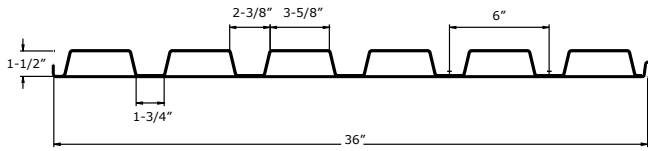
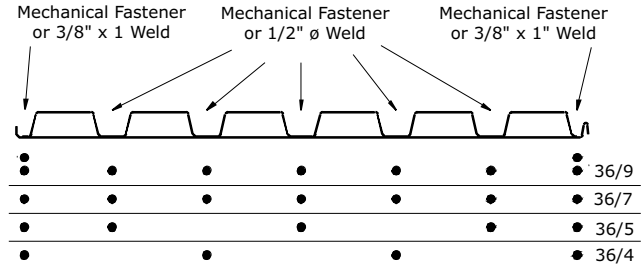


2.1 DGBF-36 & BF-36

BF-36



Attachment Patterns



Note: Weld sizes are effective not visible. Refer to AISI S100-2007 or AWS D1.3 for additional welding requirements.

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
20/20	3.54	0.0359/0.036	40	55	1.047	0.460	0.58	0.462	0.663
20/18	4.01	0.0359/0.047	40	55	1.190	0.503	0.52	0.472	0.650
20/16	4.68	0.0359/0.059	40	55	1.330	0.535	0.48	0.479	0.634
18/20	4.35	0.0478/0.036	40	55	1.231	0.564	0.65	0.601	0.677
18/18	4.83	0.0478/0.047	40	55	1.370	0.614	0.59	0.613	0.670
18/16	5.35	0.0478/0.059	40	55	1.521	0.661	0.55	0.624	0.659
16/20	5.03	0.0598/0.036	40	55	1.423	0.661	0.70	0.736	0.682
16/18	5.51	0.0598/0.047	40	55	1.562	0.721	0.65	0.752	0.679
16/16	6.03	0.0598/0.059	40	55	1.713	0.777	0.60	0.767	0.674

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	
								$I_u = (2I_e + I_g)/3$	$I_u = (2I_e + I_g)/3$
20/20	0.691	0.288	0.44	0.442	0.71	0.370	0.402	0.401	0.421
20/18	0.797	0.294	0.39	0.456	0.63	0.401	0.462	0.435	0.475
20/16	0.914	0.299	0.36	0.468	0.55	0.423	0.517	0.461	0.523
18/20	0.906	0.433	0.54	0.573	0.76	0.508	0.496	0.526	0.519
18/18	1.016	0.443	0.50	0.590	0.70	0.550	0.560	0.572	0.578
18/16	1.141	0.451	0.46	0.608	0.63	0.590	0.632	0.613	0.642
16/20	1.141	0.596	0.63	0.701	0.80	0.639	0.592	0.646	0.615
16/18	1.252	0.610	0.58	0.723	0.74	0.695	0.660	0.704	0.681
16/16	1.377	0.622	0.54	0.744	0.68	0.749	0.741	0.758	0.753

Reactions at Supports (plf) Based on Web Crippling

Gage	Condition	Bearing Length of Webs							
		Allowable (R_n/Ω)				Factored (ΦR_n)			
		1"	1.5"	2"	3"	1"	1.5"	2"	3"
22	End	586	664	730	840	897	1016	1117	1285
	Interior	934	1038	1126	1273	1390	1544	1675	1894
20	End	822	927	1016	1164	1258	1418	1554	1781
	Interior	1320	1461	1579	1778	1964	2173	2349	2644
18	End	1393	1561	1701	1938	2132	2388	2603	2965
	Interior	2268	2491	2679	2994	3374	3705	3985	4454
16	End	2106	2345	2547	2885	3222	3588	3897	4415
	Interior	3462	3781	4050	4501	5150	5624	6065	6696

Web Crippling Constraints

$h=1.32"$

$r=0.125"$

$\theta=78.3^\circ$

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

Gage	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"
20/20	SS	f_b / Ω	287	128	72	46	32	23	18	14	11
		Φf_b	456	203	114	73	51	37	29	23	18
		L/360	274	81	34	18	10	6	4	3	2
		L/240	-	122	51	26	15	10	6	5	3
		L/180	-	-	68	35	20	13	9	6	4
	L/120	-	-	-	-	30	19	13	9	7	
	DS	f_b / Ω	441	196	110	71	49	36	28	22	18
		Φf_b	700	311	175	112	78	57	44	35	28
		L/360	-	-	87	44	26	16	11	8	6
		L/240	-	-	-	66	38	24	16	11	8
		L/180	-	-	-	-	-	32	22	15	11
	L/120	-	-	-	-	-	-	-	-	-	17
	TS	f_b / Ω	449	200	112	72	50	37	28	22	18
		Φf_b	713	317	178	114	79	58	45	35	29
		L/360	-	188	79	41	23	15	10	7	5
L/240		-	-	-	61	35	22	15	10	8	
L/180		-	-	-	-	47	30	20	14	10	
L/120	-	-	-	-	-	-	-	-	21	15	
20/18	SS	f_b / Ω	293	130	73	47	33	24	18	14	12
		Φf_b	465	207	116	74	52	38	29	23	19
		L/360	-	88	37	19	11	7	5	3	2
		L/240	-	-	56	29	17	10	7	5	4
		L/180	-	-	-	38	22	14	9	7	5
	L/120	-	-	-	-	-	21	14	10	7	
	DS	f_b / Ω	455	202	114	73	51	37	28	22	18
		Φf_b	722	321	181	116	80	59	45	36	29
		L/360	-	-	98	50	29	18	12	9	6
		L/240	-	-	-	-	43	27	18	13	9
		L/180	-	-	-	-	-	36	24	17	13
	L/120	-	-	-	-	-	-	-	-	-	-
	TS	f_b / Ω	458	204	114	73	51	37	29	23	18
		Φf_b	726	323	182	116	81	59	45	36	29
		L/360	-	-	89	46	27	17	11	8	6
L/240		-	-	-	69	40	25	17	12	9	
L/180		-	-	-	-	-	33	22	16	11	
L/120	-	-	-	-	-	-	-	-	-	17	
20/16	SS	f_b / Ω	299	133	75	48	33	24	19	15	12
		Φf_b	474	211	118	76	53	39	30	23	19
		L/360	-	93	39	20	12	7	5	3	3
		L/240	-	-	59	30	17	11	7	5	4
		L/180	-	-	-	40	23	15	10	7	5
	L/120	-	-	-	-	-	22	15	10	8	
	DS	f_b / Ω	467	208	117	75	52	38	29	23	19
		Φf_b	741	329	185	119	82	61	46	37	30
		L/360	-	-	108	55	32	20	13	9	7
		L/240	-	-	-	-	48	30	20	14	10
		L/180	-	-	-	-	-	-	27	19	14
	L/120	-	-	-	-	-	-	-	-	-	-
	TS	f_b / Ω	467	207	117	75	52	38	29	23	19
		Φf_b	740	329	185	118	82	60	46	37	30
		L/360	-	-	99	50	29	18	12	9	6
L/240		-	-	-	-	44	28	18	13	9	
L/180		-	-	-	-	-	-	37	25	17	13
L/120	-	-	-	-	-	-	-	-	-	-	

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

Gage	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"
16/20	SS	f_b / Ω	595	264	149	95	66	49	37	29	24
		Φf_b	944	419	236	151	105	77	59	47	38
		L/360	441	131	55	28	16	10	7	5	4
		L/240	-	196	83	42	25	15	10	7	5
		L/180	-	262	110	56	33	21	14	10	7
	L/120	-	-	-	85	49	31	21	15	11	
	DS	f_b / Ω	700	311	175	112	78	57	44	35	28
		Φf_b	1110	493	278	178	123	91	69	55	44
		L/360	-	300	126	65	37	24	16	11	8
		L/240	-	-	-	97	56	35	24	17	12
		L/180	-	-	-	-	75	47	32	22	16
	L/120	-	-	-	-	-	-	-	33	24	
	TS	f_b / Ω	875	389	219	140	97	71	55	43	35
		Φf_b	1388	617	347	222	154	113	87	69	56
		L/360	-	275	116	59	34	22	14	10	7
L/240		-	-	174	89	52	32	22	15	11	
L/180		-	-	-	119	69	43	29	20	15	
L/120	-	-	-	-	-	65	43	31	22		
16/18	SS	f_b / Ω	608	270	152	97	68	50	38	30	24
		Φf_b	965	429	241	154	107	79	60	48	39
		L/360	481	142	60	31	18	11	8	5	4
		L/240	-	214	90	46	27	17	11	8	6
		L/180	-	-	120	62	36	22	15	11	8
	L/120	-	-	-	92	53	34	23	16	12	
	DS	f_b / Ω	722	321	180	115	80	59	45	36	29
		Φf_b	1145	509	286	183	127	93	72	57	46
		L/360	-	-	140	72	41	26	17	12	9
		L/240	-	-	-	107	62	39	26	18	13
		L/180	-	-	-	-	-	52	35	25	18
	L/120	-	-	-	-	-	-	-	-	27	
	TS	f_b / Ω	902	401	226	144	100	74	56	45	36
		Φf_b	1431	636	358	229	159	117	89	71	57
		L/360	-	304	128	66	38	24	16	11	8
L/240		-	-	192	98	57	36	24	17	12	
L/180		-	-	-	131	76	48	32	23	16	
L/120	-	-	-	-	-	72	48	34	25		
16/16	SS	f_b / Ω	620	276	155	99	69	51	39	31	25
		Φf_b	984	437	246	157	109	80	62	49	39
		L/360	518	153	65	33	19	12	8	6	4
		L/240	-	230	97	50	29	18	12	9	6
		L/180	-	-	129	66	38	24	16	11	8
	L/120	-	-	-	-	58	36	24	17	12	
	DS	f_b / Ω	742	330	186	119	82	61	46	37	30
		Φf_b	1178	524	294	188	131	96	74	58	47
		L/360	-	-	155	79	46	29	19	14	10
		L/240	-	-	-	-	69	43	29	20	15
		L/180	-	-	-	-	-	58	39	27	20
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	928	412	232	148	103	76	58	46	37
		Φf_b	1472	654	368	236	164	120	92	73	59
		L/360	-	336	142	73	42	26	18	12	9
L/240		-	-	213	109	63	40	27	19	14	
L/180		-	-	-	145	84	53	35	25	18	
L/120	-	-	-	-	-	-	53	37	27		