



# COMPOSITE ROOF SYSTEM WITH 16" LOC SEAM / LOC SEAM 360

## 1. PRODUCT NAME

Composite Roof System for roof applications.

## 2. MANUFACTURER

### AMERICAN BUILDINGS COMPANY

1150 State Docks Road  
Eufaula, Alabama 36027  
Phone: (334) 687-2032

## 3. PRODUCT DESCRIPTION

These standing seam roof panels offer a flat profile, with minor striations and optional pencil ribs, for an attractive appearance on higher pitched roofs. Loc Seam panels are seamed electrically and Loc Seam 360 panels have full 360 degree rolled seams formed with an electrical seaming machine. Minimum roof slope for the Loc Seam/Loc Seam 360 roof panels is ¼ to 12.

**Basic Use:** A roof covering system for new or retrofit construction. A specially designed roof system combines American's Loc Seam roof panel with a layer of rigid insulation board and a Multi-rib liner panel giving the interior a finished look with excellent insulating properties. Thermax rigid insulation is applied between the interior and exterior panels. A compressible blanket insulation (unfaced) 1" thickness before compression is located between the exterior panel and the rigid insulation (while optional, this insulation is highly recommended to minimize panel rumbling in high winds). An optional 3 mil (or equivalent) vinyl vapor barrier may be used between the liner panel and the rigid insulation.

**Materials:** Loc Seam panels are available in 24 or 22 gage 50,000 psi in either G90 zinc-coated (galvanized) steel or aluminum-zinc alloy-coated (AZ50 or AZ55) steel. Pre-painted panels have American Buildings Company SmartKote® (PVDF) Finish.

The Multi-rib liner has 15/16" ribs with major corrugations spaced on 6" centers. They offer 36" width coverage. Rigid insulation is Thermax® by Celotex Corporation, Types TF600, TF604, TF610 or Thermax Plus with a maximum thickness of 5-1/2" in a double layer or 4-1/2" in a single layer.

The Loc Seam clip is a two part assembly. The tab portions are a nominal 2-3/8" in height and 3" in width, die formed 24 gage aluminum coated steel. The bases are die formed 18 gage zinc-coated (galvanized) steel. Expansion capability is 1-1/4". Bearing plates for the Loc Seam panel clips are 20 gage zinc-coated (galvanized) or aluminum-zinc alloy-coated steel.

Loc Seam panel sidelaps have factory applied mastic, SikaLastomer-511 or equal. Its composition is 85% solids by weight. Service temperature range is -60°F to + 220°F.

Endlaps, roof flashing laps, ridges and eave closures are sealed with tape mastic, Sika Sika-Tape TC-95 or equal. The material is non-staining, non-corrosive, non-toxic and non-volatile. Composition is 100% solid isobutylene tripolymer tape. Service temperature is -60°F to +212°F. Eaves, endlaps, ridge and eave closures are sealed with non-skinning butyl caulk, SikaLastomer-511 or equal. Its composition is 85% solids by weight. Service temperature range is -60°F to + 220°F. All gutter and downspout joints, and roof accessories are sealed with polyurethane caulk, Sika SikaFlex 219LM or equal. It meets or exceeds Federal Specification TT-S-00230C, Type II, Class A.

All fasteners for panel to secondary framing and panel to panel will be one of the following EPDM washer head screws.

**Fasteners:** Roof fasteners shall be No. 14 x 1" self-drilling carbon steel screws with a molded zinc alloy hex washer head.

Loc Seam panel clips are attached to the purlins with self-drilling carbon steel screws No. 12 hex head, cadmium or zinc plated. The screw length is determined by the thickness of the rigid insulation. Multi-rib panels are attached to the secondary framing members by self-drilling carbon steel screws, No. 12 x 1-1/4" hex head, cadmium or zinc plated. Panel sidelaps are stitched with self-drilling carbon steel screws, No. 14 x 7/8" cadmium or zinc plated.

## 4. TECHNICAL DATA

The Loc Seam panel has received a Class 90 Wind Uplift rating by Underwriters Laboratories when tested in accordance with test procedure UL 580. The Loc Seam roof panel has been tested in accordance with ASTM E1592 and CEGS 07416. This panel has also been tested in accordance with Air Infiltration, ASTM E1680, ASTM E283 and Water Penetration, ASTM E1646, ASTM E331. This panel has received a Class A fire rating when tested in accordance with test procedure ASTM E108.

The Loc Seam 360 panel has received a Class 90 Wind Uplift rating by Underwriters Laboratories when tested in accordance with test procedure UL 580. The Loc Seam 360 roof panel has been Factory Mutual and Miami-Dade County approved and also tested in accordance with Wind Uplift ASTM E1592 and CEGS 07416. This panel has been tested in accordance with Air Infiltration, ASTM E1680 and Water Penetration, ASTM E1646. This panel has been approved for SREF (SSTD-97) Impact Testing. This panel has

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received a Class A fire rating when tested in accordance with test procedure ASTM E108.

## 5. INSTALLATION

Installation should be performed in accordance with American Buildings Company's manuals and building erection drawings, and should be by a qualified installer using proper tools and equipment. Systems are installed by American Buildings Company Authorized Builders.

## 6. AVAILABILITY

For availability, contact:

**AMERICAN BUILDINGS COMPANY**

## 7. WARRANTY

Thirty-five year material and twenty year weathertightness warranties are available.

## 8. MAINTENANCE

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

## 9. TECHNICAL SERVICES

For information, contact:

**AMERICAN BUILDINGS COMPANY**

## 10. 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.

American Buildings Company reserves the right to revise all standard specifications and information. American Buildings Company regularly updates its published "Standard Specifications" on the American Buildings web site, [www.americanbuildings.com](http://www.americanbuildings.com), which supercede and replace any previously published standard specifications of American Buildings Company.

Engineering Properties of American Buildings Company 16" LocSeam Panel (ASD)																		
Designated Gage of Steel	Steel Yield KSI	Base Metal Thick. (In.)	Total Thick. (In.)	Panel Base Metal Weight (lbs. / ft. <sup>2</sup> )	Top In Compression			Bottom In Compression			Fb KSI							
					lx (In. <sup>4</sup> / ft.)	Sx (In. <sup>3</sup> / ft.)	Ma K-IN. / ft.	lx (In. <sup>4</sup> / ft.)	Sx (In. <sup>3</sup> / ft.)	Ma K-IN. / ft.								
24 Ga.	50	0.0225	0.0241	1.26	0.166	0.099	2.96	0.073	0.061	1.83	30							
22 Ga.	50	0.0300	0.0316	1.68	0.225	0.141	4.22	0.110	0.094	2.83	30							
Gage 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	876	B	493	B	316	B	219	B	161	B	123	B	97	B	79	B
	2	POS	460	B+S	276	B+S	183	B+S	130	B+S	96	B+S	74	B+S	59	B+S	48	B+S
	3	POS	542	B+S	333	B+S	223	B+S	159	B+S	119	B+S	92	B+S	73	B+S	60	B+S
	4	POS	517	B+S	315	B+S	210	B+S	149	B+S	111	B+S	86	B+S	69	B+S	56	B+S
22 Ga.	1	POS	1250	B	703	B	450	B	312	B	230	B	176	B	139	B	112	B
	2	POS	735	B+S	436	B+S	287	B+S	202	B+S	150	B+S	116	B+S	92	B+S	75	B+S
	3	POS	875	B+S	529	B+S	351	B+S	249	B+S	185	B+S	143	B+S	114	B+S	93	B+S
	4	POS	831	B+S	499	B+S	330	B+S	234	B+S	174	B+S	134	B+S	107	B+S	87	B+S

System "R" Values		
Thermax	Winter	Summer
1"	9.8	10.5
1 1/2"	13.8	14.1
2"	17.8	17.7
2 1/2"	21.8	21.3
3"	25.8	24.9
4"	33.8	32.1

Engineering Properties of American Buildings Company 16" LocSeam 360 Panel (ASD)																		
Designated Gage of Steel	Steel Yield KSI	Base Metal Thick. (In.)	Total Thick. (In.)	Panel Base Metal Weight (lbs. / ft. <sup>2</sup> )	Top In Compression			Bottom In Compression			Fb KSI							
					lx (In. <sup>4</sup> / ft.)	Sx (In. <sup>3</sup> / ft.)	Ma K-IN. / ft.	lx (In. <sup>4</sup> / ft.)	Sx (In. <sup>3</sup> / ft.)	Ma K-IN. / ft.								
24 Ga.	50	0.0225	0.0241	1.26	0.140	0.078	2.35	0.063	0.056	1.67	30							
22 Ga.	50	0.0300	0.0316	1.68	0.195	0.114	3.42	0.095	0.085	2.54	30							
Gage 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	695	B	391	B	250	B	174	B	128	B	98	B	77	B	63	B
	2	POS	446	B+S	262	B+S	171	B+S	120	B+S	89	B+S	68	B+S	54	B+S	44	B+S
	3	POS	537	B+S	319	B+S	210	B+S	148	B+S	110	B+S	85	B+S	67	B+S	55	B+S
	4	POS	508	B+S	301	B+S	197	B+S	139	B+S	103	B+S	79	B+S	63	B+S	51	B+S
22 Ga.	1	POS	1013	B	570	B	365	B	253	B	186	B	143	B	113	B	91	B
	2	POS	697	B+S	405	B+S	263	B+S	184	B+S	136	B+S	105	B+S	83	B+S	67	B+S
	3	POS	846	B+S	497	B+S	325	B+S	228	B+S	169	B+S	130	B+S	103	B+S	84	B+S
	4	POS	798	B+S	467	B+S	305	B+S	214	B+S	158	B+S	122	B+S	96	B+S	78	B+S

- The panels are checked for bending (B), shear (S), combined bending and shear (B+S) and deflection (D). The controlling check is noted in the table. Deflection is limited to span/60.
- Section Properties are calculated in accordance with the 2012 *North American Specification for the Design of Cold-Formed Steel Structural Members*.
- Minimum yield strength of 24 and 22 gage steel is 50,000 psi.
- Steel panels are either aluminum-zinc alloy or G-90 coated. The base metal thickness is used in determining section properties.
- 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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