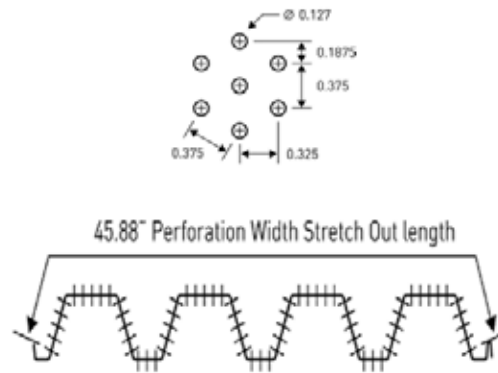
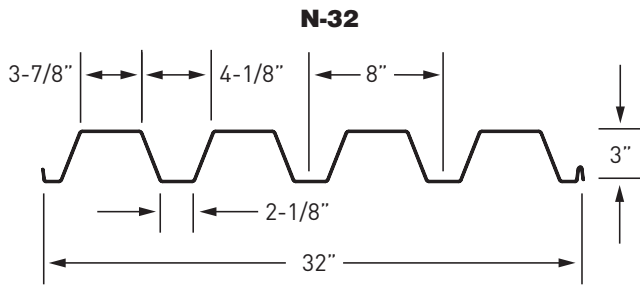


7.7 DGN-32AT & N-32AT

Total Perforated Acustadek®



Panel Properties

Gage	Weight w psf	Base Metal Thickness t in	Yield Strength F _y ksi	Tensile Strength F _u ksi	Gross Section Properties				
					Area A _g in ² /ft	Moment of Inertia I _g in ⁴ /ft	Distance to N.A. from Bottom y _b in	Section Modulus S _g in ³ /ft	Radius of Gyration r in
22	1.34	0.0299	50	65	0.394	0.718	1.61	0.342	1.195
20	1.60	0.0359	50	65	0.471	0.853	1.61	0.404	1.193
18	2.12	0.0478	50	65	0.622	1.123	1.62	0.530	1.189
16	2.63	0.0598	50	65	0.772	1.386	1.62	0.650	1.185

Gage	Effective Section Modulus for Bending at F _y					Effective Moment of Inertia for Deflection at Service Load			
	Area A _{e+} in ² /ft	Section Modulus S _{e+} in ³ /ft	Distance to N.A. from Bottom y _b in	Section Modulus S _{e-} in ³ /ft	Distance to N.A. from Bottom y _b in	Moment of Inertia I _{e+} in ⁴ /ft	Moment of Inertia I _{e-} in ⁴ /ft	Uniform Load Only	
								I _e = (2I _{e+} +I _{e-})/3	I _{e+} in ⁴ /ft
22	0.230	0.246	1.36	0.282	1.61	0.567	0.658	0.618	0.678
20	0.316	0.314	1.40	0.355	1.61	0.669	0.815	0.730	0.828
18	0.513	0.460	1.46	0.491	1.66	1.058	1.123	1.080	1.123
16	0.739	0.627	1.52	0.648	1.63	1.362	1.386	1.370	1.386

Reactions at Supports (plf) Based on Web Crippling

Gage	Condition	Bearing Length of Webs							
		ASD, R/Ω				LRFD, φR			
		1"	1.5"	2"	3"	1"	1.5"	2"	3"
22	End	500	566	622	716	764	866	952	1095
	Interior	876	973	1056	1194	1303	1448	1570	1776
20	End	709	799	876	1004	1084	1223	1340	1536
	Interior	1240	1371	1482	1669	1844	2040	2205	2482
18	End	1221	1367	1490	1697	1868	2092	2280	2597
	Interior	2133	2343	2519	2816	3173	3485	3748	4189
16	End	1864	2076	2254	2554	2852	3176	3449	3907
	Interior	3260	3560	3814	4239	4849	5296	5673	6305

Constants h = 3.06" r = 0.125" θ = 70.7°

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gauge	Span	Limit Condition	Panel Span (Support Spacing)								
			4' - 0"	6' - 0"	8' - 0"	10' - 0"	12' - 0"	14' - 0"	16' - 0"	18' - 0"	20' - 0"
22	Single Span	f_b / Ω	307	136	77	49	34	25	19	15	12
		Φf_b	461	205	115	74	51	38	29	23	18
		L/360	422	125	53	27	16	10	7	5	3
		L/240	633	188	79	41	23	15	10	7	5
		L/180	844	250	106	54	31	20	13	9	7
	L/120	1266	375	158	81	47	30	20	14	10	
	Double Span	f_b / Ω	352	156	88	56	39	29	22	17	14
		Φf_b	529	235	132	85	59	43	33	26	21
		L/360	1017	301	127	65	38	24	16	11	8
		L/240	1525	452	191	98	56	36	24	17	12
		L/180	2033	602	254	130	75	47	32	22	16
	L/120	3050	904	381	195	113	71	48	33	24	
	Triple Span	f_b / Ω	440	195	110	70	49	36	27	22	18
		Φf_b	661	294	165	106	73	54	41	33	26
		L/360	796	236	100	51	29	19	12	9	6
L/240		1195	354	149	76	44	28	19	13	10	
L/180		1593	472	199	102	59	37	25	17	13	
L/120	2389	708	299	153	88	56	37	26	19		
20	Single Span	f_b / Ω	392	174	98	63	44	32	24	19	16
		Φf_b	589	262	147	94	65	48	37	29	24
		L/360	498	148	62	32	18	12	8	5	4
		L/240	748	222	93	48	28	17	12	8	6
		L/180	997	295	125	64	37	23	16	11	8
	L/120	1495	443	187	96	55	35	23	16	12	
	Double Span	f_b / Ω	443	197	111	71	49	36	28	22	18
		Φf_b	666	296	166	107	74	54	42	33	27
		L/360	1201	356	150	77	44	28	19	13	10
		L/240	1801	534	225	115	67	42	28	20	14
		L/180	2402	712	300	154	89	56	38	26	19
	L/120	3602	1067	450	231	133	84	56	40	29	
	Triple Span	f_b / Ω	554	246	138	89	62	45	35	27	22
		Φf_b	832	370	208	133	92	68	52	41	33
		L/360	941	279	118	60	35	22	15	10	8
L/240		1411	418	176	90	52	33	22	15	11	
L/180		1881	557	235	120	70	44	29	21	15	
L/120	2822	836	353	181	105	66	44	31	23		
18	Single Span	f_b / Ω	574	255	143	92	64	47	36	28	23
		Φf_b	863	383	216	138	96	70	54	43	35
		L/360	738	219	92	47	27	17	12	8	6
		L/240	1106	328	138	71	41	26	17	12	9
		L/180	1475	437	184	94	55	34	23	16	12
	L/120	2213	656	277	142	82	52	35	24	18	
	Double Span	f_b / Ω	613	272	153	98	68	50	38	30	25
		Φf_b	921	409	230	147	102	75	58	45	37
		L/360	1777	526	222	114	66	41	28	19	14
		L/240	2665	790	333	171	99	62	42	29	21
		L/180	3553	1053	444	227	132	83	56	39	28
	L/120	5330	1579	666	341	197	124	83	58	43	
	Triple Span	f_b / Ω	766	340	191	123	85	63	48	38	31
		Φf_b	1151	511	288	184	128	94	72	57	46
		L/360	1392	412	174	89	52	32	22	15	11
L/240		2088	619	261	134	77	49	33	23	17	
L/180		2783	825	348	178	103	65	43	31	22	
L/120	4175	1237	522	267	155	97	65	46	33		
16	Single Span	f_b / Ω	782	348	196	125	87	64	49	39	31
		Φf_b	1176	523	294	188	131	96	73	58	47
		L/360	936	277	117	60	35	22	15	10	7
		L/240	1403	416	175	90	52	33	22	15	11
		L/180	1871	554	234	120	69	44	29	21	15
	L/120	2807	832	351	180	104	65	44	31	22	
	Double Span	f_b / Ω	808	359	202	129	90	66	51	40	32
		Φf_b	1215	540	304	194	135	99	76	60	49
		L/360	2254	668	282	144	83	53	35	25	18
		L/240	3380	1002	423	216	125	79	53	37	27
		L/180	4507	1335	563	288	167	105	70	49	36
	L/120	6761	2003	845	433	250	158	106	74	54	
	Triple Span	f_b / Ω	1010	449	253	162	112	82	63	50	40
		Φf_b	1519	675	380	243	169	124	95	75	61
		L/360	1765	523	221	113	65	41	28	19	14
L/240		2648	785	331	169	98	62	41	29	21	
L/180		3531	1046	441	226	131	82	55	39	28	
L/120	5296	1569	662	339	196	124	83	58	42		