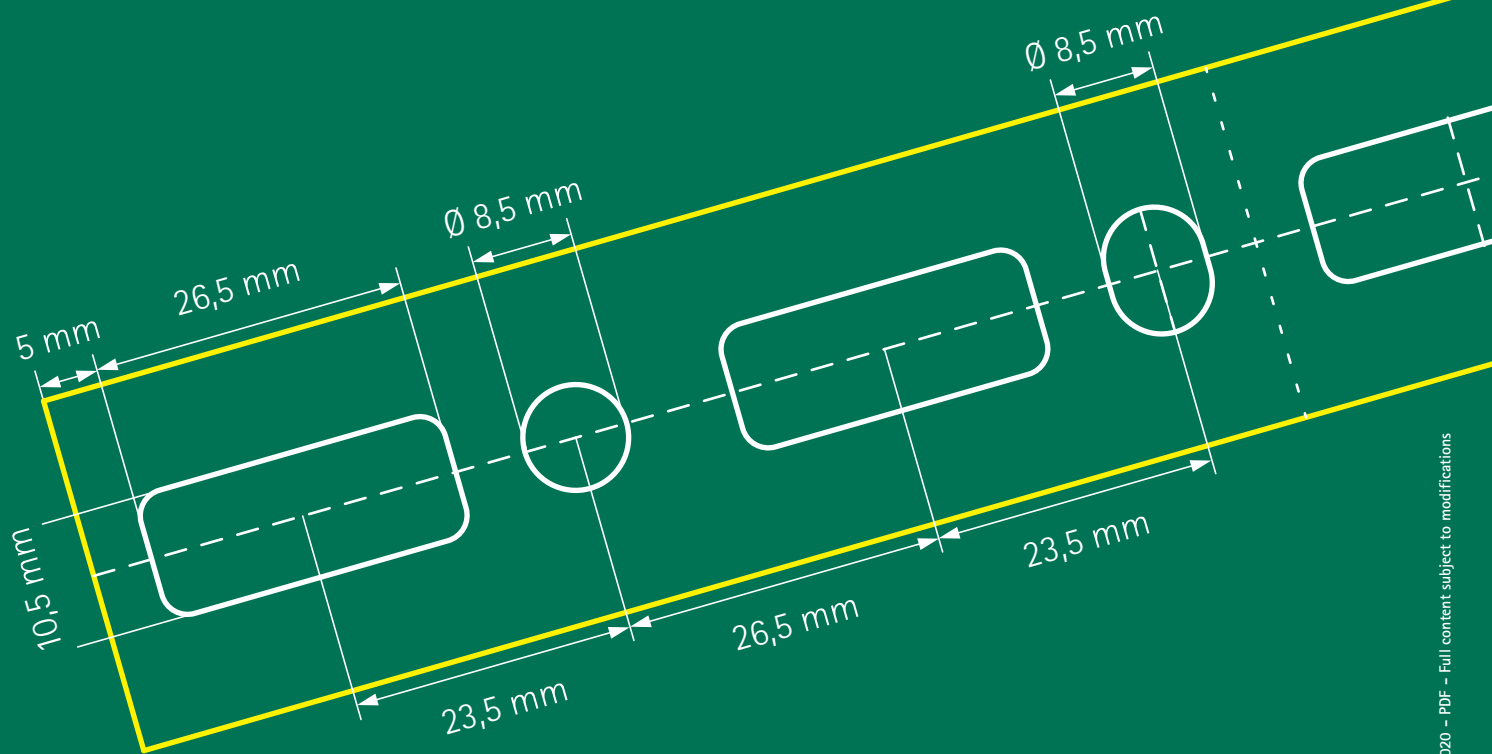


## Rail section properties and load tables



# Technical Data

## BIS RapidStrut® Profiles

# BIS RapidRail®



## Fast and easy fixing



### Insert, lock, done

The accessories are pre-assembled and delivered 'ready to use' to site. The plastic spring allows the slide nut to be fixed into the rail easily saving up to 40% fixing time.



### Complete range

The BIS RapidRail® System offers a complete and effective range of rail profiles, cantilever arms and accessories for pipe fixing and rail construction.

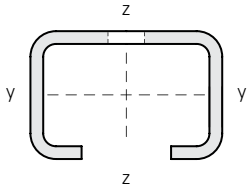


### Fast and easy fixing

BIS RapidRail® WM15, WM30 and WM35 have a unique hole pattern allowing the accessories to be fitted on both sides of the rail quickly and easily.

# System BIS RapidRail®

## Table of rail section properties



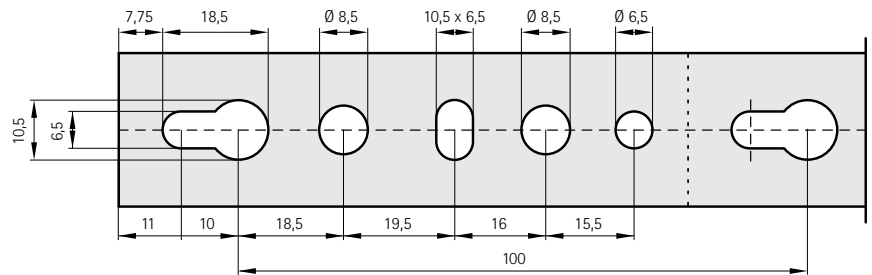
Type	Weight (kg / m)	Moment of inertia cm <sup>4</sup>		Section modulus cm <sup>3</sup>	
		I <sub>y</sub>	I <sub>z</sub>	W <sub>y</sub>	W <sub>z</sub>
WM0	0.58	0.28	0.91	0.30	0.67
WM1	0.85	0.28	1.47	0.35	0.98
WM15	0.77	0.49	1.66	0.49	1.10
WM2	1.31	1.71	2.65	1.08	1.76
WM30	1.67	4.57	3.79	2.03	2.53
WM35	1.65	3.62	5.03	1.81	2.65

See Rail load tables for safe working loads.

## Perforation pattern for fixing to ceiling or wall.

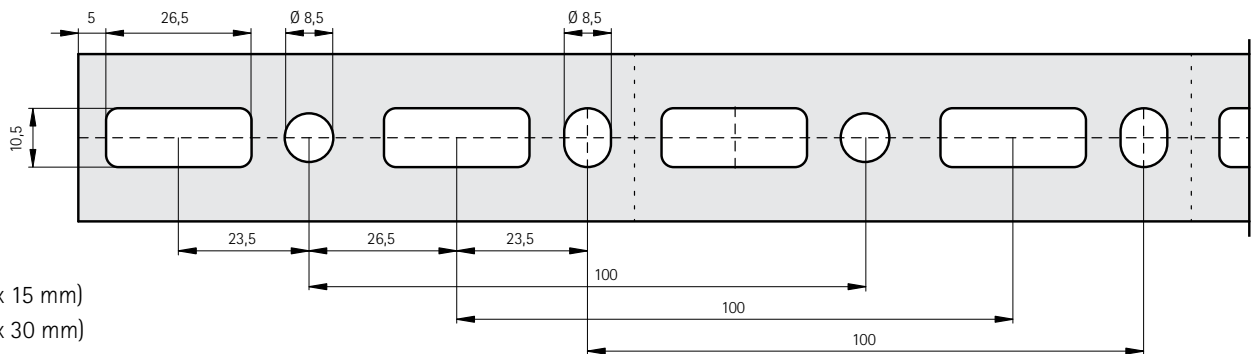
Distance between rail end and first hole is always equal. All sizes in mm.

WM0 (27 x 18 mm)



WM1 (30 x 15 mm)

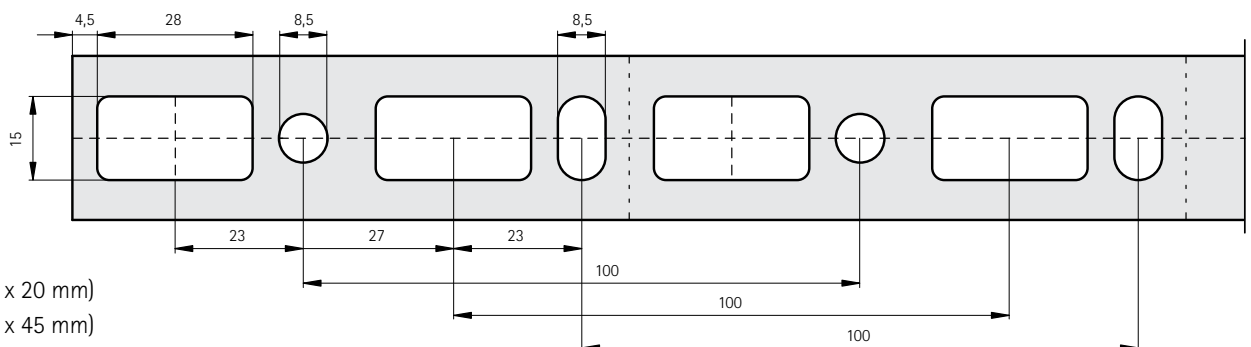
WM2 (30 x 30 mm)



WM15 (30 x 20 mm)

WM30 (30 x 45 mm)

WM35 (38 x 40 mm)



# 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  $160 \text{ N/mm}^2$  (see picture 1).

1 N (Newton) = 0,102 kg

1 kg = 9,8 N (Newton)

## Fixing of rails to walls 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).

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

## Special conditions

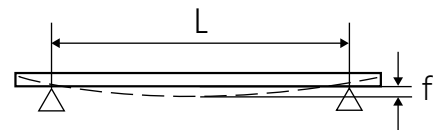
In case of doubt or for special conditions not stated in the loading tables, please do not hesitate to contact our technical department for their advice.

## Hanging of rails from the ceiling

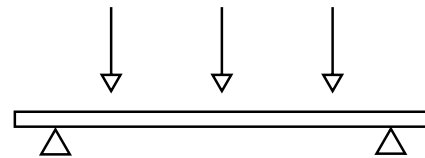
When hanging rails from the ceiling we recommend the use of U-formed washers on the open side of the rail (see picture 3).

## Methods of loading

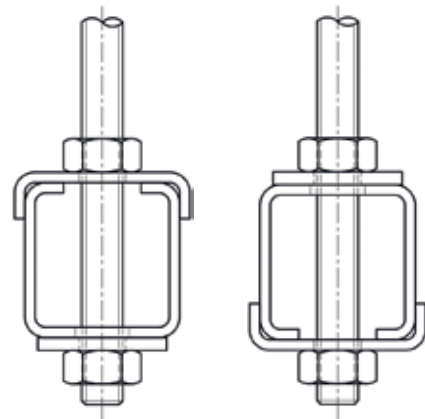
Where loads are suspended beneath rails (e.g. hanging pipes), the load must not exceed the relevant safe load of the slide nut. To increase rigidity of the installation we recommend the use of a U-formed washer (see picture 4).



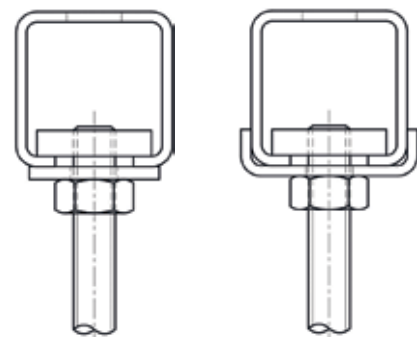
Picture 1



Picture 2

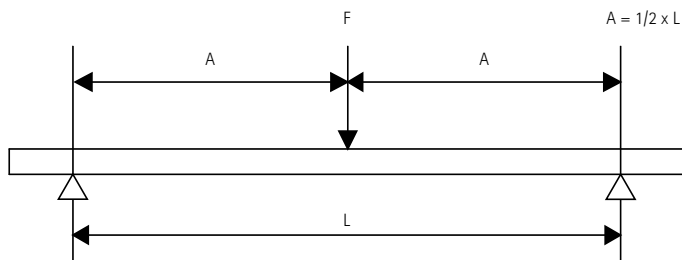


Picture 3



Picture 4

## BIS RapidRail® Fixing rail: suspension on 1 point



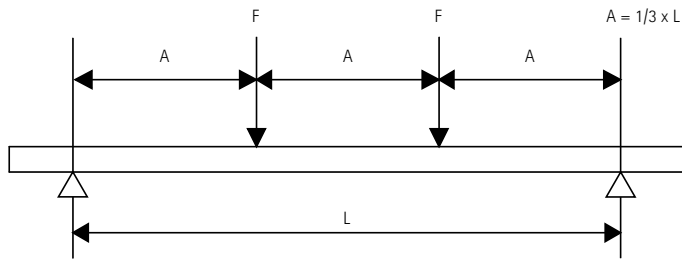
L (mm)	WMO (27 x 18)	WM1 (30 x 15)	WM15 (30 x 20)	WM2 (30 x 30)	WM30 (30 x 45)	WM35 (38 x 40)
250	758	899	1,249	3,238	5,199	4,821
300	631	749	1,041	2,698	4,333	4,018
350	541	642	892	2,313	3,714	3,444
400	474	562	781	2,023	3,250	3,013
450	421	499	694	1,799	2,889	2,679
500	379	449	625	1,619	2,600	2,411
600	316	358	521	1,349	2,166	2,009
700	266	263	446	1,156	1,857	1,722
800	204	202	348	1,012	1,625	1,507
900	161	159	275	899	1,444	1,339
1,000	130	129	223	780	1,300	1,205
1,200	91	90	155	542	1,083	1,004
1,400	67	66	114	398	928	841
1,600	51	50	87	305	812	644
1,800	40	40	69	241	643	509
2,000	33	32	56	195	521	412
2,250	26	25	44	154	412	326
2,500	21	21	36	125	333	264
2,750	17	17	29	103	275	218
3,000	14	14	25	87	231	183
3,250	12	12	21	74	197	156
3,500	11	11	18	64	170	135
3,750	-	-	16	55	148	117
4,000	-	-	14	49	130	103
4,250	-	-	12	43	115	91
4,500	-	-	11	39	103	81
4,750	-	-	-	35	92	73
5,000	-	-	-	31	83	66
5,250	-	-	-	28	76	60
5,500	-	-	-	26	69	55
5,750	-	-	-	24	63	50
6,000	-	-	-	22	58	46

Max. allowed load in N.

The stated values are only valid for the fixing rail.

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

## BIS RapidRail® Fixing rail: 2 equal loads



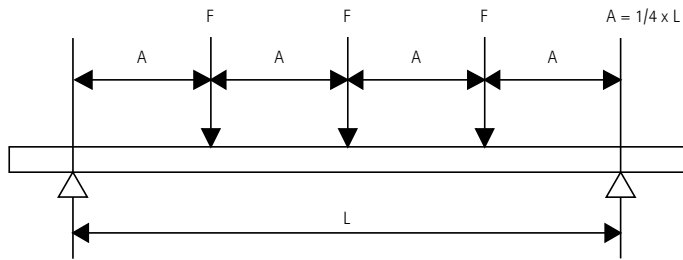
L (mm)						
	WM0 (27 x 18)	WM1 (30 x 15)	WM15 (30 x 20)	WM2 (30 x 30)	WM30 (30 x 45)	WM35 (38 x 40)
250	568	674	937	2,428	3,900	3,616
300	474	562	781	2,023	3,250	3,013
350	406	481	669	1,734	2,785	2,583
400	355	421	586	1,518	2,437	2,260
450	316	374	521	1,349	2,166	2,009
500	284	303	468	1,214	1,950	1,808
600	213	210	363	1,012	1,625	1,507
700	156	155	267	867	1,393	1,291
800	120	118	204	715	1,219	1,130
900	95	94	161	565	1,083	1,004
1,000	77	76	131	458	975	904
1,200	53	53	91	318	812	672
1,400	39	39	67	234	624	494
1,600	30	30	51	179	478	378
1,800	24	23	40	141	377	299
2,000	19	19	33	114	306	242
2,250	15	15	26	90	242	191
2,500	12	12	21	73	196	155
2,750	10	10	17	61	162	128
3,000	-	-	15	51	136	108
3,250	-	-	12	43	116	92
3,500	-	-	11	37	100	79
3,750	-	-	-	33	87	69
4,000	-	-	-	29	76	60
4,250	-	-	-	25	68	54
4,500	-	-	-	23	60	48
4,750	-	-	-	20	54	43
5,000	-	-	-	18	49	39
5,250	-	-	-	17	44	35
5,500	-	-	-	15	40	32
5,750	-	-	-	14	37	29
6,000	-	-	-	13	34	27







Max. allowed load in N. per suspension point (F).

The stated values are only valid for the fixing rail.

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

## BIS RapidRail® Fixing rail: 3 equal loads



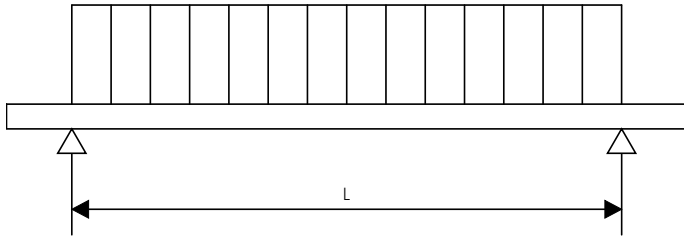
L (mm)						
	WM0 (27 x 18)	WM1 (30 x 15)	WM15 (30 x 20)	WM2 (30 x 30)	WM30 (30 x 45)	WM35 (38 x 40)
250	379	449	625	1,619	2,600	2,411
300	316	374	521	1,349	2,166	2,009
350	271	321	446	1,156	1,857	1,722
400	237	281	390	1,012	1,625	1,507
450	210	250	347	899	1,444	1,339
500	189	217	312	809	1,300	1,205
600	153	151	260	674	1,083	1,004
700	112	111	191	578	928	861
800	86	85	147	506	812	753
900	68	67	116	406	722	670
1,000	55	54	94	328	650	603
1,200	38	38	65	228	542	482
1,400	28	28	48	168	448	354
1,600	21	21	37	128	343	271
1,800	17	17	29	101	271	214
2,000	14	14	23	82	219	174
2,250	11	11	19	65	173	137
2,500	-	-	15	53	140	111
2,750	-	-	12	43	116	92
3,000	-	-	10	36	97	77
3,250	-	-	-	31	83	66
3,500	-	-	-	27	72	57
3,750	-	-	-	23	62	49
4,000	-	-	-	21	55	43
4,250	-	-	-	18	49	38
4,500	-	-	-	16	43	34
4,750	-	-	-	15	39	31
5,000	-	-	-	13	35	28
5,250	-	-	-	12	32	25
5,500	-	-	-	11	29	23
5,750	-	-	-	-	27	21
6,000	-	-	-	-	24	19

Max. allowed load in N. per suspension point (F).

The stated values are only valid for the fixing rail.

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

## BIS RapidRail® Fixing rail: Uniformly distributed load



L (mm)						
	WM0 (27 x 18)	WM1 (30 x 15)	WM15 (30 x 20)	WM2 (30 x 30)	WM30 (30 x 45)	WM35 (38 x 40)
250	1,516	1,797	2,499	6,475	10,399	9,643
300	1,263	1,498	2,082	5,396	8,666	8,036
350	1,083	1,284	1,785	4,625	7,428	6,888
400	947	1,123	1,562	4,047	6,499	6,027
450	842	998	1,388	3,597	5,777	5,357
500	758	826	1,249	3,238	5,199	4,821
600	580	574	990	2,698	4,333	4,018
700	426	421	727	2,313	3,714	3,444
800	326	323	557	1,950	3,250	3,013
900	258	255	440	1,541	2,889	2,679
1,000	209	206	356	1,248	2,600	2,411
1,200	145	143	248	867	2,166	1,832
1,400	106	105	182	637	1,701	1,346
1,600	82	81	139	488	1,302	1,031
1,800	64	64	110	385	1,029	814
2,000	52	52	89	312	833	660
2,250	41	41	70	247	658	521
2,500	33	33	57	200	533	422
2,750	28	27	47	165	441	349
3,000	23	23	40	139	370	293
3,250	20	20	34	118	316	250
3,500	17	17	29	102	272	215
3,750	15	15	25	89	237	188
4,000	13	13	22	78	208	165
4,250	12	11	20	69	185	146
4,500	10	10	18	62	165	130
4,750	-	-	16	55	148	117
5,000	-	-	14	50	133	106
5,250	-	-	13	45	121	96
5,500	-	-	12	41	110	87
5,750	-	-	11	38	101	80
6,000	-	-	-	35	93	73

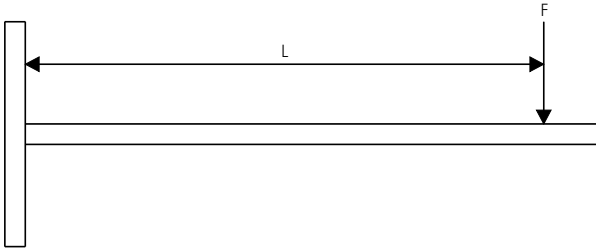
Max. allowed load in N.






The stated values are only valid for the fixing rail.

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



## BIS RapidRail® Cantilever arms: Suspension on 1 point



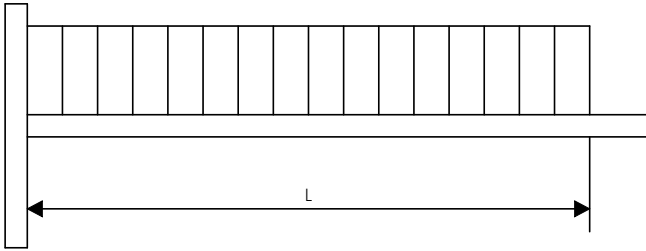
L (mm)					
	WMO (27 x 18)	WM1 (30 x 15)	WM15 (30 x 20)	WM2 (30 x 30)	WM35 (38 x 40)
150	316	358	521	1,349	2,009
200	204	202	348	1,012	1,507
250	130	129	223	780	1,205
300	91	90	155	542	1,004
350	67	66	114	398	841
400	51	50	87	305	644
500	33	32	56	195	412
600	23	22	39	135	286
700	17	16	28	100	210
800	13	13	22	76	161
900	10	-	17	60	127
1,000	-	-	14	49	103






Max. allowed load in N.

The stated values are only valid for the fixing rail.

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

## BIS RapidRail® Cantilever arms: Uniformly distributed load



L (mm)					
	WMO (27 x 18)	WM1 (30 x 15)	WM15 (30 x 20)	WM2 (30 x 30)	WM35 (38 x 40)
150	631	749	1,041	2,698	4,018
200	474	538	781	2,023	3,013
250	348	344	594	1,619	2,411
300	242	239	413	1,349	2,009
350	177	176	303	1,061	1,722
400	136	134	232	813	1,507
500	87	86	149	520	1,099
600	60	60	103	361	763
700	44	44	76	265	561
800	34	34	58	203	429
900	27	27	46	161	339
1,000	22	22	37	130	275

Max. allowed load in N.

The stated values are only valid for the fixing rail.

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