



Perf-O Grip™ design load tables

Steel, aluminum, stainless steel

2-Hole planks - 5" width	37
3-Hole planks - 7" width	38
5-Hole planks - 10" width.....	39
6-Hole Planks - 12" width.....	40

Steel, aluminum

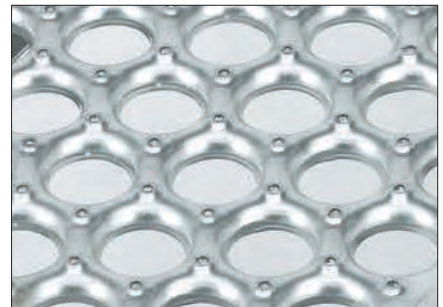
10-Hole planks - 18" width	41
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Steel

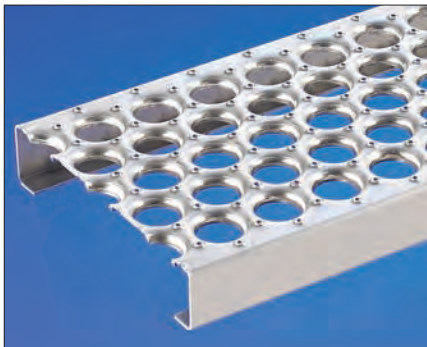
13-Hole planks - 24" width	42
16-Hole planks - 30" width	43
Walkways - 24" & 30" width	44



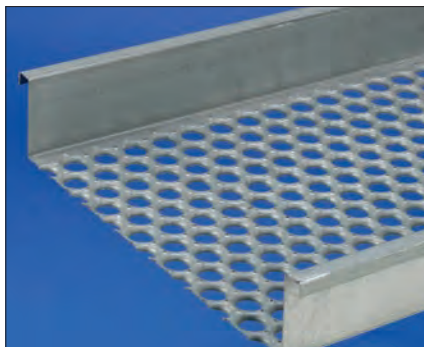
Perf-O Grip 2 pattern



Perf-O Grip pattern



Perf-O Grip grating



Perf-O Grip walkway



Perf-O Grip stair tread

Perf-O Grip safety grating

The unique surface of large debossed holes and perforated buttons helps provide maximum slip protection and performance under practically all conditions and in every direction.

- Allow fluids, mud, chips and other debris to drain away.
- With 5 inch high side channels, Perf-O Grip™ walkways meet OSHA requirements for toeboards on elevated structures.
- Canadian OH & S compliant designs are also available.
- Cushions the impact of footfalls thereby lessening worker fatigue and increasing efficiency.
- Available in 2-hole (5" wide) through 16-hole (30" wide).

Perf-O Grip "2" safety grating

We offer a second style of Perf-O Grip grating.

- Features 1⁵/₁₆" on center hole spacing (compared to 2" on the original style).
- Can be produced with safety end margins on its 2-hole (5" wide) through 6 hole (12" wide) plank
- Can be made without end margins on its 10-hole (18" wide) through 16-hole (30" wide) plank.

Safe surface - grips soles in all directions

- Non-slip surfaces ideal for inside or outside locations where mud, ice, snow, oil and detergents can create hazardous walking conditions.
- Circular openings (38% of surface area depending on product size) are small enough to catch most falling tools and other dangerous objects.
- Self-cleaning open design permits quick drainage of fluids, chips, grease and mud.
- Permits ventilation and lighting flow.
- Ice accumulation shears easily under normal foot pressure.
- Open design allows convenient access for cleaning.
- Easily cleaned with brush, liquid or air spray.

Helps extend life

- High load capacity, long-life, and high strength-to-weight performance; achieved through depth of section and structural design.
- Formed struts with integral side channels form a plank can support loads with minimum transverse and longitudinal deflection.
- No rivets or pressure joints to break or loosen.
- Heavy load-carrying capacity with minimal deflection
- Rugged durability with longer-lasting performance.

Fast installation

- Light, easy-to-handle planks make installation simple and quick.

- Can be handled by one person.
- Most sections are rapidly bolted, clamped or welded into place.
- Easily field cut at virtually any angle, or fabricated to adapt to field conditions.
- Attachment devices permit fastening to most existing surfaces, allowing for fast installation and disassembly.

Economical to install and use

- Long-lasting, rust-resistant materials and finishes.
- Standard mill-galvanized finish resists corrosion to provide lasting surfaces.
- High-strength aluminum, Type 316-2B and Type 304-2B stainless steels are available to provide maximum corrosion resistance.
- Plain unpainted steel (HRP&O) is available for those installations requiring paint.
- Lightweight yet brawny panels permit substantial reduction in structural steel requirements.

Safety, durability and versatility

- Variety of standard widths and channel heights are available.
- Numerous non-standard shapes and sizes to meet almost any requirement of strength, size, durability, weight, finish, appearance and application.
- One-piece construction.
- No welds or rivets to fail — minimizes need for field fabrication. Special shapes and forming can be accomplished to suit unusual requirements.
- All surfaces are accessible to brush or spray, making it simple and economical to apply finish coatings.
- May be hot dipped galvanized after fabrication, anodized, plated, plastic-coated or otherwise finished to suit job requirements.
- Available in materials and sizes to meet most load/span requirements.
- May be used as is, or banded, cut, welded or notched to suit requirements.

Stocking levels

- 5", 7", 10" and 12" widths and in 10'-0" (120") and 12'-0" (144") lengths for planks.
- 24", 30" and 36" widths, in 10'-0" (120") and 12'-0" (144") lengths for walkways.
- Other lengths can be manufactured per order requirements.
- Standard metals are 11 gauge and 13 gauge carbon steel (mill-galvanized), 16 gauge stainless steel (type 304-2B to 12" wide), and .125" aluminum.
- Perf-O Grip can also be manufactured in HRPO steel and stainless steel (type 304-2B) on special order.

How to read load tables

To select the proper size of Perf-O Grip™ grating, determine load, clear span and deflection requirements by first determining your loading requirements.

Example — Clear span of 4'-0" with a concentrated load requirement of 600 lbs. at 0.25" maximum deflection, for a 10'-0" wide plank; Refer to the 5-Hole plank (10" width), then locate the clear span subheading for 4'-0" to find the first occurrence of 600 lbs. (or greater) concentrated load (C). In this example, the 13 gauge, 2" depth product (part number P52013) carries a load of 648 lbs. with a 0.10" deflection.

While this is one product which meets the minimum requirements, other options might be selected to carry greater loads. For economical selection, choose the greatest width that will support the load consistent with job requirements and choose deeper channels rather than heavier steel gauges.

How load tables were prepared

The values shown in the following tables are based on actual load tests. The tables have been prepared in accordance with the provisions of the AISI Specification for the Design of Cold-Formed Steel Structural Members, 1986 edition.

These load table values are based on consideration of side channel flexure only and do not consider grating surface performance. Side channel flexure occur when the channels at midspan of the plank deflect relative to support points. To verify the performance of the side channels, samples were loaded with concentrated and uniform loads at different spans (see figures 1 and 2). To approximate the most severe condition, there were no attachments between the channels and the supports.

Deflection values indicated in the tables are the midspan side channel deflection produced when the allowable uniform or allowable concentrated load is placed at midspan. Load data is based on yield strength of 33,000 psi for steel, 27,000 psi for aluminum, 35,000 psi for type 304 stainless steel, and 30,000 psi for type 316-2B stainless steel.

(U) = Allowable uniform load (lbs./ft.2)

(C) = Allowable concentrated load (lbs.) applied by 2" round bar across full width of grating

(D) = Vertical deflection (inches) of side channels at mid span resulting from allowable load

Load and deflection conversion formulas

In the elastic range, deflection is proportional to the applied load for both uniform and concentrated loads. This relationship can be used to determine the deflection that any load which is less than the allowable load will produce, (as shown in **Example A.**) If desired, the load which will produce a specific deflection can also be determined if the load is in the elastic range (as illustrated in **Example B.**)

Example A

What deflection will a 300 lb. midspan concentrated load produce on a plank spanning 5'-0" (part number P133011 - page 42)?

$$C = 1517 \text{ lbs.} \quad D = 0.09''$$

$$D @ 300 \text{ lbs.} = 0.09'' \times (300 \text{ lbs.} \div 1517 \text{ lbs.}) = 0.02 \text{ inches}$$

Example B

If a plank (part number P132011 - page 42) is spanning 7'-0", what midspan concentrated load will produce a .25" deflection?

$$C = 598 \text{ lbs.} \quad D = 0.27''$$

$$C @ .25'' = 598 \text{ lbs.} \times (0.25'' \div 0.27'') = 554 \text{ lbs.}$$

Special note on planks

As width increases, grating surface performance becomes more critical. Thus, for Perf-O Grip grating widths greater than 12", use of the grating surface splice kit is recommended to mechanically join butt ends of plank sections.

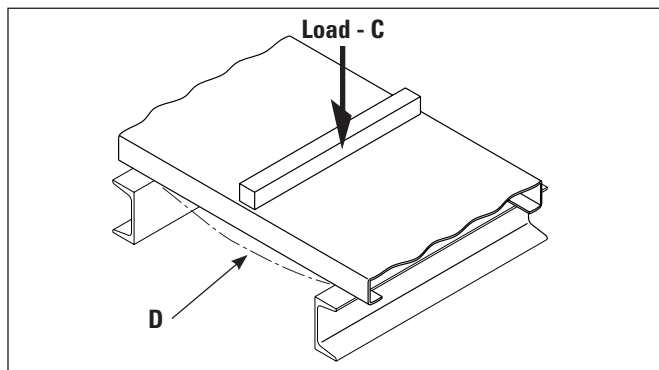


Figure 1. Concentrated load

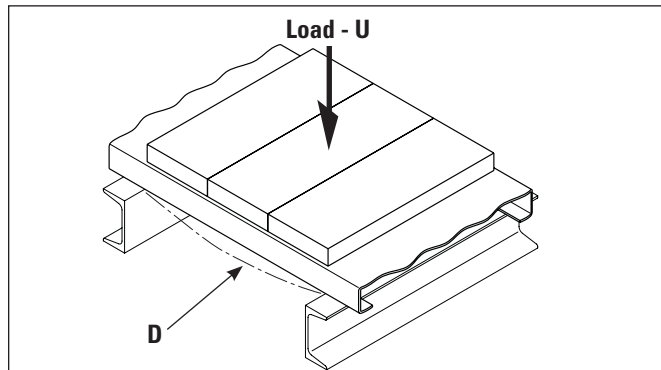
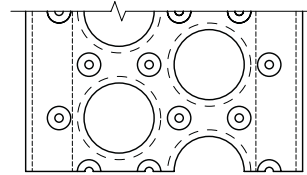
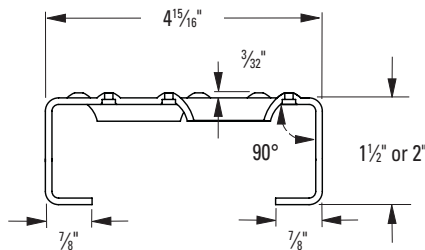


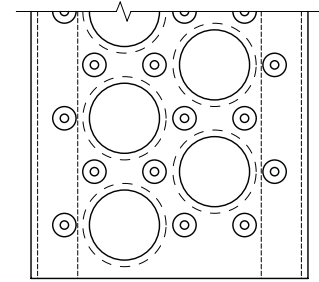
Figure 2. Uniform load

Perf-O Grip Grating - Design Load Tables

2-Hole plank — 5" width nominal



Perf-O Grip pattern



Perf-O Grip 2 pattern

Perf-O Grip Grating

Plank selection/design tables

Allowable loads and deflections: U=Uniform load (lb./ft.²) C= Concentrated load (lb.) D=Deflection (in.)

Material Gauge	Channel Depth in. (mm)	Weight lb./in. ft. (kg/m)	Catalog Number	Load/Defl. Code	Span																
					2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
Steel 13 ga.	1 1/2" (38.1)	2.6 (3.8)	P21513† A21513	U	2008	1287	895	659	505	400	325	269	227	194	168	146	130	103	85	70	60
				D	.05	.08	.11	.15	.20	.25	.31	.38	.45	.53	.62	.71	.82	1.04	1.30	1.57	1.90
				C	836	670	559	481	421	375	338	308	284	263	244	229	216	194	176	162	150
	2" (50.8)	2.8 (4.1)	P22013† A22013	U	3035	1944	1352	994	762	603	490	405	341	292	253	221	194	155	126	105	89
				D	.04	.06	.09	.12	.15	.19	.24	.29	.34	.41	.47	.54	.62	.79	.98	1.20	1.43
				C	1228	1003	845	725	635	566	510	465	427	395	368	344	324	290	263	240	223
Alum. 0.125"	2" (50.8)	1.3 (1.9)	P220125† A220125	U	2910	1863	1294	950	728	575	466	385	323	276	237	207	182	143	116	96	81
				D	.08	.12	.18	.24	.32	.40	.50	.60	.72	.84	.98	1.12	1.27	1.61	1.99	2.41	2.87
				C	1213	970	809	693	606	539	485	441	404	373	346	323	303	270	243	221	202
Stainless Steel* 16 ga.	2" (50.8)	2.1 (3.1)	P22016S†	U	2781	2049	1422	1046	800	632	512	424	355	303	262	227	200	159	128	106	89
				D	.05	.08	.12	.16	.21	.26	.32	.39	.46	.54	.63	.72	.82	1.04	1.28	1.56	1.85
				C	1334	1066	889	761	666	593	534	485	445	410	381	355	334	296	267	243	223
				D	.04	.06	.09	.13	.16	.21	.26	.31	.37	.43	.50	.58	.66	.83	1.03	1.25	1.48

Note: Also available in 11 ga.

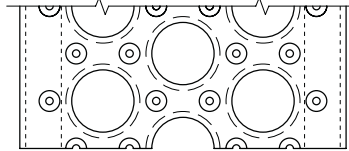
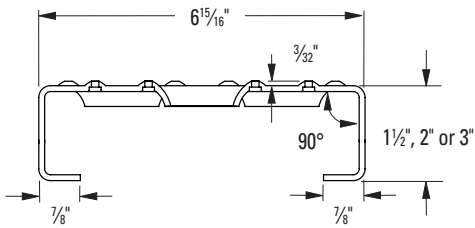
† Perf-O Grip: To order standard Perf-O Grip grating use part number "Pxxxx".

Perf-O Grip 2: To order Perf-O Grip 2 grating use part number "Axxxx". End margins are standard on Perf-O Grip 2 grating 2-hole through 6-hole plank only (5" through 12" widths). Standard lengths are 10'-0" and 12'-0".

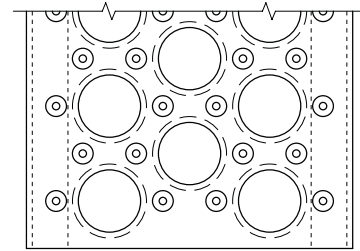
* Available on special order. Consult factory.

Perf-O Grip Grating - Safe Loading Tables

3-Hole plank — 7" width nominal



Perf-O Grip pattern



Perf-O Grip 2 pattern

Plank selection/design tables

Allowable loads and deflections: U=Uniform load (lb./ft.²) C= Concentrated load (lb.) D=Deflection (in.)

Material Gauge	Channel Depth in. (mm)	Weight lb./lin. ft. (kg/m)	Catalog Number	Load/Defl. Code	Span																
					2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
Steel 13 ga.	1 1/2" (38.1)	3.0 (4.4)	P31513† A31513	U	1536	984	685	504	387	306	249	206	174	149	129	112	100	79	65	55	46
				D	.05	.07	.11	.14	.19	.24	.29	.36	.43	.50	.58	.67	.77	.98	1.22	1.51	1.81
				C	914	731	609	522	457	406	366	332	305	283	263	246	232	208	190	174	162
	2" (50.8)	3.3 (4.9)	P32013† A32013	U	1965	1473	1024	754	578	458	371	307	259	222	192	167	147	118	96	80	68
				D	.03	.06	.08	.11	.14	.18	.23	.27	.33	.38	.44	.51	.58	.74	.92	1.13	1.36
				C	1369	1096	913	783	685	609	548	498	456	421	391	366	344	308	279	257	237
Steel 11 ga.	1 1/2" (38.1)	4.2 (6.2)	P31511† A31511	U	1981	1269	883	650	498	394	320	265	224	191	165	144	128	101	83	69	59
				D	.05	.07	.11	.15	.19	.24	.30	.36	.43	.51	.59	.68	.78	.98	1.22	1.50	1.81
				C	1165	932	777	666	582	518	467	426	391	362	337	316	297	266	241	222	205
	2" (50.8)	4.5 (6.7)	P32011† A32011	U	2899	1978	1375	1012	776	614	498	411	347	302	261	228	201	160	130	108	92
				D	.03	.06	.08	.11	.15	.19	.23	.28	.34	.40	.47	.54	.62	.78	.97	1.18	1.42
				C	1762	1410	1175	1032	904	805	726	661	607	573	533	499	469	420	380	348	321
	3" (76.2)	4.8 (7.1)	P33011† A33011	U	5806	3716	2581	1898	1454	1150	932	771	649	554	479	417	367	291	236	196	166
				D	.03	.04	.06	.08	.11	.13	.17	.20	.24	.28	.33	.37	.43	.54	.67	.81	.98
				C	3188	2550	2125	1822	1594	1417	1275	1159	1132	1050	976	913	857	764	690	630	581
Alum. 0.125"	2" (50.8)	1.5 (2.2)	P320125† A320125	U	2138	1491	1035	761	582	460	372	308	258	221	190	166	146	115	93	77	65
				D	.07	.14	.20	.27	.35	.44	.54	.66	.78	.92	1.07	1.23	1.39	1.76	2.18	2.64	3.14
				C	1509	1207	1006	862	755	671	604	549	503	464	431	402	377	335	302	274	252
Stainless Steel* 16 ga.	2" (50.8)	2.4 (3.6)	P32016S†	U	1419	1399	971	714	546	432	350	289	243	207	178	155	137	107	88	72	61
				D	.03	.07	.10	.13	.17	.22	.27	.33	.39	.46	.53	.61	.70	.88	1.09	1.31	1.56
				C	1275	1021	850	729	638	567	510	464	425	392	365	341	319	283	255	232	213
D	.03	.05	.08	.11	.14	.18	.22	.26	.31	.37	.43	.49	.56	.70	.87	1.05	1.25				

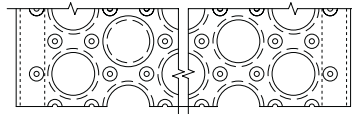
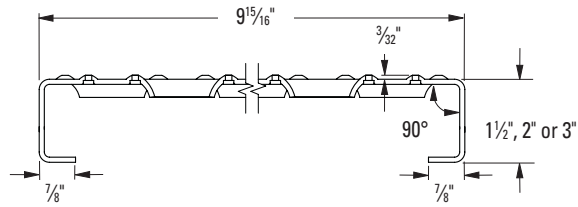
† Perf-O Grip: To order standard Perf-O Grip grating use part number "Pxxxxx".

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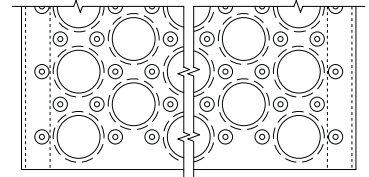
* Available on special order. Consult factory.

Perf-O Grip Grating - Safe Loading Tables

5-Hole plank — 10" width nominal



Perf-O Grip pattern



Perf-O Grip 2 pattern

Perf-O Grip Grating

Plank selection/design tables

Allowable loads and deflections: U=Uniform load (lb./ft.²) C= Concentrated load (lb.) D=Deflection (in.)

Material Gauge	Channel Depth in. (mm)	Weight lb./lin. ft. (kg/m)	Catalog Number	Load/Defl. Code	Span																
					2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
Steel 13 ga.	1 1/2" (38.1)	3.5 (5.2)	P51513† A51513	U	963	745	517	380	291	230	187	154	129	110	95	83	73	58	46	38	32
				D	.04	.08	.11	.15	.19	.24	.30	.36	.43	.51	.59	.67	.77	.98	1.20	1.44	1.71
				C	855	684	645	554	485	431	388	353	323	298	277	259	242	216	191	176	162
	2" (50.8)	3.9 (5.8)	P52013† A52013	U	1735	1110	771	568	435	344	281	232	196	167	144	126	110	88	70	60	50
				D	.04	.06	.08	.11	.15	.18	.23	.28	.33	.39	.45	.52	.59	.75	.91	1.14	1.34
				C	1297	1038	865	741	648	645	584	532	489	453	422	392	368	327	297	267	245
Steel 11 ga.	1 1/2" (38.1)	4.5 (6.7)	P51511† A51511	U	1385	888	618	455	349	276	225	186	157	134	117	101	90	71	59	48	41
				D	.05	.07	.10	.14	.18	.23	.29	.35	.41	.49	.57	.65	.75	.95	1.20	1.45	1.74
				C	1086	888	772	663	582	518	467	426	392	363	338	318	299	268	244	225	205
	2" (50.8)	5.1 (7.6)	P52011† A52011	U	2261	1447	1005	739	567	449	364	300	253	216	186	162	142	112	91	75	63
				D	.04	.06	.08	.11	.15	.19	.23	.28	.33	.39	.45	.52	.59	.75	.92	1.12	1.32
				C	1670	1336	1113	954	888	823	758	689	631	583	541	505	473	421	378	344	316
3" (76.2)	5.1 (7.6)	P53011† A53011	U	4214	2697	1873	1376	1053	832	674	557	468	399	344	300	263	208	168	139	117	
			D	.03	.04	.06	.08	.10	.13	.16	.19	.23	.27	.31	.35	.41	.52	.64	.77	.92	
			C	3095	2476	2064	1769	1548	1376	1238	1126	1032	952	927	902	878	781	702	638	585	
Alum. 0.125"	2" (50.8)	1.8 (2.7)	P520125† A520125	U	1048	1022	710	522	400	316	256	212	178	153	131	115	101	80	65	54	46
				D	.05	.12	.18	.24	.31	.40	.49	.59	.71	.83	.96	1.10	1.26	1.59	1.96	2.37	2.83
				C	1431	1145	954	818	715	636	572	520	477	440	409	382	358	318	286	260	238
Stainless Steel* 16 ga.	2" (50.8)	2.7 (4.0)	P52016S†	U	1418	907	630	463	354	280	226	187	158	134	115	101	88	70	57	47	39
				D	.04	.07	.10	.13	.17	.21	.26	.32	.38	.44	.52	.59	.67	.85	1.06	1.28	1.50
				C	1148	918	765	656	574	510	459	430	393	363	337	315	295	263	237	215	197
				D	.03	.05	.07	.10	.13	.17	.21	.26	.30	.36	.41	.48	.54	.69	.85	1.02	1.22

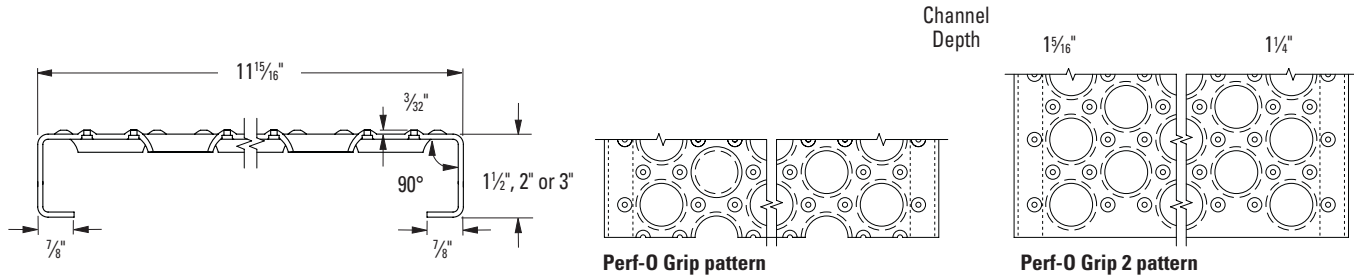
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Perf-O Grip 2: To order Perf-O Grip 2 grating use part number "Axxxxx". End margins are standard on Perf-O Grip 2 grating 2-hole through 6-hole plank only (5' through 12' widths). Standard lengths are 10'-0" and 12'-0".

* Available on special order. Consult factory.

Perf-O Grip Grating - Safe Loading Table

6-Hole plank — 12" width nominal



Plank selection/design tables

Allowable loads and deflections: U=Uniform load (lb./ft.²) C= Concentrated load (lb.) D=Deflection (in.)

Material Gauge	Channel Depth in. (mm)	Weight lb./lin. ft. (kg/m)	Catalog Number	Load/Defl. Code	Span																	
					2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	
Steel 13 ga.	1 1/2" (38.1)	4.3 (6.4)	P61513† A61513	U	669	655	456	336	258	204	166	138	117	100	87	76	67	54	44	37	31	
				D	.03	.07	.10	.13	.17	.22	.27	.33	.40	.47	.55	.63	.72	.92	1.16	1.43	1.68	
				C	960	819	684	588	516	460	416	380	349	325	303	285	268	241	218	198	182	
	2" (50.8)	4.6 (6.8)	P62013† A62013	U	1510	966	671	493	378	299	243	201	170	145	126	110	97	77	63	53	45	
				D	.03	.05	.07	.10	.13	.16	.20	.25	.29	.35	.40	.46	.53	.68	.85	1.03	1.25	
				C	1442	1154	961	862	756	673	608	555	509	472	440	413	388	349	317	291	270	
Steel 11 ga.	1 1/2" (38.1)	5.3 (7.9)	P61511† A61511	U	986	739	515	378	291	230	188	156	131	112	97	85	75	60	50	41	35	
				D	.03	.06	.09	.12	.16	.21	.25	.31	.37	.43	.50	.57	.65	.82	1.02	1.25	1.50	
				C	1231	985	821	703	615	547	492	448	410	379	352	328	308	274	246	227	210	
	2" (50.8)	5.5 (8.2)	P62011† A62011	U	1937	1240	861	633	486	385	312	259	218	186	161	140	124	99	80	67	57	
				D	.03	.05	.07	.10	.13	.16	.20	.24	.29	.34	.40	.46	.52	.67	.83	1.01	1.22	
				C	1881	1505	1292	1109	971	865	781	712	654	604	563	527	496	444	403	389	341	
3" (76.2)	6.2 (9.2)	P63011† A63011	U	3828	2450	1701	1250	957	757	614	507	427	365	315	274	242	192	156	130	108		
			D	.02	.04	.05	.07	.10	.12	.15	.18	.22	.25	.29	.34	.39	.49	.61	.74	.87		
			C	3448	2759	2299	1971	1724	1533	1405	1396	1282	1185	1102	1030	968	864	781	714	652		
Alum. 0.125"	2" (50.8)	2.1 (3.1)	P620125† A620125	U	1463	936	650	478	366	290	235	194	163	140	120	104	93	73	60	49	41	
				D	.08	.12	.17	.23	.30	.38	.47	.57	.68	.79	.92	1.05	1.20	1.52	1.88	2.27	2.70	
				C	1612	1290	1075	921	806	716	645	586	537	496	461	430	403	358	322	293	269	
Stainless Steel* 16 ga.	2" (50.8)	3.2 (4.7)	P62016S†	U	1289	825	573	421	322	255	206	170	143	122	105	91	80	64	51	42	35	
				D	.04	.07	.10	.13	.17	.22	.27	.33	.39	.46	.53	.61	.69	.88	1.08	1.30	1.54	
				C	1252	1002	835	715	626	556	501	469	430	397	368	343	322	286	257	234	215	
					D	.03	.05	.07	.10	.13	.17	.21	.26	.31	.37	.42	.49	.55	.70	.86	1.05	1.25

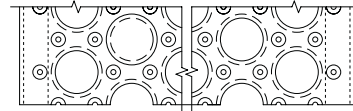
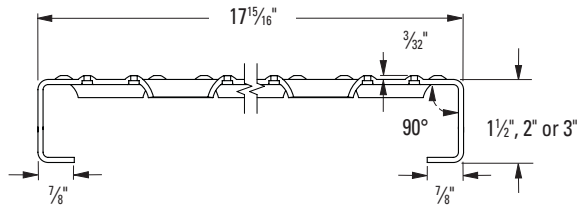
† Perf-O Grip: To order standard Perf-O Grip grating use part number "Pxxxx".

Perf-O Grip 2: To order Perf-O Grip 2 grating use part number "Axxxx". End margins are standard on Perf-O Grip 2 grating 2-hole through 6-hole plank only (5' through 12' widths). Standard lengths are 10'-0" and 12'-0".

* Available on special order. Consult factory.

Perf-O Grip Grating - Safe Loading Table

10-Hole plank — 18" width nominal



Perf-O Grip pattern

Plank selection/design tables

Allowable loads and deflections: U=Uniform load (lb./ft.²) C= Concentrated load (lb.) D=Deflection (in.)

Material Gauge	Channel Depth in. (mm)	Weight lb./lin. ft. (kg/m)	Catalog Number	Load/Defl. Code	Span																	
					2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	
Steel* 13 ga.	1 1/2" (38.1)	5.7 (8.5)	P101513	U	714	457	317	233	179	142	116	96	82	69	60	52	45	36	29	24	21	
				D	.04	.07	.10	.13	.17	.21	.26	.32	.39	.45	.52	.60	.68	.86	1.05	1.27	1.56	
				C	964	771	642	551	495	481	434	397	366	337	314	293	274	243	220	199	183	
				D	.03	.04	.07	.09	.12	.17	.21	.26	.31	.36	.42	.48	.55	.69	.85	1.03	1.23	
	2" (50.8)	6.0 (8.9)	P102013	U	1072	686	476	350	268	212	173	143	121	103	90	78	69	55	44	36	31	
				D	.03	.05	.07	.10	.13	.16	.20	.24	.29	.34	.40	.46	.53	.67	.82	.98	1.19	
				C	1452	1162	968	830	726	645	581	528	509	489	470	439	411	366	329	299	274	
				D	.02	.03	.05	.06	.09	.12	.14	.17	.22	.27	.32	.37	.42	.53	.65	.79	.94	
	Steel 11 ga.	1 1/2" (38.1)	6.8 (10.1)	P101511	U	781	500	347	255	196	156	127	105	89	76	66	58	52	41	34	29	25
					D	.04	.06	.09	.12	.15	.19	.24	.29	.34	.40	.47	.53	.61	.77	.96	1.20	1.45
					C	1257	1006	838	718	629	559	503	457	419	387	359	335	314	279	253	234	219
					D	.03	.05	.07	.09	.12	.15	.19	.23	.27	.32	.37	.43	.49	.62	.76	.94	1.14
2" (50.8)		7.1 (10.5)	P102011	U	1250	800	555	408	314	249	201	167	141	121	104	91	80	64	53	44	37	
				D	.03	.05	.07	.09	.12	.15	.18	.22	.26	.31	.35	.41	.46	.59	.74	.91	1.08	
				C	1924	1539	1283	1099	962	855	770	700	641	592	550	514	484	434	395	363	337	
				D	.02	.04	.05	.07	.09	.12	.14	.17	.21	.24	.28	.33	.37	.48	.59	.73	.87	
3" (76.2)		7.9 (11.7)	P103011	U	2675	1712	1189	873	669	528	428	354	297	254	219	190	167	132	107	89	74	
				D	.02	.04	.05	.07	.09	.11	.14	.17	.20	.24	.28	.31	.36	.45	.56	.68	.81	
				C	3531	2825	2354	2018	1766	1569	1412	1284	1177	1141	1106	1070	1003	892	802	730	669	
				D	.01	.02	.03	.04	.06	.08	.10	.12	.14	.20	.23	.25	.29	.36	.45	.54	.65	
Alum.* 0.125"	2" (50.8)	2.8 (4.1)	P1020125	U	992	635	441	324	248	196	158	131	110	94	81	70	62	49	40	33	27	
				D	.07	.10	.16	.21	.28	.35	.44	.53	.63	.74	.86	.98	1.12	1.42	1.75	2.11	2.52	
				C	1652	1322	1102	944	826	734	661	601	551	508	472	441	413	367	330	300	275	
				D	.05	.08	.13	.17	.22	.28	.35	.42	.50	.59	.69	.79	.89	1.13	1.40	1.69	2.01	

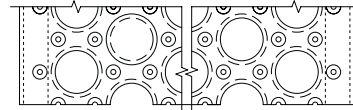
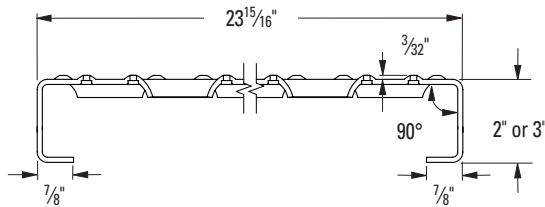
* Available on special order. Consult factory.

Perf-O Grip Grating

Perf-O Grip Grating - Safe Loading Table

13-Hole plank — 24" width nominal

Perf-O Grip Grating



Perf-O Grip pattern

Plank selection/design tables

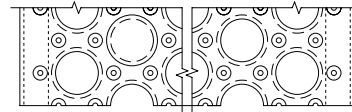
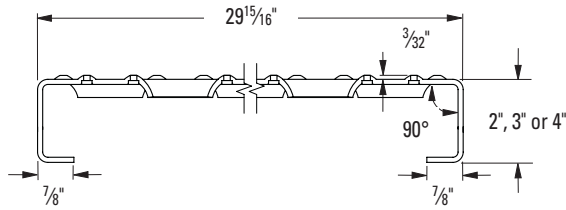
Allowable loads and deflections: U=Uniform load (lb./ft.²) C= Concentrated load (lb.) D=Deflection (in.)

Material Gauge	Channel Depth in. (mm)	Weight lb./lin. ft. (kg/m)	Catalog Number	Load/Defl. Code	Span																
					2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
Steel 11 ga.	2" (50.8)	8.9 (13.2)	P132011	U	1094	700	486	357	273	216	175	145	123	105	91	79	70	56	45	38	33
				D	.03	.05	.06	.09	.12	.15	.18	.22	.26	.31	.36	.41	.47	.60	.75	.92	1.13
				C	2092	1674	1395	1196	1046	930	837	761	697	644	598	558	540	504	459	423	393
	3" (76.2)	9.8 (14.5)	P133011	U	1971	1261	876	644	493	389	315	261	219	187	161	141	124	99	80	67	57
				D	.02	.03	.04	.06	.08	.10	.12	.15	.18	.21	.24	.28	.32	.40	.50	.61	.73
				C	3792	3033	2528	2167	1896	1685	1517	1379	1264	1167	1083	1011	948	843	758	689	632
				D	.01	.02	.03	.04	.05	.07	.09	.10	.12	.15	.17	.19	.22	.30	.38	.46	.54

Perf-O Grip: To order standard Perf-O Grip grating use part number "Pxxxxx".
Standard lengths are 10'-0" and 12'-0".

Perf-O Grip Grating - Safe Loading Table

16-Hole plank — 30" width nominal



Perf-O Grip pattern

Perf-O Grip Grating

Plank selection/design tables

Allowable loads and deflections: U=Uniform load (lb./ft.²) C= Concentrated load (lb.) D=Deflection (in.)

Material Gauge	Channel Depth in. (mm)	Weight lb./lin. ft. (kg/m)	Catalog Number	Load/Defl. Code	Span																
					2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
Steel 11 ga.	2" (50.8)	11.8 (17.5)	P162011*	U	956	612	425	312	239	189	153	126	106	91	77	68	60	47	38	32	27
				D	.02	.03	.04	.05	.07	.09	.11	.13	.16	.18	.21	.24	.28	.35	.43	.52	.62
				C	2564	2051	1709	1465	1282	1140	1026	932	855	789	733	684	641	570	513	466	427
				D	.01	.02	.03	.04	.06	.07	.09	.10	.12	.15	.17	.20	.22	.28	.35	.42	.50
				U	1413	904	628	461	353	279	226	187	157	134	116	100	89	70	57	46	39
				D	.02	.03	.04	.06	.08	.10	.12	.14	.17	.20	.23	.26	.30	.38	.47	.57	.67
	3" (76.2)	12.7 (18.9)	P163011*	C	3802	3041	2534	2172	1901	1690	1521	1382	1267	1170	1086	1014	950	845	760	691	634
				D	.01	.02	.03	.04	.05	.07	.09	.10	.12	.14	.17	.19	.22	.28	.34	.41	.53
				U	2240	1434	996	731	560	443	358	296	249	212	183	159	140	111	91	75	64
				D	.01	.02	.03	.04	.06	.07	.09	.11	.13	.15	.17	.20	.23	.29	.36	.44	.52
				C	5838	4670	3892	3336	2919	2595	2335	2123	1946	1796	1668	1557	1459	1297	1168	1061	973
				D	.01	.02	.02	.03	.04	.05	.07	.08	.09	.11	.13	.15	.17	.21	.26	.32	.38
4" (101.6)	13.5 (20.1)	P164011*	U	2240	1434	996	731	560	443	358	296	249	212	183	159	140	111	91	75	64	
			D	.01	.02	.03	.04	.06	.07	.09	.11	.13	.15	.17	.20	.23	.29	.36	.44	.52	
			C	5838	4670	3892	3336	2919	2595	2335	2123	1946	1796	1668	1557	1459	1297	1168	1061	973	
			D	.01	.02	.02	.03	.04	.05	.07	.08	.09	.11	.13	.15	.17	.21	.26	.32	.38	

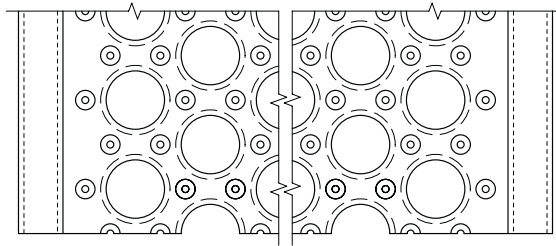
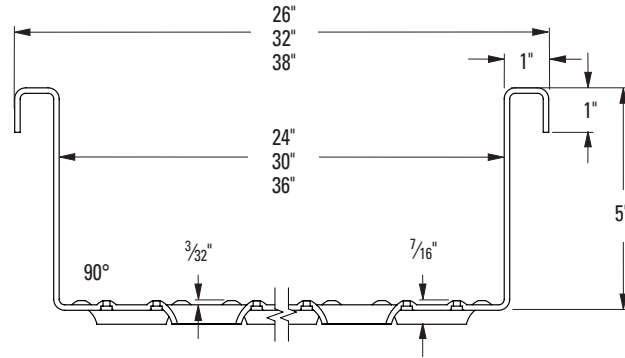
Perf-O Grip: To order standard Perf-O Grip grating use part number "Pxxxxx". Standard lengths are 10'-0" and 12'-0".

* Available on special order. Consult factory.

Perf-O Grip Grating - Safe Loading Tables

Walkway — 24", 30" & 36" widths nominal

Perf-O Grip Grating



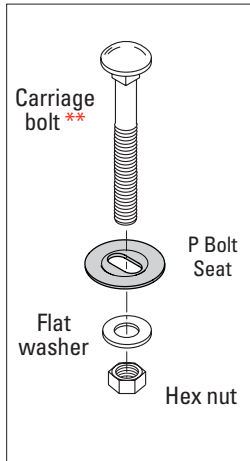
Perf-O Grip pattern

Walkway selection/design tables (Note: consult factory for data on 36" width, 20 hole)

Allowable loads and deflections: U=Uniform load (lb./ft.²) C= Concentrated load (lb.) D=Deflection (in.)

Material Gauge	Channel Depth in. (mm)	Weight lb./lin. ft. (kg/m)	Catalog Number	Load/Defl. Code	Span																
					2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
Steel 11 ga. 24" wide (609.6)	5" (127.0)	11.8 (17.5)	P135011W	U	5751	3681	2556	1878	1438	1136	920	760	639	544	469	409	359	284	230	190	160
				D	.02	.02	.04	.05	.06	.08	.10	.12	.14	.16	.19	.22	.25	.31	.39	.47	.56
				C	9504	7603	6336	5431	4752	4224	3802	3456	3168	2924	2715	2534	2376	2112	1901	1728	1584
				D	.01	.01	.02	.03	.04	.05	.06	.07	.08	.10	.11	.13	.15	.19	.23	.28	.34
Steel 11 ga. 30" wide (762.0)	5" (127.0)	13.6 (20.2)	P165011W	U	3868	2475	1719	1263	967	764	619	511	430	366	316	275	242	191	155	128	107
				D	.01	.02	.03	.04	.05	.06	.08	.10	.12	.13	.16	.18	.20	.26	.32	.39	.46
				C	9534	7627	6356	5448	4767	4237	3813	3467	3178	2933	2724	2542	2383	2119	1907	1733	1589
				D	.00	.01	.02	.03	.04	.05	.06	.07	.08	.10	.11	.13	.15	.19	.23	.28	.33

Perf-O Grip: To order standard Perf-O Grip grating use part number "Pxxxx".
Standard lengths are 10'-0" and 12'-0". Longer lengths of 20'-0" and 24'-0" are available. Consult factory.



Part number includes

(1) Bolt washer seat (PBOLTSEAT)

Source Locally

(1) $\frac{3}{8}$ "-16 Carriage bolt **

(1) $\frac{3}{8}$ " Flat washer

(1) $\frac{3}{8}$ "-16 Hex nut

** Plank carriage bolt lengths = Side channel height + 1"
Walkway carriage bolt = $\frac{5}{16}$ "-18 x 2"

Bolt Washer Seat (P Bolt Seat)

UPC Number	Catalog Number	Wt./Ea.
66251626616	PBOLTSEAT	0.10



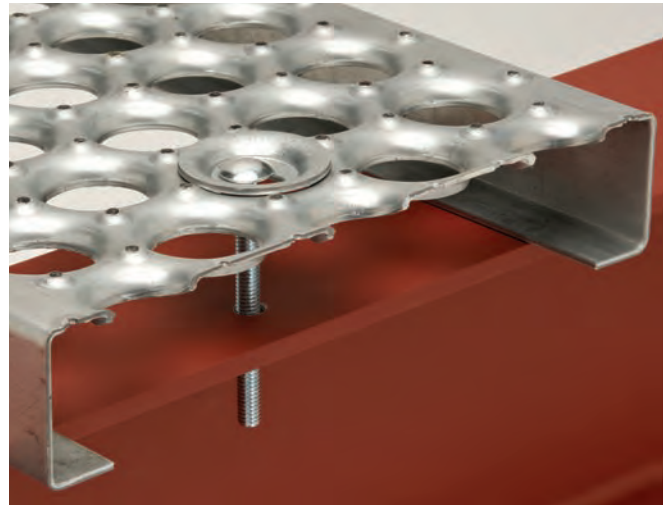
Field drilling is required.

Perf-O Grip bolt seats help provide a secure anchor of the grating to structural supports. The standard bolt seat features oblong holes specifically designed to help ensure a vertical anchor (with a $\frac{3}{8}$ " bolt) even if the hole is off concentrically by as much as $\frac{1}{4}$ ".

Hardware is not provided.

Assembly

1. Align Perf-O Grip™ planks on I-beam or other anchoring cross-member.
2. Mark the I-beam for drilling purposes under the Perf-O Grip hole nearest the end. Drill a pilot hole.
3. Remove Perf-O Grip plank and drill a finish hole.
4. Replace Perf-O Grip plank to its original position. Place bolt seat in the Perf-O Grip hole which is now lined up with the drilled hole.
5. Run the carriage bolt through the bolt seat, Perf-O Grip and I-Beam, and tighten with washer and nut until secure.
6. Test for movement or slippage. If Perf-O Grip planks are not secure, check fastening system for loose or missing parts. Repeat steps 1 thru 5.



Welding

A common method of fastening safety grating is welding. It is recommended that all B-Line series safety grating products be fillet welded per AWS D1.3. For more information, consult technical services.



Note: Do not walk on Perf-O Grip planks if they are not secure. Serious injury could result.

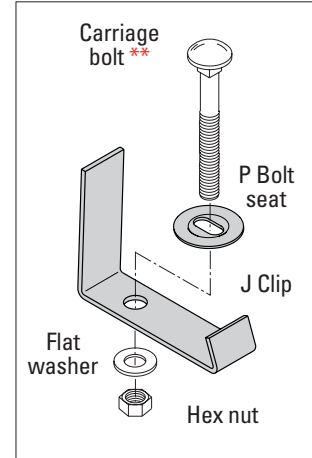
Perf-O Grip Grating - Safe Loading Tables

Perf-O Grip J-clip



Part number includes
(1) J-Clip & (1) P Bolt Seat

Source Locally
(1) 3/8"-16 Carriage bolt **
(1) 3/8" Flat washer
(1) 3/8"-16 Hex nut



** Plank carriage bolt lengths = Side channel height + 1"
walkway carriage bolt = 5/16"-18 x 2"

Perf-O Grip™ J-clips fasten the grating securely to the supporting steel without drilling holes.

Standard finish is galvanized.

Hardware is not provided.

Seated J Clip

UPC Number	Catalog Number	Wt./Ea.
78205153667	JCLIP	0.30



Assembly

1. Align Perf-O Grip planks on I-beam or other anchoring cross-member.
2. Place bolt seat on center hole of Perf-O Grip nearest the overhanging end.
3. Align J-clip below Perf-O Grip plank so that the carriage bolt can slide through. Make sure the lower lip of the J-clip reaches well into the I-beam.
4. Run the carriage bolt through the bolt seat to the J-clip and tighten securely with the washer and nut.
5. Test for movement or slippage. If Perf-O Grip planks are not secure, check fastening system for loose or missing parts. Repeat steps 1 thru 4.

Welding

A common method of fastening safety grating is welding. It is recommended that all B-Line series safety grating products be fillet welded per AWS D1.3. For more information, consult technical services.



Note: Stainless is unavailable.

Note: Do not walk on Perf-O Grip planks if they are not secure. Serious injury could result.

Perf-O Grip mid support clip with hardware

Part number includes

(1) Clip & (2) Set Screws



Perf-O Grip™ mid support clips can be used at midspan to increase load carrying capacities of individual channels by fastening several planks together to form an integral section. Mid support clip is manufactured from galvanized steel and includes two set screws.

Mid Support Clip (with hardware)

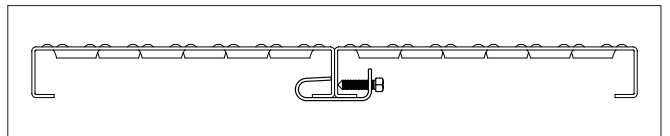
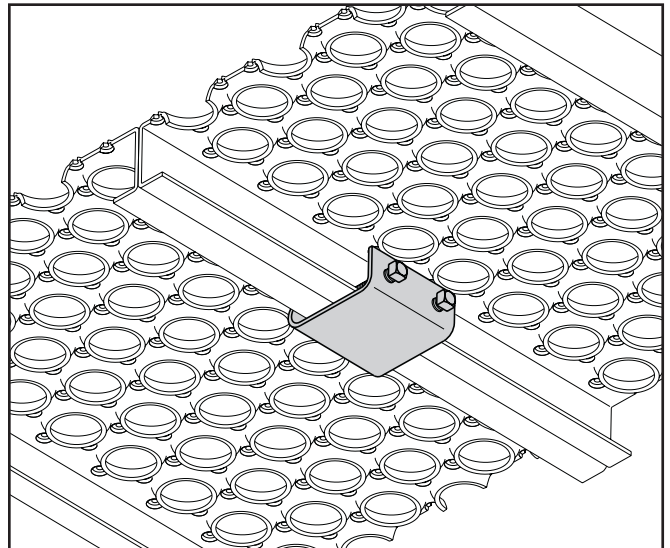
UPC Number	Catalog Number	Wt./Ea.
66251639386	MSCLIP	0.50

Assembly

1. Align Perf-O Grip planks on I-beam or other anchoring cross-member.
2. Place clip around the bottom flanges of the Perf-O Grip planks.
3. Slide to the required location.
4. Tighten the set screws.
5. Test for movement or slippage. If Perf-O Grip planks are not secure, check fastening system for loose or missing parts. Repeat steps 1 thru 4 as required.

Welding

A common method of fastening safety grating is welding. It is recommended that all B-Line series safety grating products be fillet welded per AWS D1.3. For more information, consult technical services.



Note: Do not walk on Perf-O Grip planks if they are not secure. Serious injury could result.

Perf-O Grip Grating - Safe Loading Tables

Perf-O Grip splice plate kits



Surface splice plate kits

As width increases, grating surface performance becomes more critical. Thus, for Perf-O Grip™ product widths greater than 12", use of the grating surface splice kit is recommended to mechanically join butt ends of plank sections.

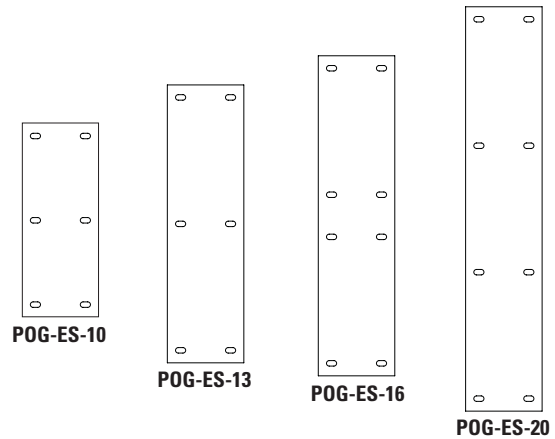
- **POG-ES-10** (for 18" wide plank) & **POG-ES-13** (for 24" wide plank) includes six (6) each of hardware shown below.
- **POG-ES-16** (for 30" wide plank) & **POG-ES-20** (for 36" wide plank) includes eight (8) each of hardware shown below.
- **Hardware included:** 3/8" x 1" carriage bolts, 3/8" flat washers and bolt seats.

Perf-O Grip splice plate kits

UPC Number	Catalog Number	Wt./Ea.
66251640777	POG-ES-10	4.40
66251640778	POG-ES-13	5.95
66251640779	POG-ES-16	7.00
78205167734	POG-ES-20	7.24



POG-ES-10 shown



POG-WS-30

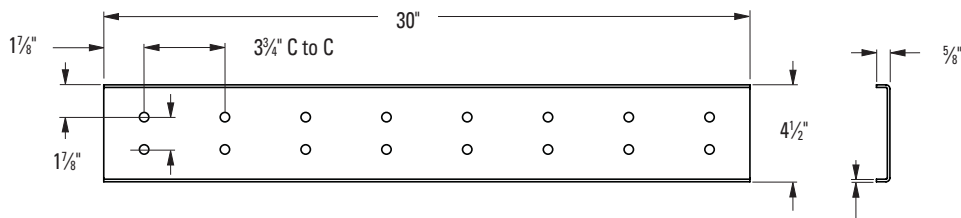
Walkway splice plate kits

Walkway splice plates provide continuity when multiple lengths of Perf-O Grip are desired. Connections are reinforced with the addition of splice plates attached to side channels.

- **POG-WS-30** for 24", 30" and 36" wide walkway.
- **Each kit includes:** two (2) splice plates and thirty-two (32) each of the following hardware: 1/2" x 1 1/4" hex bolts, 1/2"-13 hex nuts and 1/2" flat washers.

Walkway splice plate kits

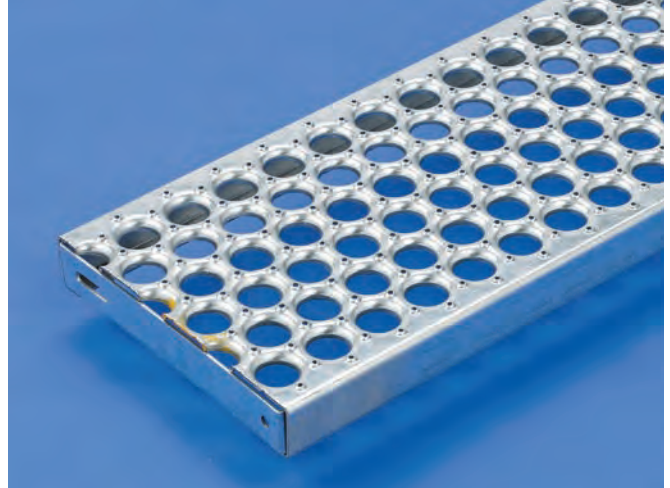
UPC Number	Catalog Number	Wt./Ea.
78205166238	POG-WS-30	18.04



Perf-O Grip stair treads

Specify original Perf-O Grip™ or Perf-O Grip 2 stair treads. All treads have welded ends for attachment to stringers.

- Mill-galvanized steel: 11 ga and 13 ga.
- Hot rolled, pickled and oiled carbon steel: 11 ga. and 13 ga.
- 24", 30", 36" and 48" lengths.
- 5", 7" 10" and 12" (nominal) widths.
- 1½" and 2" channel heights.
- For stair treads, intermediate stringer is recommended for spans over 4 feet.

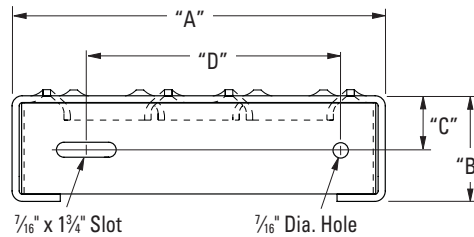


Perf-O Grip Grating

Perf-O Grip carrier plates

Carrier plates allow you to create your own custom stair treads. They are sold by the pair.

(2 plates = one pair).



Perf-O Grip carrier plate

Product	Nominal Width	"A"	"B"	"C"	"D"
2-Hole Tread	5" (127mm)	4 ¹⁵ / ₁₆ " (125mm)	1½" (38mm)	¾" (19mm)	2" (51mm)
		4 ⁵ / ₁₆ " (125mm)	2" (51mm)	1" (25mm)	2" (51mm)
3-Hole Tread	7" (178mm)	6 ¹⁵ / ₁₆ " (176mm)	1½" (38mm)	¾" (19mm)	4" (102mm)
		6 ⁵ / ₁₆ " (176mm)	2" (51mm)	1" (25mm)	4" (102mm)
5-Hole Tread	10" (254mm)	9 ¹⁵ / ₁₆ " (254mm)	1½" (38mm)	¾" (19mm)	7" (178mm)
		9 ⁵ / ₁₆ " (254mm)	2" (51mm)	1" (25mm)	7" (178mm)
6-Hole Tread	12" (305mm)	11 ¹⁵ / ₁₆ " (303mm)	1½" (38mm)	¾" (19mm)	9" (227mm)
		11 ⁵ / ₁₆ " (303mm)	2" (51mm)	1" (25mm)	9" (227mm)

Notes to architect

1. Perf-O Grip™ and Perf-O Grip 2 gratings are intended for general purpose use in plants and process facilities by industry, commerce, and public utilities, and on air, water, and surface, for both mobile and stationary equipment.
2. Perf-O Grip and Perf-O Grip 2 stair treads are intended for utility stairs and fire escapes in commercial, public and private buildings where local code permits. They are not intended for staircases used regularly by the general public where flat closed surfaces are desired. For this type of application, see Traction-Tread™ stair treads and sheets.
3. These specifications are presented as a general guide to the architect or structural engineer in preparing project specifications. Allowable loads, spans and other limiting conditions presented in this catalog offer product data for use in design and construction.
4. All supports should provide a smooth, level, 1½" minimum bearing surface, free of burrs, bridging, welds or other irregularities.
5. Random cut ends and diagonal or circular cut exposed edges should be banded with a bar at least ⅜" thick and equal to the overall side channel depth of grating welded at contact points at the discretion of the design engineer.
6. Bolted connections, except stair or ladder tread attachment to stringer channels, may be replaced by welded connections that develop the same strength.

Part 1: General

1.1 Scope

The contractor shall furnish and install Perf-O Grip and Perf-O Grip 2 Gratings and Stair Treads, as specified and shown on the drawings.

1.2 Qualifications

Perf-O Grip and Perf-O Grip 2 gratings, stair tread and accessories, unless otherwise indicated, shall be manufactured by Eaton's B-Line Division, and shall be installed in accordance with its current printed directions.

Safety surface shall be slip-resistant in all directions.

1.3 Submittals

The contractor shall furnish shop drawings of grating layout, framing and supports, unit dimensions and sections, type and location of fasteners and welds.

1.4 Storage and handling

All materials shall be stored and handled to avoid damage. Damaged materials shall be removed from the premises.

Part 2: Products

2.1 Grating materials

- a. **Type:** Perf-O Grip, Perf-O Grip 2 gratings and Perf-O Grip walkways)
- b. **Metal and finish:** Standard (mill-galvanized steel, ASTM A924) (stainless steel, alloy types 304-2B/D) (aluminum, alloy 5052 H32); Special order (carbon steel — hot rolled, pickled and oiled, ASTM-A569) (stainless steel, alloy type 316-2B/D)
- c. **Metal gauge:** (13-ga. steel) (11-ga. steel) (16-ga. stainless steel) (.125" aluminum)
- d. **Section width:** (5") (7") (10") (12") (18") (24") (30") plank; (24") (30") (36") walkway
- e. **Channel height:** Safety grating (1½") (2") (3") (4") plank; (5") Walkway grating - OSHA compliant; Canadian OH & S compliant
- f. **Standard lengths:** (10'-0") (12'-0")

2.2 Stair tread materials

- a. **Type:** (Perf-O Grip and Perf-O Grip 2 stair tread)
- b. **Metal and finish:** Standard (mill-galvanized steel, ASTM G90 and A653 Galv.) (stainless steel, alloy types 304-2B/D) (aluminum, alloy 5052 H32); Special order (carbon steel — hot rolled, pickled and oiled, ASTM-A1011) (stainless steel, alloy type 316-2B/D)
- c. **Metal gauge:** (13-ga. steel) (11-ga. steel) (16-ga. stainless steel) (.125" aluminum)
- d. **Tread depth:** Standard (10"); Special order (5") (7") (12")
- e. **Channel height:** Standard (1½"); Special order (2")
- f. **Span or width of staircase:** (24") (30") (36")

2.3 Accessories

- a. **Bolt seats:** Standard (mill-galvanized steel, ASTM A924); Special order (carbon steel — hot rolled, pickled and oiled, ASTM A569) (aluminum, alloy 5052-H32); (stainless steel, alloy Types 304-2B/D) (stainless steel, alloy Type 316-2B/D)
- b. **"J" clip attachment:** Standard (mill-galvanized steel, ASTM A924); Special order (carbon steel — hot rolled, pickled and oiled, ASTM A569) (aluminum, alloy 5052-H32); (stainless steel, alloy Types 304-2B/D) (stainless steel, alloy Type 316-2B/D)
- c. **Midsupport clip:** Standard (mill-galvanized steel, ASTM A924); Special order (carbon steel — hot rolled, pickled and oiled, ASTM A1011) (aluminum, alloy 5052-H32); (stainless steel, alloy types 304-2B/D) (stainless steel, alloy type 316-2B/D)

- d. **Surface splice kit:** Standard (mill-galvanized steel, ASTM A924); Special order (carbon steel — hot rolled, pickled and oiled, ASTM A1011) (aluminum, alloy 5052-H32); (stainless steel, alloy types 304-2B/D) (stainless steel, alloy type 316-2B/D)
- e. **Walkway splice kit:** Standard (mill-galvanized steel, ASTM A924); Special order (carbon steel — hot rolled, pickled and oiled, ASTM A1011) (aluminum, alloy 5052-H32); (stainless steel, alloy types 304-2B/D) (stainless steel, alloy type 316-2B/D)
- f. **Universal handrail bracket for walkways:** Eliminates unnecessary substructure for supporting handrail posts.

Part 3: Execution

3.1 Condition of surfaces

Prior to grating installation, contractor shall inspect supports for correct size, layout and alignment and verify that surfaces to receive grating are free of debris. The contractor shall report to the design or consulting engineer or owner's agent in writing any defects considered detrimental to proper application of grating so defects can be remedied before grating is applied.

3.2 Grating installation

Install grating in accordance with manufacturer's recommendations and shop drawings. Position grating sections flat and square with ends bearing min. 1½" on supporting structure. Keep grating sections at least ¼" away from vertical steel sections and ½" from concrete walls. Installation clearances are built into this product. Allow clearance at joints between sections of max. ¼" at side channels and max. ⅜" at ends. When specified, band random cut ends and diagonal or circular cut exposed edges with a min. ⅛" thick bar welded at contact points.

3.3 Grating attachment

Attach grating to supports without warp or deflection as follows:

- a. **Single plank application:** Secure plank ends to supporting members at every point of contact. Use (2) Perf-O Grip™ bolt seats or "J" Clip assemblies at each end or secure both side channels at each end to supports by fusion welding with ⅝" fillet welds, 1" long.
- b. **Multiple plank application:** Secure perimeter plank to supporting members at every point of contact and intermediate grating sections with at least (1) attachment each end of plank, on alternate sides. For added rigidity when span exceeds (6'-0") (8'-0"), attach side channels of adjacent plank together (at mid-point of span) using mid support clip.
- c. **Welded attachment:** Secure side channels to supports by fusion welding with ⅝" fillet welds, 1" long. Weld adjacent planks together with ⅝" fillet welds, 1" long, 24" o.c. staggered top and bottom.
- d. **Clip attachment:** Secure intermediate planks to supports using bolt seat and "J" Clip assembly. Use bolt seat with ⅜" carriage bolts and nuts for securing perimeter planks. Fasten adjacent side rails together with mid support clip or ⅜" machine bolts and nuts through locally drilled holes.

3.4 Stair tread installation

Install Perf-O Grip and Perf-O Grip 2 stair treads as shown on the drawings. Fasten treads to stair stringers with ⅜" x 1" machine bolts and nuts.

- a. **For stair treads,** intermediate stringer is recommended for spans over 4 feet.

How to order

Technical assistance

For technical assistance not found in this catalog, contact your local Perf-O Grip and Perf-O Grip 2 gratings distributor, or contact our technical service department at 1-800-582-3643 (phone) or 1-770-268-7213 (fax).

Perf-O Grip and Perf-O Grip 2 gratings are stocked in all major markets. For the finest in slip-resistant grating and stair treads, contact us or go to www.eaton.com/b-lineseries to locate your local distributor. You will receive skilled consulting service on your specific requirements.

Fabrication service

On large jobs, we estimate, quote, detail and fabricate to your requirement. After receipt of order, layout drawings are prepared for easy installation.

Notice: We shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than the intended use. Our liability is expressly limited to replacement of defective goods. Any claims shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should have been discovered.

See terms and conditions at www.cooperbline.com/legal.