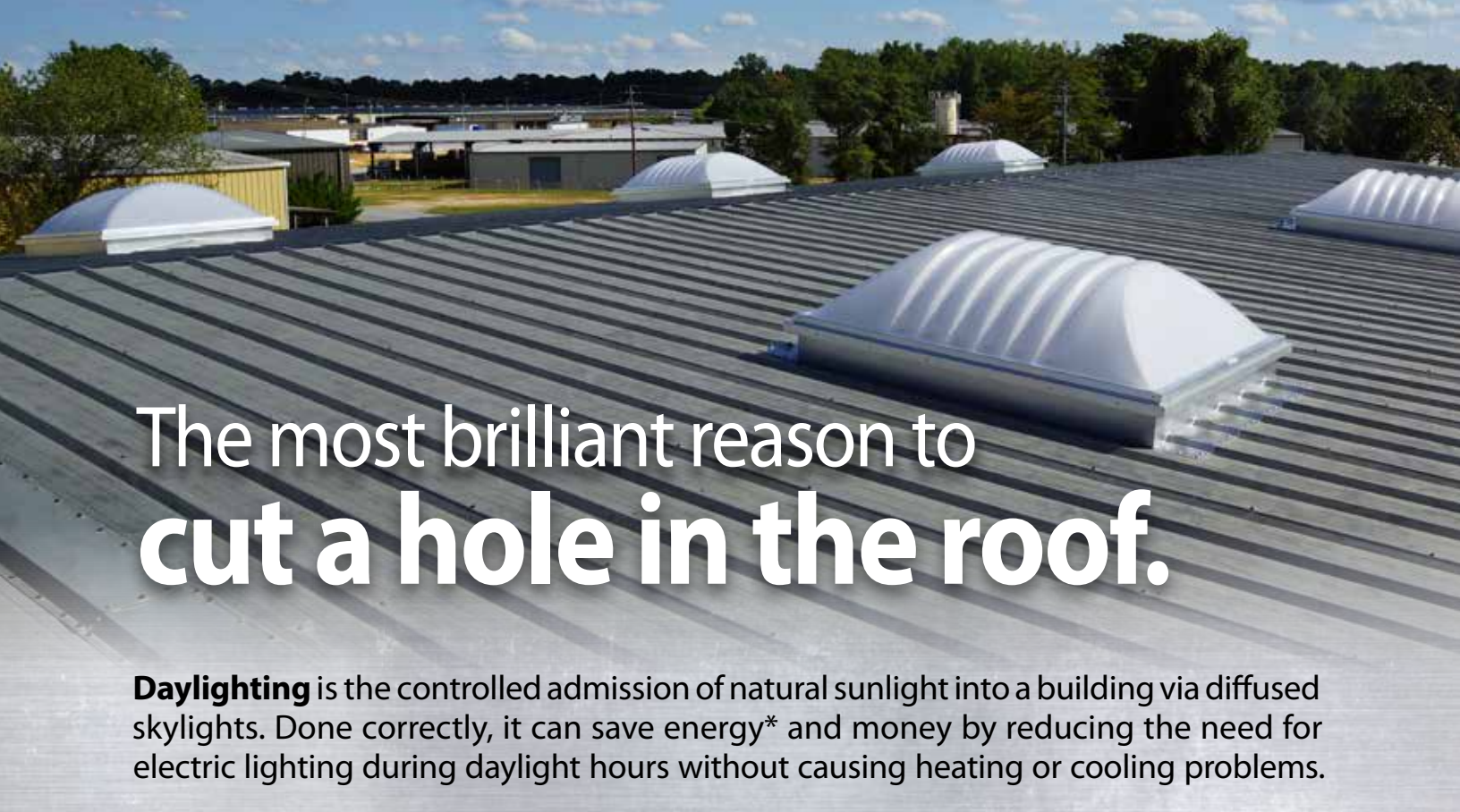
Benefit:

Employing the correct tools for any job is key to ensuring a high-quality and long-lasting end result. Kirby offers specialized clamps, crimpers, gauges, grips and other tools for use by the installer. Proper installation utilizing the right tools results in a high-performance roof system while reducing installation time, effort and costs. Details for proper use of these specialized installation tools are provided in the installation drawing package.



Standing Seam 360





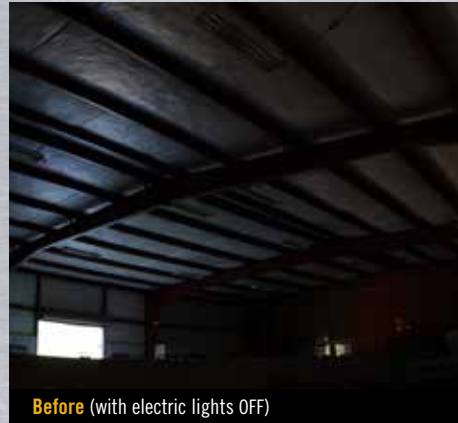
The most brilliant reason to cut a hole in the roof.

Daylighting is the controlled admission of natural sunlight into a building via diffused skylights. Done correctly, it can save energy* and money by reducing the need for electric lighting during daylight hours without causing heating or cooling problems.

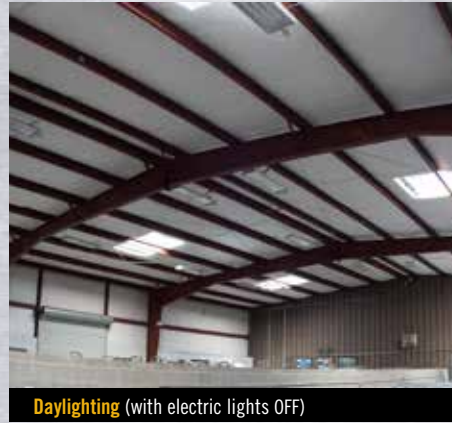
As industry leaders in today's engineered building technology, we offer high-performance daylighting components for new construction and retrofits.

By bringing natural light into engineered steel buildings and other structures, daylighting systems enable you to harness the sun so that electric lights can be dimmed or turned off a portion of the day, while keeping the interior pleasant and productive for occupants.

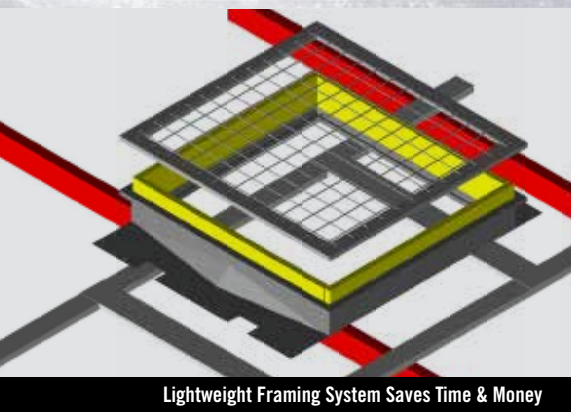
Adding natural daylight to your projects is a bright idea. High-performance prismatic skylights and daylight-responsive lighting controls will enhance your projects and brighten your sales curve.



Before (with electric lights OFF)



Daylighting (with electric lights OFF)



Lightweight Framing System Saves Time & Money

1. PRISMATIC LENS DESIGN AND PERFORMANCE

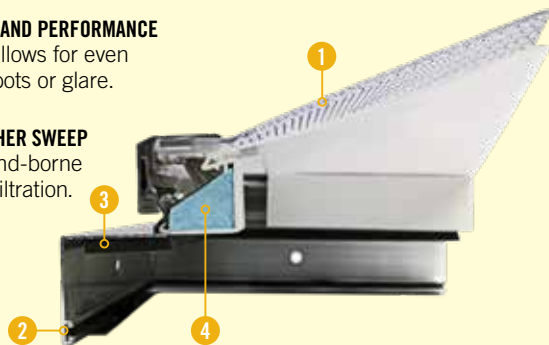
100% diffusion (haze) allows for even coverage with no hot spots or glare.

2. INTEGRATED CURB WEATHER SWEEP

Designed to prevent wind-borne debris and moisture infiltration.

3. PRE-INSTALLED FOAM CURB GASKET

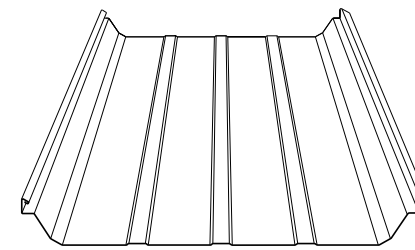
Protects against moisture infiltration.



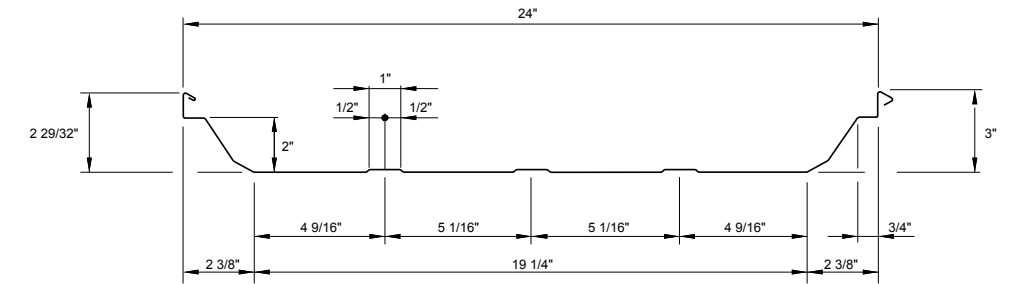
4. AAMA-CERTIFIED 800MD FRAME DESIGN

Fully welded with encapsulating and insulated thermal break. No exposed metal avoids condensation from thermal bridging through frame.

Standing Seam 360 Engineering Properties



PANEL PROFILE



CROSS SECTION

ENGINEERING PROPERTIES OF KIRBY BUILDING SYSTEMS STANDING SEAM 360 PANEL

Designated Gauge of Steel	Steel Yield KSI	Base Metal Thick. (In.)	Total Thick. (In.)	Panel Weight (lbs. /ft. ²)	Top In Compression			Bottom In Compression			Fb KSI
					Ix (In ⁴ /ft)	Sx (In ³ /ft)	Ma K-IN.	Ix (In ⁴ /ft)	Sx (In ³ /ft)	Ma K-IN.	
24 Ga.	50	0.0225	0.0241	1.20	0.278	0.116	3.48	0.126	0.080	2.41	30
22 Ga.	50	0.0300	0.0316	1.58	0.372	0.159	4.76	0.177	0.111	3.32	30

Gauge of Panel	No. of Spans	Load Type	Maximum Total Uniform Load in PSF							
			Span Lengths, Ft.							
			1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00
24 Ga.	1	POS	1032	581	372	258	190	145	115	93
	2	POS	548	340	230	165	123	96	76	62
	3	POS	631	402	275	199	151	117	94	77
	4	POS	606	382	261	188	142	110	88	72
22 Ga.	1	POS	1409	793	507	352	259	198	157	127
	2	POS	798	487	325	231	173	133	106	86
	3	POS	930	580	393	282	212	164	131	107
	4	POS	889	551	371	266	199	154	123	100

1. The panels are checked for bending, shear, combined bending and shear, and deflection. Deflection is limited to span/60.
2. Section properties are calculated in accordance with the 2007 *North American Specification for the Design of Cold-Formed Steel Structural Members*.
3. Minimum yield strength of 24- and 22-gauge steel is 50,000 psi.
4. Steel panels are either aluminum-zinc alloy or G-90 coated. The base metal thickness is used in determining section properties.
5. Positive load (POS) is applied inward toward the panel supports and is applied to the outer surface of the full panel cross section.

CONTACT US TO LEARN MORE ABOUT THE BENEFITS OF LETTING THE SUN SHINE IN.



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* According to Jon McHugh, PE, LC, and technical director with the energy consulting and research firm, Hescong Mahone Group, Inc., America could reduce its peak load electrical demand by 24,000 megawatts just by daylighting existing buildings that could utilize daylight using toplighting or skylights.



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Building for Tomorrow

Kirby Building Systems is committed to reducing our impact on the environment. Not only are our buildings manufactured from at least 70% recycled steel, but also, at the end of its useful life, 100% of a Kirby building can be recycled into a variety of steel products, including new cars, appliances, buildings and bridges. Furthermore, Kirby Building Systems is ISO 14001: 2004 Certified. Protecting the environment is critical to our operations and the company's long-term success. At Kirby, environmental compliance with laws and regulations governing our operations is a priority equal with all other business functions.

Our commitment to the environment has even more direct effects on our building owners in terms of energy savings. Kirby offers two cool panel finish options. Our SP-COOL™ panels include a 25-year finish warranty. Our Kirby-COOL PVDF coated panels come with a 35-year finish warranty. The cool coatings on both options help generate lower environmental temperatures, reducing smog and the heat island effect. What's more, they help reduce cooling costs in hot summer months.