

S T E E L R O O F D E C K L E G A C Y P R O D U C T

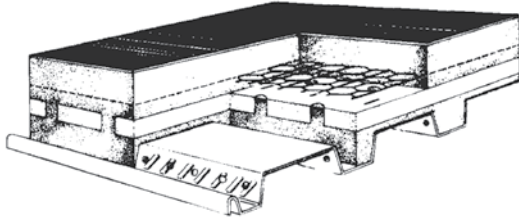
This product is no longer manufactured.

This product information has been made available to support the retrofit of existing buildings by providing the original design performance for the specified product.



SHEARVENT with B-36

Shear Vent™ System with B-36 Deck



The **Shear Vent™ system** combines positive vented (nominal 1% open area) B-36 Composite, lightweight insulating concrete and the Shear Resistance Angle (16 ga.), resulting in a design offering superior shear resistance. This design takes advantage of each component's best characteristics, thereby providing an economical and energy efficient system.

ASC's pierced venting allows dissipation of excess water at the time of pour, and trapped water vapor throughout the life of the assembly. Pierced venting, unlike alternative methods, causes no significant degradation of the strength of the steel in the direction of the stress lines. Consequently, there is no decrease in the section properties nor allowable loads relative to B-36 values.

Shear Vent™ develops a two-hour fire rating when designed and installed in accordance with the specified lightweight insulating concrete manufacturer's recommendations. Refer to the manufacturer's technical data for specific information on U-factors and specifications.

ShearVent™ Section Properties

Gauge	Weight (psf)	I (In4)	S+ (In3)	S- (In3)
22	1.68	0.178	0.18	0.195
20	2.04	0.22	0.235	0.246
18	2.7	0.302	0.321	0.336
16	3.36	0.379	0.407	0.415

1. Section properties are based on minimum 38 ksi steel (Fy).

ShearVent™ — Allowable Reactions (plf)

Gauge	Bearing Length						
	1"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"
22	416	468	520	572	625	677	729
	1007	1103	1213	1363	1513	1663	1813
20	700	776	853	929	1005	1082	1158
	1495	1617	1739	1897	2088	2280	2472
18	1443	1568	1693	1818	1943	2068	2193
	2734	2909	3084	3258	3436	3710	3985
16	2434	2608	2782	2957	3131	3305	3480
	4350	4578	4806	5034	5262	5490	5786

1. The top value reflects the allowable reaction at the panel end supports.
2. The bottom value reflects the allowable reaction at the interior supports.
3. Values are in pounds per linear foot.

Shear Vent™ allowable Total (DL + LL) Uniform Load (psf)

Condition	Gauge	Span	Span										
			5'0"	5'6"	6'0"	6'6"	7'0"	7'6"	8'0"	8'6"	9'0"	9'6"	10'0"
SINGLE SPAN	22	Stress	109	90	76	65	56	49	43	38	34	30	27
		Deflection	93	70	54	42	34	28	23	19	16	14	12
	20	Stress	143	118	99	85	73	64	56	49	44	40	36
		Deflection	115	87	67	53	42	34	28	23	20	17	14
	18	Stress	195	161	136	115	100	87	76	68	60	54	49
		Deflection	158	119	92	72	58	47	39	32	27	23	20
	16	Stress	247	205	172	146	126	110	97	86	76	69	62
		Deflection	199	149	115	90	72	59	49	40	34	29	25
DOUBLE SPAN	22	Stress	119	98	82	70	60	53	46	41	37	33	30
		Deflection	119	98	82	70	60	53	46	41	37	33	28
	20	Stress	150	124	104	89	76	66	58	52	46	41	37
		Deflection	150	124	104	89	76	66	58	52	46	41	35
	18	Stress	204	169	142	121	104	91	80	71	63	57	51
		Deflection	204	169	142	121	104	91	80	71	63	56	48
	16	Stress	252	209	175	149	129	112	99	87	78	70	63
		Deflection	252	209	175	149	129	112	99	87	78	70	60
TRIPLE SPAN	22	Stress	148	122	103	88	76	66	58	51	46	41	37
		Deflection	148	122	102	80	64	52	43	36	30	26	22
	20	Stress	187	155	130	111	95	83	73	65	58	52	47
		Deflection	187	155	126	99	79	65	53	44	37	32	27
	18	Stress	255	211	177	151	130	113	100	88	79	71	64
		Deflection	255	211	173	136	109	89	73	61	51	44	37
	16	Stress	315	261	219	187	161	140	123	109	97	87	79
		Deflection	315	261	217	171	137	111	92	76	64	55	47

1. Stress based on allowable flexural stress of 22.8 ksi.
2. Deflection based on maximum deflection of L/240.
3. Adequate bearing must be provided.
4. See page 3 for General Notes.

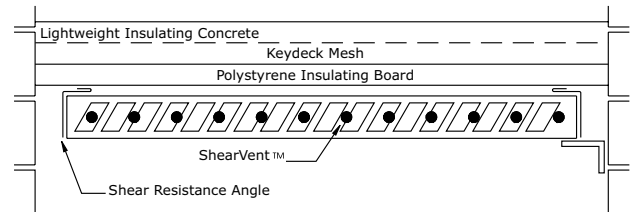
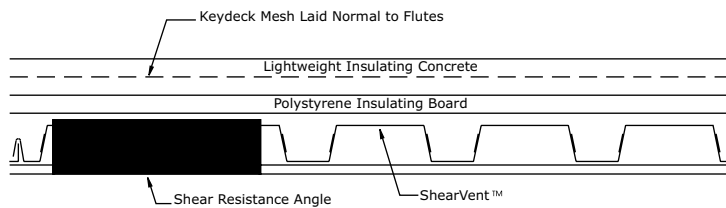
Shear Vent™ System with B-36 Deck

Shear Vent™ Allowable Diaphragm Shear (q) and Flexibility Factor (F) with Lap Splice Weld

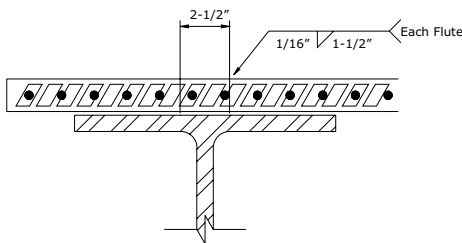
Gauge	Seam Attachment	No. Puddle Welds	No. Puddle Welds		Span				
			6'0"	7'0"	8'0"	9'0"	10'0"		
22	Button Punch	24" O.C. Max	7	q	1050	970	910	860	810
				F	5.0	5.9	6.7	7.5	8.4
	Top Seam Weld	24" O.C. Max	7	q	1470	1360	1270	1200	1140
				F	3.6	4.2	4.8	5.4	6.0
20	Button Punch	24" O.C. Max	7	q	1210	1120	1040	980	930
				F	4.2	4.9	5.6	6.3	7.0
	Top Seam Weld	24" O.C. Max	7	q	1690	1560	1460	1380	1310
				F	3.0	3.5	4.0	4.5	5.0
18	Button Punch	24" O.C. Max	7	q	1500	1380	1290	1220	1160
				F	3.1	3.7	4.2	4.7	5.2
	Top Seam Weld	24" O.C. Max	7	q	2100	1940	1810	1710	1620
				F	2.2	2.6	3.0	3.4	3.7
16	Button Punch	24" O.C. Max	7	q	1500	1380	1290	1220	1160
				F	3.1	3.7	4.2	4.7	5.2
	Top Seam Weld	24" O.C. Max	7	q	2100	1940	1810	1710	1620
				F	2.2	2.6	3.0	3.4	3.7

1. Refer to Shear Vent™ Details for weld patterns.
2. q7: q = allowable diaphragm shear (plf); 7=number of welds per support.
3. See page 3 for General Notes.

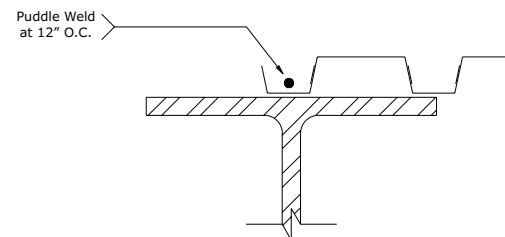
Shear Vent™ System Assembly Diagrams and Details



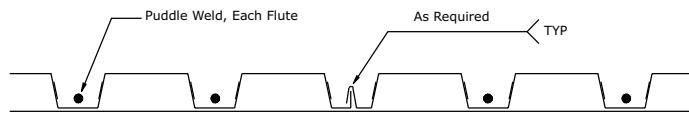
Lap Weld



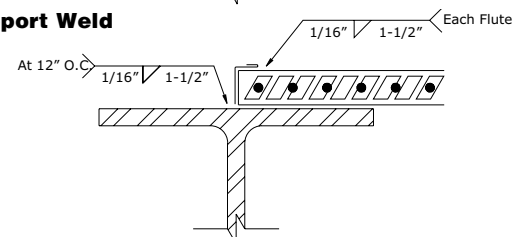
Perimeter Weld



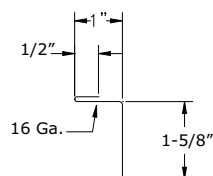
Interior and Seam Welds



End Support Weld



Shear Resistance Angle



Shear Resistance Angle to be used at end of deck units and at lines of shear transfer to structural frame.

General Notes

The following notes apply to the load tables.

1. The length of seam welds shall be a minimum of 1 1/2" long.

2. Arc spot or arc seam (puddle) welds shall have an effective fusion area to supporting members, equivalent to at least 3/8" by 1" long or 1/2" in diameter.

3. Spacing of marginal welds to members parallel to the flutes:

(a) Arc spot (puddle) welds to members, such as chords, and to collector elements, such as struts or ties, shall have a spacing in feet equal to $35,000 (t)/v$ where:

t = Uncoated steel thickness of fluted deck in inches (see ICC Report for "t")

v = Actual diaphragm shear at marginal supports or actual shear transferred to collector (at struts or ties) in pounds per foot.

(b) Fillet welds to members, such as diaphragm chords, shall have spacing in feet equal to $480 l_w/v$, where:

l_w = Length of weld in inches (not less than 1 1/2")

v = Actual diaphragm shear to be transferred to chords in pounds per foot.

(c) Fillet welds attaching the diaphragm to struts, ties or other collector elements shall have a spacing, in feet, equal to $300 l_w/v$ where:

v = Actual shear to be transferred to the collector element, in pounds per foot.

(d) In no case shall any weld spacing exceed 3'0".

4. Attachments at interior lines of shear transfer, perpendicular to deck corrugations:

(a) The shear transfer from a diaphragm to interior ties or strut lines, perpendicular to deck corrugations, shall not exceed the shear values indicated in the tables. Two lines of puddle welds may be used to develop to the actual shear transfer to these collector elements.

5. Where individual panels are cut, the partial panel shall be fastened in a manner to fully transfer the shears at the point of the diaphragm to the adjacent full panels for the values specified in the tables.

6. For all cellular profiles, the first number of the gauge designations (**20**/20) refers to the beam section (corrugated profile). The second number (20/**20**) refers to the pan section (flat plate).

7. For all allowable diaphragm shear tables, R is the vertical load span (L_v) of the deck unit divided by the length (L_2) of the deck unit. Both units are in linear feet.

8. Typical roof deck manufacturing tolerances:

Panel Length: $\pm 1/2"$

Thickness: Not less than 95% of the design base metal thickness.

Panel Cover width: $-3/8"$, $+3/4"$

Panel Camber/Sweep: $1/4"$ in 10' length

Panel End Out of Square: $1/8"$ per foot of panel width

9. 1% Venting

Venting of Roof Deck may be provided to meet the requirements for insulating concrete systems.

Roof Deck – Fire Resistance Rating

Restrained Assembly	UL Design No.	Concrete Type	Profile (Gauge)	Max Span	Fireproofing Required
1 HOUR	P921	Lightweight	B (22-16)	10'0"	No
2 HOUR ¹	P925	Insulating			
	P928				
	P936				

1. For 2 hour rated assembly wire mesh must be used.

Please refer to the current UL fire Resistance Directory and ICBO Evaluation Report No. 3260 for additional information.

Alternative Fastening Methods:

For attachment of decking, for methods other than welding, refer to the following technical information:

(a.) Screwed and Pinned Attachments

ICBO Report No.	Company
3056 and 4254 . . .	ITW, Buildex Division
3829	Pneutek, Inc.
2197	Hilti Fastening Systems

Code Approvals

ASC's steel deck profiles have been evaluated or approved for use by:

1. ICC Evaluation Service Report No. 1414
2. City of Los Angeles Research Report Nos. 23783, 23784 and 25762
3. Factory Mutual
4. Underwriter's Laboratory Fire Resistance Directory

Manufacturing Facilities

ASC Steel Deck • Sacramento, CA
2110 Enterprise Boulevard
West Sacramento, CA 95691
916-372-6851
800-726-2727

ASC Steel Deck • Fontana, CA
8432 Almeria Avenue
Fontana, CA 92335

Visit us at:
www.ascsteeldeck.com

