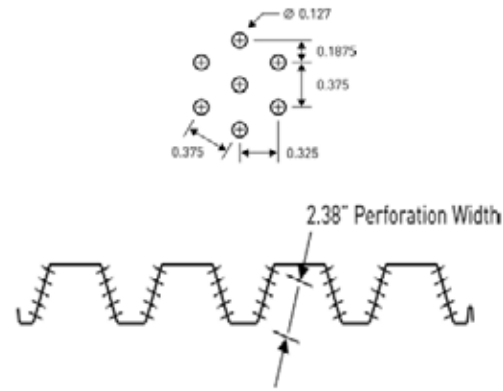
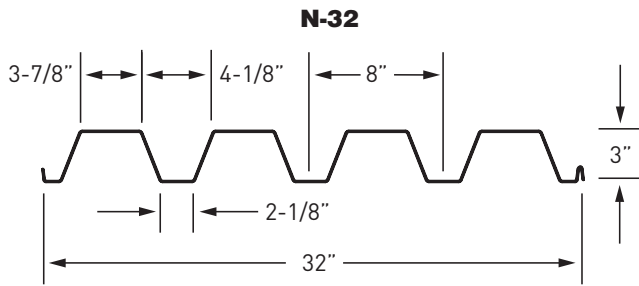


7.6 DGN-32AW & N-32AW Web Perforated Acustadek®



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	1.66	0.0299	50	65	0.489	0.800	1.71	0.449	1.195
20	1.99	0.0359	50	65	0.585	0.951	1.71	0.533	1.193
18	2.64	0.0478	50	65	0.775	1.253	1.72	0.698	1.189
16	3.28	0.0598	50	65	0.963	1.547	1.72	0.858	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	
								$I_d = (2I_{e+} + I_{e-})/3$	
22	0.267	0.315	1.35	0.392	1.71	0.654	0.740	0.703	0.760
20	0.366	0.407	1.39	0.487	1.71	0.793	0.913	0.846	0.926
18	0.593	0.610	1.47	0.657	1.75	1.198	1.253	1.216	1.253
16	0.856	0.822	1.54	0.857	1.73	1.529	1.547	1.535	1.547

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 $h = 3.06''$ $r = 0.125''$ $\theta = 70.7^\circ$

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	393	175	98	63	44	32	25	19	16
		Φf_b	591	263	148	95	66	48	37	29	24
		L/360	480	142	60	31	18	11	8	5	4
		L/240	720	213	90	46	27	17	11	8	6
		L/180	960	284	120	61	36	22	15	11	8
	L/120	1440	427	180	92	53	34	23	16	12	
	Double Span	f_b / Ω	489	217	122	78	54	40	31	24	20
		Φf_b	735	327	184	118	82	60	46	36	29
		L/360	1156	343	145	74	43	27	18	13	9
		L/240	1735	514	217	111	64	40	27	19	14
		L/180	2313	685	289	148	86	54	36	25	19
	L/120	3469	1028	434	222	128	81	54	38	28	
	Triple Span	f_b / Ω	611	272	153	98	68	50	38	30	24
		Φf_b	919	408	230	147	102	75	57	45	37
		L/360	906	268	113	58	34	21	14	10	7
L/240		1359	403	170	87	50	32	21	15	11	
L/180		1812	537	226	116	67	42	28	20	14	
L/120	2718	805	340	174	101	63	42	30	22		
20	Single Span	f_b / Ω	508	226	127	81	56	41	32	25	20
		Φf_b	763	339	191	122	85	62	48	38	31
		L/360	578	171	72	37	21	13	9	6	5
		L/240	867	257	108	55	32	20	14	10	7
		L/180	1155	342	144	74	43	27	18	13	9
	L/120	1733	514	217	111	64	40	27	19	14	
	Double Span	f_b / Ω	608	270	152	97	68	50	38	30	24
		Φf_b	913	406	228	146	101	75	57	45	37
		L/360	1392	412	174	89	52	32	22	15	11
		L/240	2087	618	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	
	Triple Span	f_b / Ω	759	338	190	122	84	62	47	38	30
		Φf_b	1141	507	285	183	127	93	71	56	46
		L/360	1090	323	136	70	40	25	17	12	9
L/240		1635	485	204	105	61	38	26	18	13	
L/180		2180	646	273	140	81	51	34	24	17	
L/120	3271	969	409	209	121	76	51	36	26		
18	Single Span	f_b / Ω	761	338	190	122	85	62	48	38	30
		Φf_b	1144	508	286	183	127	93	71	56	46
		L/360	830	246	104	53	31	19	13	9	7
		L/240	1246	369	156	80	46	29	19	14	10
		L/180	1661	492	208	106	62	39	26	18	13
	L/120	2491	738	311	159	92	58	39	27	20	
	Double Span	f_b / Ω	820	364	205	131	91	67	51	40	33
		Φf_b	1232	548	308	197	137	101	77	61	49
		L/360	2000	593	250	128	74	47	31	22	16
		L/240	3000	889	375	192	111	70	47	33	24
		L/180	4000	1185	500	256	148	93	63	44	32
	L/120	6001	1778	750	384	222	140	94	66	48	
	Triple Span	f_b / Ω	1025	455	256	164	114	84	64	51	41
		Φf_b	1540	684	385	246	171	126	96	76	62
		L/360	1567	464	196	100	58	37	24	17	13
L/240		2350	696	294	150	87	55	37	26	19	
L/180		3134	929	392	201	116	73	49	34	25	
L/120	4701	1393	588	301	174	110	73	52	38		
16	Single Span	f_b / Ω	1025	456	256	164	114	84	64	51	41
		Φf_b	1541	685	385	247	171	126	96	76	62
		L/360	1048	311	131	67	39	24	16	12	8
		L/240	1572	466	197	101	58	37	25	17	13
		L/180	2096	621	262	134	78	49	33	23	17
	L/120	3145	932	393	201	116	73	49	35	25	
	Double Span	f_b / Ω	1069	475	267	171	119	87	67	53	43
		Φf_b	1607	714	402	257	179	131	100	79	64
		L/360	2525	748	316	162	94	59	39	28	20
		L/240	3787	1122	473	242	140	88	59	42	30
		L/180	5050	1496	631	323	187	118	79	55	40
	L/120	7575	2244	947	485	281	177	118	83	61	
	Triple Span	f_b / Ω	1336	594	334	214	148	109	84	66	53
		Φf_b	2009	893	502	321	223	164	126	99	80
		L/360	1978	586	247	127	73	46	31	22	16
L/240		2967	879	371	190	110	69	46	33	24	
L/180		3956	1172	495	253	147	92	62	43	32	
L/120	5934	1758	742	380	220	138	93	65	47		