



a **NUCOR** company

SS360

Kirby has you covered with our SS360 standing seam metal roofing panel.



EXCELLENT PERFORMANCE. SUPERIOR AESTHETICS.

When it comes to performance, few roof systems compare to Kirby's SS360 standing seam roof panels.

Kirby Building Systems' SS360 standing seam roof 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 3" high trapezoidal ribs, Kirby's SS360 panel design eliminates 80% of the through fasteners found in other systems for greater weathertightness, energy efficiency and ease of installation.

Kirby's SS360 withstands the most extreme weather conditions day in and day out.

To ensure weathertightness, SS360 panel sidelaps have factory-applied mastic as standard – even better, SS360 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 roof system. SS360 panels carry a Class 90 Wind Uplift rating by Underwriters Laboratories when tested in accordance with test procedure UL 580. They are also Factory Mutual approved, and have a Class A fire rating when tested in accordance with test procedures ASTM E108.

SS360 is an excellent performer 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 panel provides a clean, attractive look that can be used in almost any application.



SS360



Class 90 Wind Uplift Rating

By Underwriters Laboratories when tested in accordance with test procedure UL 580.



Class A Fire Rating

When tested in accordance with test procedures ASTM E108.

Meets ASTM Standards

Water Infiltration	ASTM E1646
Air Infiltration	ASTM E1680
Wind Uplift	ASTM E1592



Approved

By Factory Mutual

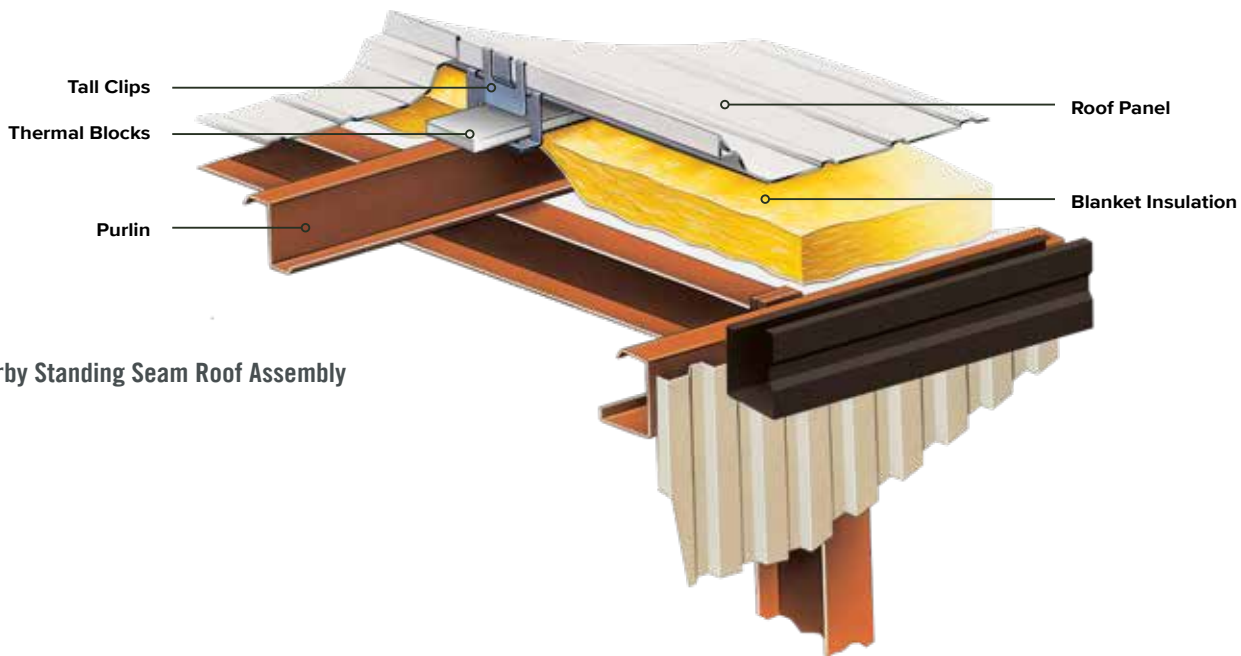
Kirby Standing Seam Roof vs. Through-Fastened Roof Systems

The design of our standing seam roof system with thermal blocks has been developed and proven to be over 38% more energy efficient than a through-fastened system. Although there is some compression of the blanket insulation with this 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 system maintains a lower U-factor, increasing its energy efficiency over through-fastened systems.

Thermal bridging occurs at the panel screws with each screw transferring the outside temperature 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.

Kirby's SS360 roofing 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.



Kirby Standing Seam Roof Assembly

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	0.184	0.115	38%
R-11	0.182	0.107	41%
R-13	0.174	0.101	42%
R-16	0.157	0.096	39%
R-19	0.151	0.082	46%

ASHRAE 90.1 2013 Standards





Kirby's SS360 Offers an Installation Advantage

Kirby Building Systems' SS360 roof is installer-friendly. The parts, pieces and details are engineered to require minimal time and effort to erect and install. Our roof system is designed to maintain integrity throughout the longevity of the structure.

THESE FEATURES & BENEFITS CAPTURE POSITIVE FEEDBACK FROM BUILDING ERECTORS & 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 the Kirby standing seam roof system, the potential for a leak at anchoring fasteners within the building envelope has been eliminated.

Feature: There is an option that maintains compliancy with the updated 2006 and newer IBC codes.

Benefit: Based upon IBC code wind load requirements, many standing seam snap systems cannot be used; however, the SS360 is capable of meeting the more stringent requirements of the higher IBC wind zones. Laboratory testing has proven that the 360 degree rolled seams created by electric seaming machines provide a secure rolled seam which is preferred by many architects and roof specifiers.

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: SS360 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 system.

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.





Raise the Roof and Boost the Performance with R-Boost™ — Kirby’s Elevated Insulation System

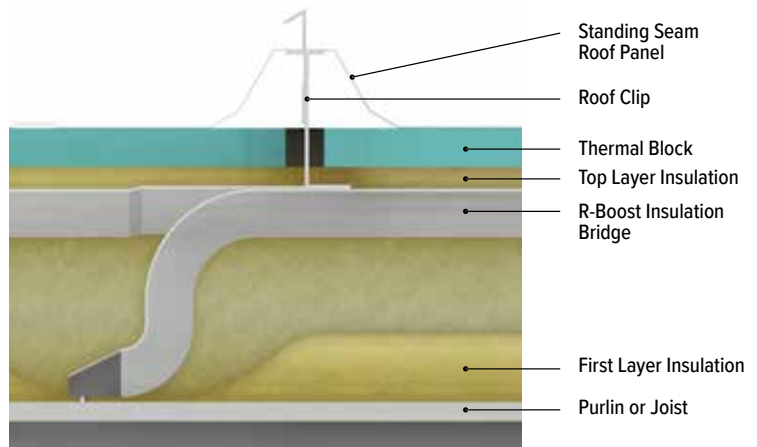
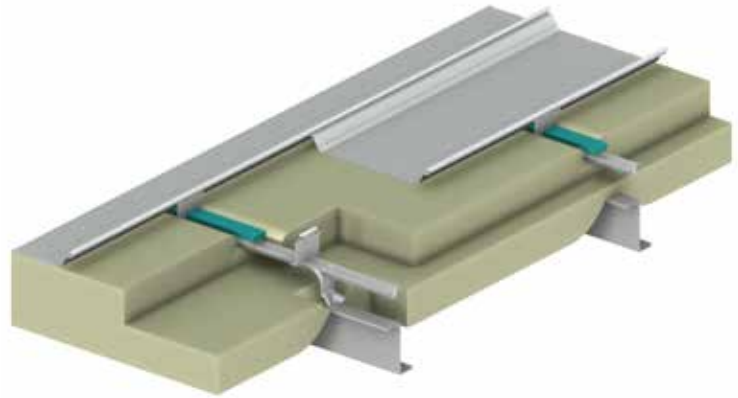
We understand the challenge of controlling project costs while meeting today’s rapidly changing energy code requirements.

Our R-Boost Elevated Insulation System is an economical solution that achieves the increased levels of thermal performance the latest codes demand. This unique patent-pending design features an insulation bridge between an initial and secondary layer of blanket insulation, doubling the insulation capacity and meeting energy codes throughout North America.

Boost the Flexibility

R-Boost is designed to work with Kirby’s SS360, a standing seam roof system well-known for its performance, strength, and weathertightness. While engineered for functionality and the ability to withstand the most extreme weather conditions, SS360 panels are also aesthetically pleasing, providing a clean, attractive look for nearly any application.

When used in combination with R-Boost, this system provides you with the highest potential for total building system cost savings.



R-Boost Roof Assembly



R-Boost™ Performance*		Highest Climate Zones Covered	
Assembly	U-factor	IECC 2012/2015/2018	ASHRAE 90.1-2013/2016
Installed Over Purlin			
R19 + R19	0.033	5	5
R19 + R25	0.032	5	5
R19 + R30	0.030	6	6
R19 + R38	0.029	8	7
R25 + R38	0.027	8	7
Installed Over Joist			
R19 + R19	0.034	5	5
R19 + R25	0.032	5	5
R19 + R30	0.030	6	6
R19 + R38	0.029	8	7
R25 + R38	0.027	8	7

*Assembly U-factor performance based on imperial units (Btu/h-ft²-F).

Building for Tomorrow

Kirby is committed to reducing our impact on the environment.

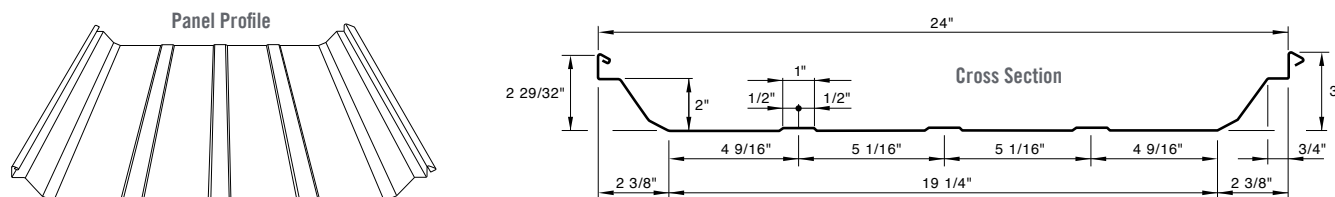
Not only are our buildings manufactured from at least 70% recycled steel, but also at the end of its useful life, 100% of a Kirby building can be recycled into a variety of steel products including new cars, appliances, buildings and bridges. Furthermore, Kirby is ISO 14001: 2015 Certified. Protecting 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.

Kirby's commitment to the environment has even more direct effects on our building owners in terms of energy savings, starting with our cool panel finishes. Our PVDF coated panels come with a 35-year finish warranty.

This cool coating paint finish helps generate lower environmental temperatures reducing smog and the heat island effect. What's more, it helps reduce cooling costs in hot summer months.

All Kirby panels are manufactured in our IAS-accredited plant. As an IAS-accredited manufacturer, Kirby is committed to quality, skilled workmanship and customer satisfaction. By complying with the special inspection requirements in Chapter 17 of the International Building Code, you can be assured that we have the expertise, resources and infrastructure to provide the highest level of manufacturing standards.

Kirby Building Systems' SS360 Panel Engineering Properties



Engineering Properties of Kirby Building Systems' SS360 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	Number 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.



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