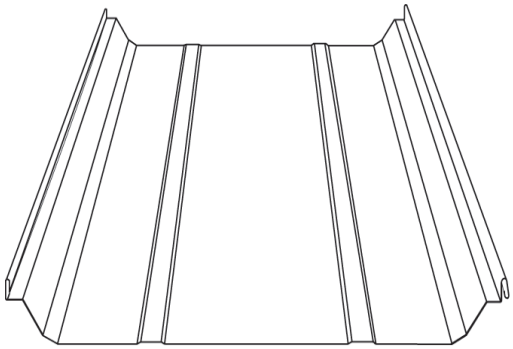
Kirby Building Systems
A NUCOR Company

KLM 2100
Panel Specifications

PRODUCT NAME
KLM Roof System for new roofing or retrofit roofing.



MANUFACTURER
Kirby Building Systems
P.O. Box 390, 124 Kirby Drive
Portland, TN 37148
615 325 4165
www.kirbybuildingsystems.com

PRODUCT DESCRIPTION
Basic Use: For roofing new buildings or reroofing existing buildings of any construction type. Specially designed roof panels are secured to the structural system with concealed clips. An electric seaming machine rolls a 360 degree seam to ensure against leaks. Sliding clips provide for thermal expansion along the slope. KLM panels have ribs 3” high on 24” centers. Net width coverage of each panel is 2’, and panels are available in standard lengths up to 45’. Longer lengths are available upon request.

Materials: KLM roof panels are 24 or 22 gauge 50,000 psi steel. Galvalume coated ASTM A792-08 GR 50 Class I. Prepainted panels have Kynar 500® Cool Paint System. Also available in four Silicon-Polyester Cool colors. KLM has a two piece floating clip providing thermal expansion or contraction (UL 90 Rated - Underwriters Laboratories Inc.).

KLM sidelaps have factory applied Hot Melt mastic. Endlaps, roof flashing laps, ridges and eave closures are sealed with tape mastic. The material is non-staining, non-corrosive, non-toxic and non-volatile.

Caulk: All gutter endlaps, endcaps, outside closure-to-panel ribs, outside closure tabs to outside closure tabs and roof accessories are sealed with polyurethane caulk.

All fasteners for panel to secondary framing and panel to panel will be one of the following EPDM washer head screws.
Standard roof fasteners shall be No. 1/4”-14 x 1 1/4” ZAC. KLM panel clips are attached to the purlins with the following fasteners:
Self-drilling screws are 1/4’-14x1 1/4” TEK 2 with washer.

TECHNICAL DATA
The KLM panel has received a Class 90 Wind Uplift rating by Underwriters Laboratories Inc. when tested in accordance with test procedure UL 580. The KLM roof panel has been Factory Mutual approved. This panel has also been tested in accordance with Wind Lift ASTM E1592 and CEGS 07416, Air Infiltration ASTM E1680-95 and Water Penetration ASTM E1646-95. This panel has been approved for SREF (SSTD-97) Impact Testing.

INSTALLATION
Installation should be performed in accordance with Kirby Building Systems’ manuals and building erection drawings and should be done by a qualified installer using proper tools and equipment.

Continue on back...

WARRANTY

35 & 25 year paint finish warranties are available. 20 year weathertightness and 20 year Galvalume® warranties are also available.

MAINTENANCE

Only normal routine maintenance is required over the life of the panels.

PRODUCT NOTES

A certain amount of waviness called “oilcanning” may exist in this panel. Minor waviness of the panel is not sufficient cause for rejection, because oilcanning does not affect the structural integrity of the panel. Standing seam panels in general are known for tendency to rumble in high winds if insulation is not used. KLS and KLM are no different. Under no circumstances should KLS or KLM be used without blanket insulation between the panel and the purlin/bar joist.

Engineering Properties of Kirby Building Systems' KLM 2100 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 Gauge	50	0.0225	0.0241	1.23	0.3224	0.1307	3.9132	0.1507	0.989	2.9619	30
22 Gauge	50	0.0300	0.0316	1.56	0.4205	0.1708	5.1122	0.2059	0.1394	4.1741	30

Gauge of Panel	Number of Spans	Load Type	Maximum Total Uniform Load in PSF					
			L= 2'-6"	L= 3'-0"	L= 3'-6"	L= 4'-0"	L= 4'-6"	L= 5'-0"
24 Ga.	1	LIVE	204.0	170.0	145.7	127.5	113.3	102.0
	2	LIVE	204.0	170.0	145.7	123.4	97.5	79.0
	3	LIVE	204.0	170.0	145.7	127.5	113.3	98.7
	4	LIVE	204.0	170.0	145.7	127.5	113.3	92.2
22 Ga.	1	LIVE	296.9	247.5	212.1	185.6	165.0	136.3
	2	LIVE	296.9	247.5	212.1	173.9	137.4	111.3
	3	LIVE	296.9	247.5	212.1	185.6	165.0	139.1
	4	LIVE	296.9	247.5	212.1	185.6	160.4	129.9

1. The panels were checked for bending, shear, combined bending and shear and deflection. Deflection was limited to span/180.

2. Section properties have been calculated in accordance with the 2001 North American Specification for the Design of Cold-Formed Steel Structural Members.

3. Steel panels are either aluminum zinc alloy or G-90 coated. The base metal thickness was used in determining section properties.

4. Allowable loads are based on uniform span lengths.

5. The weight of the panel has not been deducted from the allowable loads.

6. THE ABOVE LOADS ARE NOT FOR USE WHEN DESIGNING PANELS TO RESIST WIND UPLIFT.