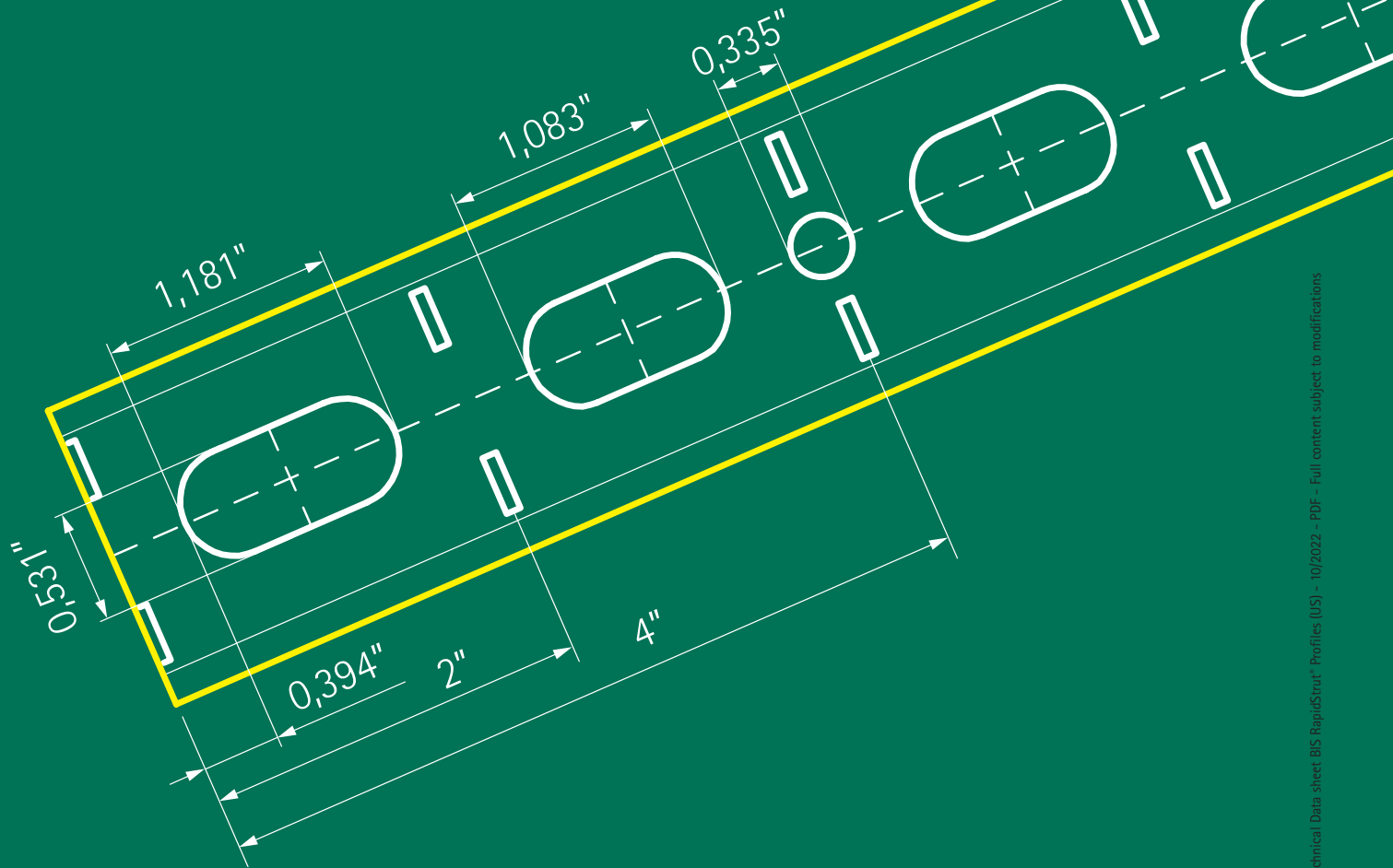


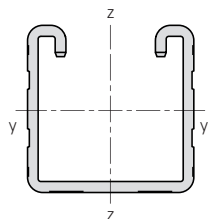
Rail section properties and load tables



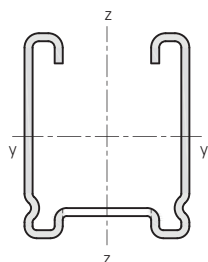
Technical Data sheet BIS RapidStrut® Profiles (US) - 10/2022 - PDF - Full contents subject to modifications

Technical Data BIS RapidStrut® Profiles

System BIS RapidStrut® - Table of rail section properties



Single



BIS RapidStrut® DS 5

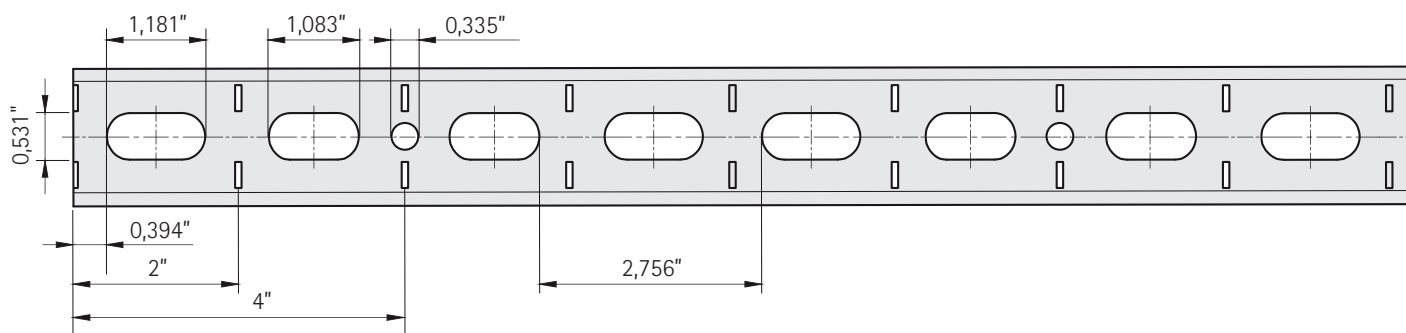
Type	Weight (lbs / ft)	Moment of inertia in ⁴		Section modulus in ³	
		I _y	I _z	W _y	W _z
1-5/8 - 13/16 - 16 Ga	1.15	0.0203	0.0883	0.0497	0.1086
1-5/8 - 13/16 - 14 Ga	1.34	0.0245	0.1030	0.0561	0.1421
1-5/8 - 13/16 - 12 Ga	1.78	0.0277	0.1359	0.0629	0.1671
1-5/8 - 1-5/8 - 16 Ga	1.65	0.1061	0.1487	0.1281	0.1829
1-5/8 - 1-5/8 - 14 Ga	2.35	0.1322	0.1901	0.1607	0.2338
1-5/8 - 1-5/8 - 12 Ga	2.45	0.1545	0.2264	0.1862	0.2785
1-5/8 - 2 - 14 Ga	2.62	0.2117	0.2319	0.2184	0.2853
1-5/8 - 2-7/16 - 12 Ga	3.33	0.4428	0.3201	0.3585	0.3938
1-5/8 - 3-1/4 - 12 Ga	4.08	0.9224	0.4107	0.5668	0.5052

See Rail load tables for safe working loads.

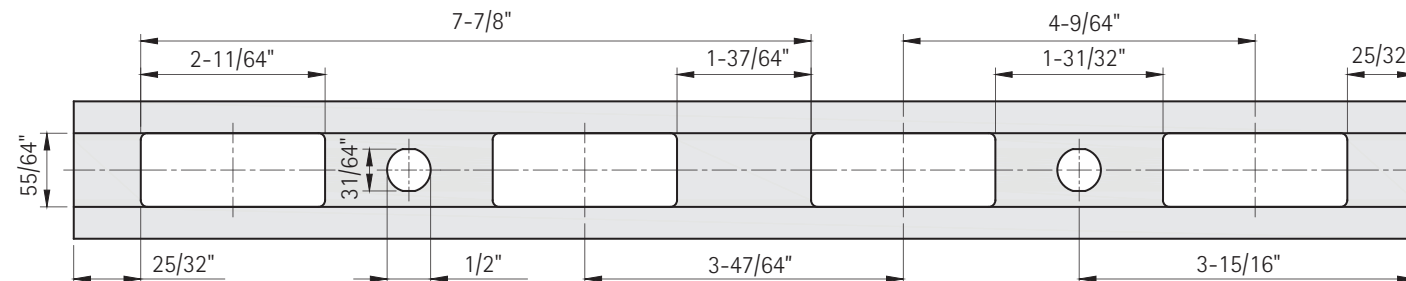
Perforation pattern of rails

Distance between rail end and first hole is always equal.

BIS RapidStrut® - 16 Ga, 14 Ga, 12 Ga



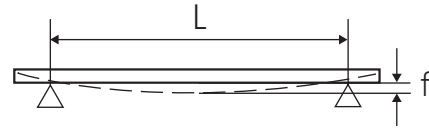
BIS RapidStrut® DS 5 - 14 Ga



Calculation method

The published safe working loads are calculated with perforated (slotted) rail.

Loads are calculated taking into consideration a maximum deflection (f) of $L/200$ (according to RAL-GZ 655/B) and a maximum bending stress of 23206 lbf/in^2 (see picture 1).



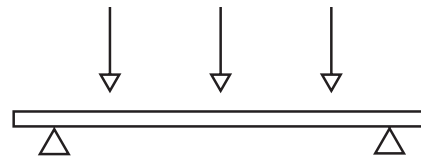
Picture 1

Fixing of strut to wall or ceilings

The strength of the anchoring of the rail has not been taken into consideration. The installer must verify that the bolts and wall plugs used are suitable for the maximum permitted loading of the rail.

Reading the rail loading tables

The stated values are only valid for the fixing rail. The maximum safe load of all other construction parts have to be verified. The stated maximum safe load is calculated for a static load at free bending support (see picture 2).



Picture 2

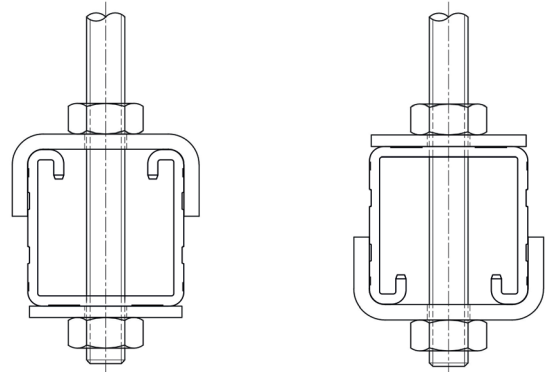
Where the segment is marked with a hyphen, the stated length cannot be safely loaded.

Special conditions

In case of doubt or for special conditions not stated in the loading tables, please do not hesitate to contact our technical department for their advice.

Hanging of strut from the ceiling

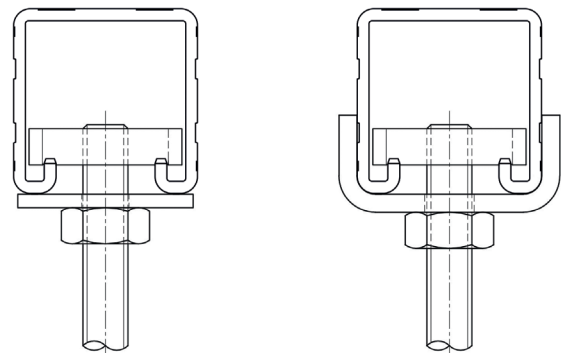
When suspending strut from the ceiling we recommend the use of U-formed washers on the open side of the strut (see picture 3).



Picture 3

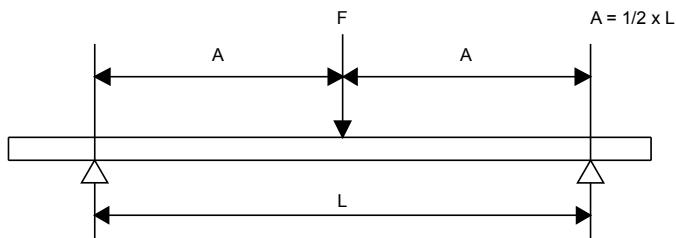
Methods of loading

Where loads are suspended beneath the strut (e.g. hanging pipes), the load must not exceed the relevant safe load of the slide nut. To increase rigidity of the installation we recommend the use of a U-formed washer (see picture 4).



Picture 4

BIS RapidStrut®: suspension on 1 point



L Span (')	1-5/8 x 13/16 - 14 Ga	1-5/8 x 13/16 - 12 Ga	1-5/8 x 1-5/8 - 16 Ga	1-5/8 x 1-5/8 - 14 Ga	1-5/8 x 1-5/8 - 12 Ga	1-5/8 x 2-7/16 - 12 Ga	1-5/8 x 3-1/4 - 12 Ga
1	452	506	1,047	1,295	1,501	2,889	4,567
1 1/2	302	338	698	863	1,000	1,926	3,045
2	226	253	524	647	750	1,444	2,284
2 1/2	180	203	419	518	600	1,156	1,827
3	125	141	349	432	500	963	1,522
3 1/2	92	104	299	370	429	825	1,305
4	70	80	262	324	375	722	1,142
4 1/2	56	63	233	288	333	642	1,015
5	45	51	195	243	284	578	913
5 1/2	37	42	161	201	235	525	830
6	31	35	135	169	197	481	761
6 1/2	27	30	115	144	168	444	703
7	23	26	99	124	145	413	652
7 2/3	19	22	83	103	121	346	596
8	18	20	76	95	111	318	571
8 1/2	16	18	67	84	98	281	537
9	14	16	60	75	88	251	523
9 1/2	12	14	54	67	79	225	469
10	11	13	49	61	71	203	424
11	9	11	40	50	59	168	350
12	8	9	34	42	49	141	294
13	7	8	29	36	42	120	251
14	6	6	25	31	36	104	216
15	5	6	22	27	32	90	188
16	4	5	19	24	28	79	165
17	4	4	17	21	25	70	147
18	3	4	15	19	22	63	131
19	3	4	13	17	20	56	117
20	3	3	12	15	18	51	106

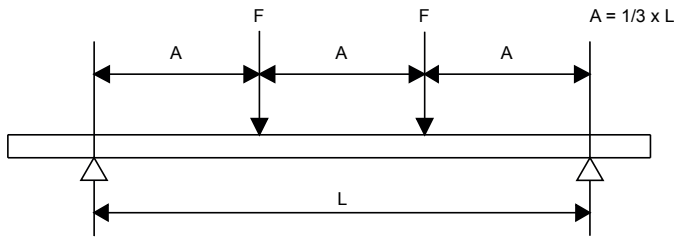
Max. allowed load in lbf.

The stated values are only valid for the actual strut.

The maximum safe load of all other construction parts have to be verified.

For large spans and high rail flanks ($> = 2-7/16"$), depending on the load, appropriate measures against occurring torsional forces may have to be taken.

BIS RapidStrut®: 2 equal loads



L Span (')	1-5/8 x 13/16 - 14 Ga	1-5/8 x 13/16 - 12 Ga	1-5/8 x 1-5/8 - 16 Ga	1-5/8 x 1-5/8 - 14 Ga	1-5/8 x 1-5/8 - 12 Ga	1-5/8 x 2-7/16 - 12 Ga	1-5/8 x 3-1/4 - 12 Ga
1	339	380	786	971	1,126	2,167	3,426
1 1/2	226	253	524	647	750	1,444	2,284
2	165	187	393	486	563	1,083	1,713
2 1/2	106	119	314	388	450	867	1,370
3	74	83	262	324	375	722	1,142
3 1/2	54	61	224	277	322	619	979
4	41	47	179	223	260	542	856
4 1/2	33	37	141	176	206	481	761
5	26	30	114	143	167	433	685
5 1/2	22	25	95	118	138	394	623
6	18	21	79	99	116	332	571
6 1/2	16	18	68	84	99	283	527
7	14	15	58	73	85	244	489
7 2/3	11	13	49	61	71	203	423
8	10	12	45	56	65	187	389
8 1/2		10	40	49	58	165	344
9			35	44	51	147	307
9 1/2			32	40	46	132	276
10			29	36	42	119	249
11			24	29	34	99	205
12			20	25	29	83	173
13			17	21	25	71	147
14			15	18	21	61	127
15			13	16	19	53	111
16			11	14	16	47	97
17				12	14	41	86
18				11	13	37	77
19					12	33	69
20					10	30	62

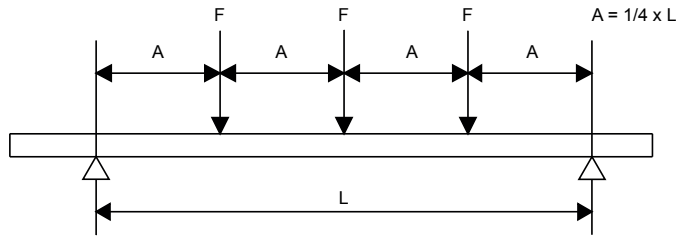
Max. allowed load in lbf.

The stated values are only valid for the actual strut.

The maximum safe load of all other construction parts have to be verified.

For large spans and high rail flanks (> = 2-7/16"), depending on the load, appropriate measures against occurring torsional forces may have to be taken.

BIS RapidStrut®: 3 equal loads



L Span (')	1-5/8 x 13/16 - 14 Ga	1-5/8 x 13/16 - 12 Ga	1-5/8 x 1-5/8 - 16 Ga	1-5/8 x 1-5/8 - 14 Ga	1-5/8 x 1-5/8 - 12 Ga	1-5/8 x 2-7/16 - 12 Ga	1-5/8 x 3-1/4 - 12 Ga
1	226	253	524	647	750	1,444	2,284
1 1/2	151	169	349	432	500	963	1,522
2	113	127	262	324	375	722	1142
2 1/2	76	86	209	259	300	578	913
3	53	60	175	216	250	481	761
3 1/2	39	44	150	185	214	413	652
4	30	33	128	160	187	361	571
4 1/2	23	26	101	126	148	321	507
5	19	21	82	102	120	289	457
5 1/2	16	18	68	85	99	263	415
6	13	15	57	71	83	238	381
6 1/2	11	13	49	61	71	203	351
7		11	42	52	61	175	326
7 2/3			35	44	51	146	298
8			32	40	47	134	279
8 1/2			28	35	41	119	247
9			25	32	37	106	220
9 1/2			23	28	33	95	198
10			21	26	30	86	178
11			17	21	25	71	147
12			14	18	21	59	124
13			12	15	18	51	106
14			10	13	15	44	91
15				11	13	38	79
16					12	33	70
17					10	30	62
18						26	55
19						24	49
20						21	45

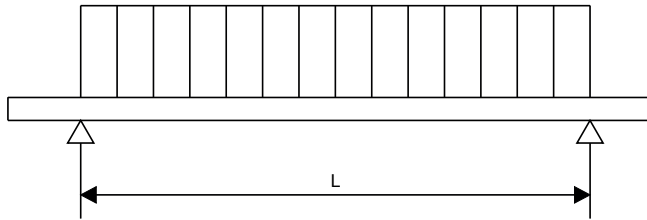
Max. allowed load in lbf.

The stated values are only valid for the actual strut.

The maximum safe load of all other construction parts have to be verified.

For large spans and high rail flanks ($> = 2-7/16"$), depending on the load, appropriate measures against occurring torsional forces may have to be taken.

BIS RapidStrut®: uniformly distributed load



L Span (')	1-5/8 x 13/16 - 14 Ga	1-5/8 x 13/16 - 12 Ga	1-5/8 x 1-5/8 - 16 Ga	1-5/8 x 1-5/8 - 14 Ga	1-5/8 x 1-5/8 - 12 Ga	1-5/8 x 2-7/16 - 12 Ga	1-5/8 x 3-1/4 - 12 Ga
1	905	1,013	2,095	2,589	3,001	5,778	9,135
1 1/2	603	675	1,396	1,726	2,001	3,852	6,090
2	451	506	1,047	1,295	1,501	2,889	4,567
2 1/2	289	326	838	1,036	1,201	2,311	3,654
3	200	226	698	863	1,000	1,926	3,045
3 1/2	147	166	598	740	858	1,651	2,610
4	113	127	487	607	710	1,444	2,284
4 1/2	89	101	385	480	561	1,284	2,030
5	72	81	312	389	454	1,156	1,827
5 1/2	60	67	258	321	375	1,050	1,661
6	50	57	217	270	315	904	1,522
6 1/2	43	48	185	230	269	770	1,405
7	37	42	159	198	232	664	1,305
7 2/3	31	35	133	165	193	554	1,153
8	28	32	122	152	177	508	1,059
8 1/2	25	28	108	135	157	450	938
9	22	25	96	120	140	402	837
9 1/2	20	23	86	108	126	361	751
10	18	20	78	97	114	325	678
11	15	17	64	80	94	269	560
12	13	14	54	67	79	226	471
13	11	12	46	58	67	193	401
14		10	40	50	58	166	346
15			35	43	50	145	301
16			30	38	44	127	265
17			27	34	39	113	235
18			24	30	35	100	209
19			22	27	31	90	188
20			19	24	28	81	169

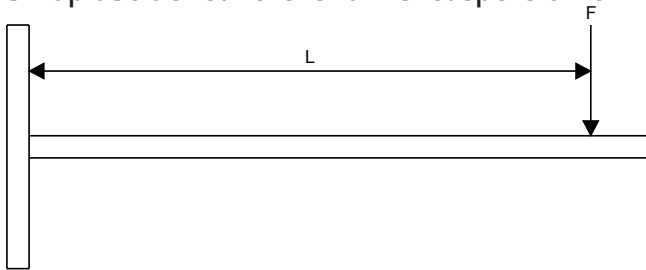
Max. allowed load in lbf.

The stated values are only valid for the actual strut.

The maximum safe load of all other construction parts have to be verified.

For large spans and high rail flanks (> = 2-7/16"), depending on the load, appropriate measures against occurring torsional forces may have to be taken.

BIS RapidStrut® Cantilever arms: suspension on 1 point



L Span (')	1-5/8 x 13/16 - 14 Ga	1-5/8 x 13/16 - 12 Ga	1-5/8 x 1-5/8 - 16 Ga	1-5/8 x 1-5/8 - 14 Ga	1-5/8 x 1-5/8 - 12 Ga	1-5/8 x 2-7/16 - 12 Ga	1-5/8 x 3-1/4 - 12 Ga
1/2	226	253	524	647	750	1,444	2,284
1	70	80	262	324	375	722	1,142
1 1/2	31	35	135	169	197	481	761
2	18	20	76	95	111	318	571
2 1/2	11	13	49	61	71	203	424
3			34	42	49	141	294
3 1/2			25	31	36	104	216
4			19	24	28	79	165
4 1/2			15	19	22	63	131
5			12	15	18	51	106

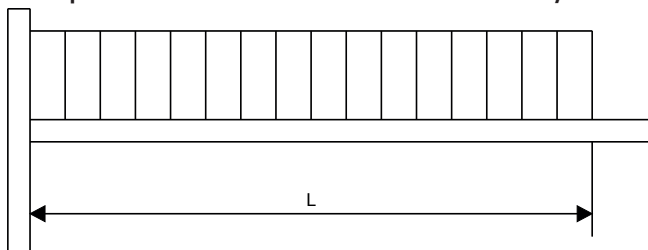
Max. allowed load in lbf.

The stated values are only valid for the actual strut.

The maximum safe load of all other construction parts have to be verified.

For large spans and high rail flanks (> = 2-7/16"), depending on the load, appropriate measures against occurring torsional forces may have to be taken.

BIS RapidStrut® Cantilever arms: uniformly distributed load



L Span (')	1-5/8 x 13/16 - 14 Ga	1-5/8 x 13/16 - 12 Ga	1-5/8 x 1-5/8 - 16 Ga	1-5/8 x 1-5/8 - 14 Ga	1-5/8 x 1-5/8 - 12 Ga	1-5/8 x 2-7/16 - 12 Ga	1-5/8 x 3-1/4 - 12 Ga
1/2	452	506	1,047	1,295	1,501	2,889	4,567
1	188	212	524	647	750	1,444	2,284
1 1/2	83	94	349	432	500	963	1,522
2	47	53	203	253	296	722	1,142
2 1/2	30	34	130	162	189	542	913
3	21	24	90	112	131	377	761
3 1/2	15	17	66	83	97	277	576
4	12	13	51	63	74	212	441
4 1/2		10	40	50	58	167	349
5			32	40	47	136	282

Max. allowed load in lbf.

The stated values are only valid for the actual strut.

The maximum safe load of all other construction parts have to be verified.

For large spans and high rail flanks ($> = 2-7/16''$), depending on the load, appropriate measures against occurring torsional forces may have to be taken.

BIS RapidStrut®

For versatile support applications



Fast and easy

The accessories are pre-assembled and delivered 'ready to use' on site. The plastic spring allows the slide nut to be fixed easily into the strut, retaining the assembly in place before final tightening.



Extensive system

The BIS RapidStrut® fixing system offers an extensive choice for rail profiles and cantilever arms. A broad range of accessories are also available including: slide nuts, T-bolt assemblies and swivel hangers.



BIS RapidStrut® Fixing Rail DS 5

The DS 5 has a unique hole pattern allowing BIS RapidStrut® Accessories to be mounted quickly on both sides of the rail.

For indoor and outdoor use

Extreme corrosion resistance. For more information about the BIS UltraProtect® 1000 System, see walraven.com

