

Using of fixing rod Loading Tables

Calculation method

The published safe working loads are based on tests with perforated (slotted) rail. For non-perforated rail the safe working loads can be taken as 20% higher.

Loads are calculated taking into consideration a maximum deflection (f) of length $1/200 \times L$ and a maximum bending stress of 160 N/mm^2 .

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.

Methods of loading

Where loads are suspended beneath rails, 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.

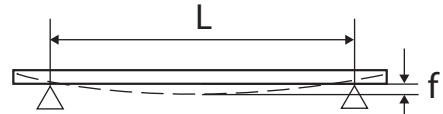
Reading the rail loading tables

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.

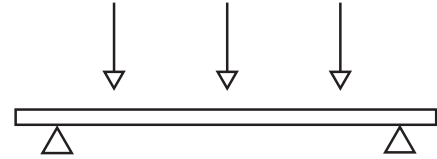
Where the segment is marked with a hyphen, the stated length cannot be safely loaded.

Special conditions

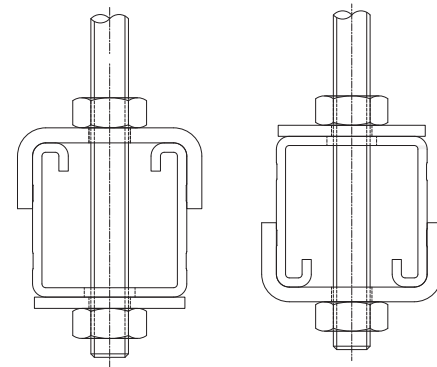
In case of doubt or for special conditions not stated in the loading tables, please do not hesitate to contact our technical department for their advice.



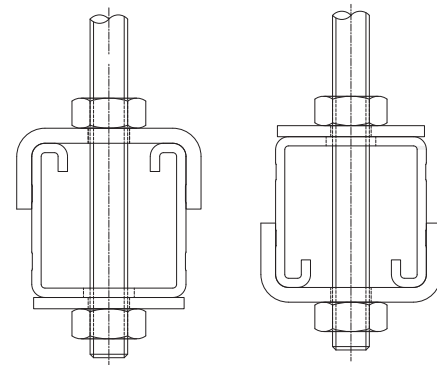
Picture 1: Calculation of loads, f =maximal deflection, L =length



Picture 2: Static load at free bending support



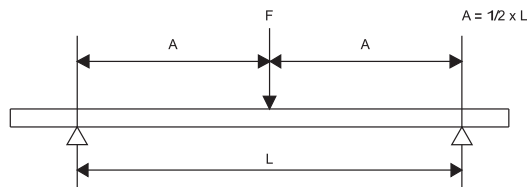
Picture 3: Use of Walraven Strut Washer U-shaped on the open side of the rail



Picture 4: Increase rigidity for loads beneath the rail by using U-shaped washers (right picture) instead of standard flat washers (left picture)

RapidStrut® Fixing Rail

Suspension on 1 point

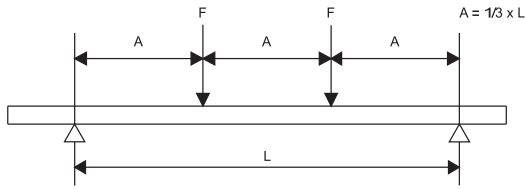


L (mm)	BIS RapidStrut® single									DS5	BIS RapidStrut® double			
	WM0 (27x18)	41x21 (1.5)	41x21 (2.0)	41x21 (2.5)	41x41 (1.5)	41x41 (2.0)	41x41 (2.5)	41x62 (2.5)	41x82 (2.5)		41x51 (2.0)	41x21D (2.5)	41x41D (2.5)	41x62D (2.5)
250	758	1,848	2,000	2,381	5,427	6,556	7,611	14,730	23,035	8,812	7,081	22,804	32,686	42,030
300	631	1,540	1,660	1,984	4,523	5,463	6,342	12,275	19,196	7,343	5,901	19,004	27,238	35,025
350	541	1,320	1,420	1,701	3,877	4,683	5,436	10,522	16,453	6,294	5,058	16,289	21,347	30,021
400	474	1,155	1,240	1,488	3,392	4,098	4,757	9,206	14,397	5,507	4,426	14,253	20,429	26,269
450	421	1,027	1,110	1,323	3,015	3,642	4,228	8,183	12,797	4,895	3,934	12,669	18,159	23,350
500	379	924	995	1,190	2,714	3,278	3,805	7,365	11,517	4,406	3,540	11,402	16,343	21,015
600	316	770	830	992	2,261	2,732	3,171	6,538	9,598	3,671	2,950	9,502	13,619	17,513
700	266	660	710	850	1,938	2,341	2,718	5,261	8,227	3,147	2,529	8,144	11,674	15,011
800	204	557	620	719	1,696	2,049	2,378	4,603	7,198	2,754	2,213	7,126	10,214	13,134
900	161	440	490	568	1,508	1,821	2,114	4,092	6,399	2,448	1,967	6,335	9,079	11,675
1,000	130	356	490	460	1,357	1,639	1,903	3,683	5,759	2,203	1,770	5,701	8,172	10,508
1,200	91	247	408	320	1,131	1,366	1,586	3,069	4,799	1,836	1,475	4,751	6,810	8,756
1,400	67	182	348	235	969	1,171	1,359	2,630	4,113	1,573	1,264	4,072	5,837	7,505
1,600	51	139	302	180	794	952	1,114	2,302	3,599	1,377	1,015	3,563	5,107	6,567
1,800	40	110	266	142	628	752	881	2,046	3,199	1,224	802	3,167	4,540	5,838
2,000	33	89	237	115	508	609	713	1,841	2,879	1,004	650	2,851	-	-
2,250	26	70	208	91	402	481	564	1,624	2,559	794	513	2,534	-	-
2,500	21	57	184	74	325	390	456	1,355	2,303	643	416	2,280	-	-
2,750	17	47	164	61	269	322	377	1,087	2,094	531	344	2,073	-	-
3,000	14	40	148	51	226	271	317	913	1,890	446	289	1,864	-	-
3,250	12	34	133	44	193	231	270	778	1,611	380	246	1,588	-	-
3,500	11	29	121	38	166	199	233	671	1,389	328	212	1,370	-	-
3,750	-	25	110	33	145	173	203	584	1,210	286	185	1,193	-	-
4,000	-	22	100	29	127	152	178	514	1,063	251	162	1,049	-	-
4,250	-	20	91	25	113	135	158	455	942	222	144	929	-	-
4,500	-	18	83	23	100	120	141	406	840	198	128	828	-	-
4,750	-	16	75	20	90	108	126	364	754	178	115	744	-	-
5,000	-	14	68	18	81	97	114	329	680	161	104	671	-	-
5,250	-	13	62	17	74	88	104	298	617	146	94	609	-	-
5,500	-	12	56	15	67	81	94	272	562	133	86	555	-	-
5,750	-	11	51	14	62	74	86	249	515	122	79	507	-	-
6,000	-	-	-	13	56	68	79	228	473	112	72	466	-	-

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.
 For large spans and high rail flanks (> = 62 mm), depending on the load, appropriate measures against occurring torsional forces may have to be taken.

RapidStrut® Fixing Rail

2 equal loads

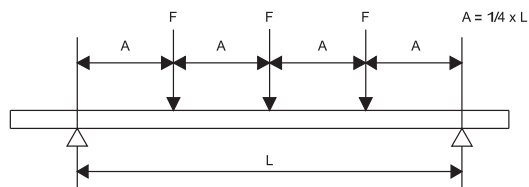


L (mm)	BIS RapidStrut® Single									DS5	BIS RapidStrut® double			
	WM0 (27x18)	41x21 (1.5)	41x21 (2.0)	41x21 (2.5)	41x41 (1.5)	41x41 (2.0)	41x41 (2.5)	41x62 (2.5)	41x82 (2.5)		41x51 (2.0)	41x21D (2.5)	41x41D (2.5)	41x62D (2.5)
250	568	1,386	1,500	1,786	4,070	4,917	5,708	11,048	17,276	6,609	5,311	17,103	24,515	31,523
300	474	1,155	1,250	1,488	3,392	4,098	4,757	9,206	14,397	5,507	4,426	14,258	20,429	26,269
350	406	990	1,070	1,275	2,907	3,512	4,077	7,891	12,340	4,720	3,793	12,217	17,510	22,516
400	355	866	935	1,116	2,544	3,073	3,568	6,905	10,798	4,130	3,319	10,690	15,322	19,702
450	316	770	830	992	2,261	2,732	3,171	6,138	9,598	3,671	2,950	9,502	13,619	17,513
500	284	693	745	893	2,035	2,459	2,854	5,524	8,638	3,304	2,655	8,552	12,257	15,761
600	213	578	622	744	1,696	2,049	2,378	4,603	7,198	2,754	2,213	7,126	10,214	13,134
700	156	427	532	552	1,454	1,756	2,039	3,946	6,170	2,360	1,897	6,108	8,755	11,258
800	120	327	465	422	1,272	1,537	1,784	3,452	5,399	2,065	1,660	5,345	7,661	9,851
900	95	258	412	334	1,131	1,366	1,586	3,069	4,799	1,836	1,475	4,751	6,810	8,756
1,000	77	209	370	270	1,018	1,229	1,427	2,762	4,319	1,652	1,328	4,276	6,129	7,881
1,200	39	145	307	188	829	993	1,163	2,302	3,599	1,377	1,059	3,563	5,107	6,567
1,400	30	107	261	138	609	730	854	1,973	3,085	1,180	778	3,054	4,378	5,629
1,600	24	82	226	106	466	559	654	1,726	2,699	921	596	2,672	3,830	4,925
1,800	19	65	200	83	368	442	517	1,489	2,399	728	471	2,375	3,405	4,378
2,000	15	52	178	68	298	358	419	1,206	2,160	590	381	2,138	-	-
2,250	12	41	156	53	236	283	331	953	1,920	466	301	1,900	-	-
2,500	10	33	138	43	191	229	268	772	1,598	377	244	1,576	-	-
2,750	28	20	123	36	158	189	221	638	1,320	312	202	1,302	-	-
3,000	-	23	111	30	133	159	186	536	1,109	262	169	1,094	-	-
3,250	-	20	100	26	113	135	159	457	945	223	144	932	-	-
3,500	-	17	90	22	97	117	137	394	815	192	124	804	-	-
3,750	-	15	82	19	85	102	119	343	710	168	108	700	-	-
4,000	-	13	75	17	75	89	105	302	624	147	95	615	-	-
4,250	-	12	68	15	66	79	93	267	553	131	84	545	-	-
4,500	-	10	62	13	59	71	83	238	493	116	75	486	-	-
4,750	-	-	56	12	53	63	74	214	443	105	68	436	-	-
5,000	-	-	51	11	48	57	67	193	399	94	61	394	-	-
5,250	-	-	46	-	43	52	61	175	362	86	55	357	-	-
5,500	-	-	42	-	39	47	55	159	330	78	50	326	-	-
5,750	-	-	38	-	36	43	51	146	302	71	46	298	-	-
6,000	-	-	34	-	33	40	47	134	277	66	42	274	-	-

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.
 For large spans and high rail flanks (> = 62 mm), depending on the load, appropriate measures against occurring torsional forces may have to be taken.

RapidStrut® Fixing Rail

3 equal loads

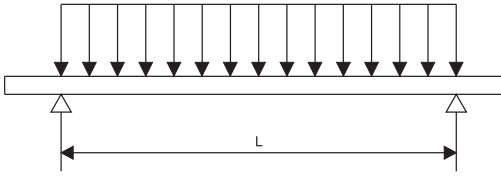


L (mm)	BIS RapidStrut® single									DS5	BIS RapidStrut® double			
	WM0 (27x18)	41x21 (1.5)	41x21 (2.0)	41x21 (2.5)	41x41 (1.5)	41x41 (2.0)	41x41 (2.5)	41x62 (2.5)	41x82 (2.5)		41x51 (2.0)	41x21D (2.5)	41x41D (2.5)	41x62D (2.5)
250	379	924	1,000	1,190	2,714	3,278	3,805	7,365	11,517	4,406	3,540	11,402	16,343	21,015
300	316	770	830	992	2,261	2,732	3,171	6,138	9,598	3,671	2,950	9,502	13,619	17,513
350	271	660	710	850	1,938	2,341	2,718	5,261	8,227	3,147	2,529	8,144	11,674	15,011
400	237	578	623	744	1,696	2,049	2,378	4,603	7,198	2,754	2,213	7,126	10,214	13,134
450	210	513	555	661	1,508	1,821	2,114	4,092	6,399	2,448	1,967	6,335	9,079	11,675
500	189	462	497	595	1,357	1,639	1,903	3,683	5,759	2,203	1,770	5,701	8,172	10,508
600	153	385	415	496	1,131	1,366	1,586	3,069	4,799	1,836	1,475	4,751	6,810	8,756
700	112	306	355	396	969	1,171	1,359	2,630	4,113	1,573	1,264	4,072	5,837	7,505
800	86	234	310	303	848	1,024	1,189	2,302	3,599	1,377	1,106	3,563	5,107	6,567
900	68	185	275	239	754	911	1,057	2,046	3,199	1,224	983	3,167	4,540	5,838
1,000	55	150	247	194	678	820	951	1,841	2,879	1,101	885	2,851	4,086	5,254
1,200	38	104	204	135	565	683	793	1,534	2,399	918	738	2,375	3,405	4,378
1,400	28	77	180	99	437	524	613	1,315	2,057	787	558	2,036	2,918	3,753
1,600	21	59	151	76	335	401	469	1,151	1,800	661	427	1,782	2,554	3,284
1,800	17	46	133	60	264	317	371	1,023	1,600	522	338	1,584	2,270	2,919
2,000	14	38	118	48	214	257	300	865	1,440	423	274	1,425	-	-
2,250	11	30	104	38	169	203	237	684	1,280	334	216	1,267	-	-
2,500	-	24	92	31	137	164	192	554	1,146	271	175	1,130	-	-
2,750	-	-	82	26	113	136	159	458	947	224	145	934	-	-
3,000	-	-	-	22	95	114	133	385	796	188	122	785	-	-
3,250	-	-	-	18	81	97	114	328	678	160	104	669	-	-
3,500	-	-	-	16	70	84	98	283	585	138	89	577	-	-
3,750	-	-	-	14	61	73	85	246	509	120	78	502	-	-
4,000	-	-	-	12	53	64	75	216	448	106	68	441	-	-
4,250	-	-	-	11	47	57	67	192	397	94	61	391	-	-
4,500	-	-	-	-	42	51	59	171	354	84	54	349	-	-
4,750	-	-	-	-	38	45	53	153	317	75	48	313	-	-
5,000	-	-	-	-	34	41	48	138	287	68	44	283	-	-
5,250	-	-	-	-	31	37	44	126	260	61	40	256	-	-
5,500	-	-	-	-	28	34	40	114	237	56	36	234	-	-
5,750	-	-	-	-	26	31	36	106	217	51	33	214	-	-
6,000	-	-	-	-	24	29	33	96	199	47	30	196	-	-

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.
 For large spans and high rail flanks (≥ 62 mm), depending on the load, appropriate measures against occurring torsional forces may have to be taken.

RapidStrut® Fixing Rail

Uniformly distributed load

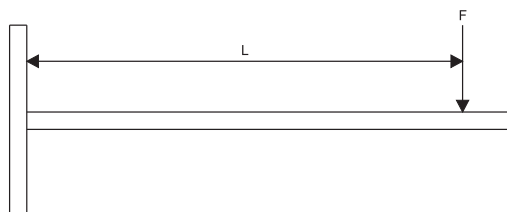


L (mm)	BIS RapidStrut® single									DS5	BIS RapidStrut® double			
	WM0 (27x18)	41x21 (1.5)	41x21 (2.0)	41x21 (2.5)	41x41 (1.5)	41x41 (2.0)	41x41 (2.5)	41x62 (2.5)	41x82 (2.5)		41x51 (2.0)	41x21D (2.5)	41x41D (2.5)	41x62D (2.5)
250	1,516	3,697	4436	4,762	10,854	13,112	15222	29,460	46,070	17,623	14,162	41,609	61,372	84,060
300	1,263	3,081	3697	3,968	9,045	10,927	12,685	24,550	38,391	14,686	11,802	38,007	54,477	70,050
350	1,083	2,640	3168	3,401	7,753	9,366	10,873	21,043	32,907	12,588	10,116	32,578	46,694	60,043
400	842	2,310	2772	2,970	6,784	8,195	9,514	18,413	28,794	11,014	8,851	28,506	40,858	52,538
450	750	2,054	2465	2,645	6,030	7,285	8,457	16,367	25,594	9,791	7,868	25,338	36,318	46,700
500	500	1,848	2218	2,381	5,427	6,556	7,611	14,730	23,035	8,812	7,081	22,804	31,686	42,030
600	428	1,540	1848	1,984	4,523	5,463	6,342	12,275	19,196	7,343	5,901	19,004	27,238	35,025
700	326	1,163	1396	1,503	3,877	4,683	5,436	10,522	16,453	6,294	5,058	16,289	23,347	30,021
800	258	891	1069	1,151	3,392	4,098	4,757	9,206	14,397	5,507	4,426	14,253	20,429	26,269
900	209	704	845	909	3,015	3,642	4,228	8,183	12,797	4,895	3,934	12,669	18,159	23,350
1,000	145	501	601	737	2,714	3,278	3,805	7,365	11,517	4,406	3,540	11,402	16,343	21,015
1,200	106	396	475	512	2,260	2,708	3,170	6,138	9,598	3,671	2,887	9,502	13,619	17,513
1,400	82	291	349	376	1,660	1,989	2,329	5,261	8,227	3,147	2,121	8,144	11,674	15,011
1,600	64	223	268	288	1,271	1,523	1,783	4,603	7,198	2,511	1,624	7,126	10,214	13,134
1,800	52	176	211	227	1,004	1,204	1,409	4,059	6,399	1,984	1,283	6,335	9,079	11,675
2,000	41	143	172	184	814	975	1,141	3,288	5,159	1,607	1,039	5,701	-	-
2,250	33	113	136	146	643	770	902	2,598	5,119	1,270	821	5,068	-	-
2,500	28	91	109	118	521	624	730	2,104	4,355	1,028	665	4,295	-	-
2,750	23	75	90	97	430	516	604	1,739	3,599	850	550	3,549	-	-
3,000	20	63	76	82	362	433	507	1,461	3,024	714	462	2,983	-	-
3,250	17	54	65	70	308	369	432	1,245	2,577	609	394	2,541	-	-
3,500	15	47	56	60	266	318	373	1,074	2,222	525	339	2,191	-	-
3,750	13	41	49	52	231	277	325	935	1,936	457	296	1,909	-	-
4,000	12	36	43	46	203	244	285	822	1,701	402	260	1,678	-	-
4,250	10	32	38	41	180	216	253	728	1,507	356	230	1,486	-	-
4,500	-	28	34	36	161	193	225	649	1,344	317	205	1,326	-	-
4,750	-	25	30	33	144	173	202	583	1,206	285	184	1,190	-	-
5,000	-	23	28	29	130	156	183	526	1,089	257	166	1,074	-	-
5,250	-	21	25	27	118	141	166	477	988	233	151	974	-	-
5,500	-	19	23	24	108	129	151	435	900	212	137	887	-	-
5,750	-	17	20	22	98	118	138	398	823	194	126	812	-	-
6,000	-	16	19	20	90	108	127	365	756	179	115	746	-	-

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.
 For large spans and high rail flanks (>= 62 mm), depending on the load, appropriate measures against occurring torsional forces may have to be taken.

RapidStrut® Fixing Rail

Suspension on 1 point



L (mm)	BIS RapidStrut® single									DS5	BIS RapidStrut® double			
	WMO (27x18)	41x21 (1,5)	41x21 (2,0)	41x21 (2,5)	41x41 (1,5)	41x41 (2,0)	41x41 (2,5)	41x62 (2,5)	41x82 (2,5)		41x51 (2,0)	41x21D (2,5)	41x41D (2,5)	41x62D (2,5)
100	474	1,155	1386	1,488	3,392	4,098	4,757	9,206	14,397	5,507	4,426	14,253	20,429	26,269
150	316	770	924	992	2,261	2,732	3,171	6,138	9,598	3,671	2,950	9,502	13,619	17,513
200	204	557	668	719	1,696	2,049	2,378	4,603	7,198	2,754	2,213	7,126	10,214	13,134
250	130	356	427	460	1,357	1,539	1,903	3,683	5,759	2,203	1,770	5,701	8,172	10,508
300	91	247	296	320	1,131	1,366	1,586	3,069	4,799	1,836	1,475	4,751	6,810	8,756
350	67	182	218	235	969	1,171	1,359	2,630	4,113	1,573	1,264	4,072	5,837	7,505
400	51	139	167	180	794	952	1,114	2,302	3,599	1,377	1,015	3,563	5,107	6,567
450	40	110	132	142	628	752	881	2,046	3,199	1,224	802	3,167	4,540	5,838
500	37	89	107	115	508	609	713	1,841	2,879	1,004	650	2,851	4,086	5,254
550	27	74	89	95	420	504	589	1,674	2,618	830	537	2,591	3,714	4,776
600	23	62	74	80	353	423	495	1,427	2,399	697	451	2,375	3,405	4,378
700	17	45	54	59	259	311	364	1,048	2,057	512	331	2,036	2,918	3,753
800	13	35	42	45	199	238	279	803	1,661	392	254	1,638	2,554	3,284
900	10	27	32	36	157	188	220	634	1,313	310	200	1,295	2,270	2,919
1,000	-	22	26	29	127	152	178	514	1,063	251	162	1,049	2,043	2,627
1,100	-	18	22	24	105	126	147	425	879	208	134	867	1,857	2,388
1,200	-	15	18	20	88	106	124	357	738	174	113	728	1,702	2,189
1,300	-	13	16	17	75	90	106	304	629	149	96	620	1,571	2,021
1,400	-	11	13	15	65	78	91	262	542	128	83	535	1,459	1,876
1,500	-	-	8	13	56	68	79	228	473	112	72	466	1,362	1,751

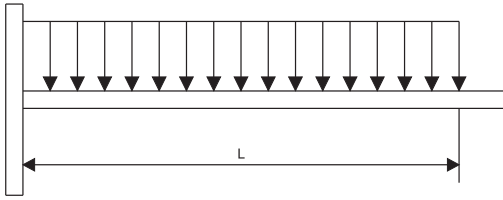
Max. allowed load in N.

The stated values are only valid for the fixing rail.

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

RapidStrut® Fixing Rail

Uniformly distributed load



L (mm)	BIS RapidStrut® single									DS5	BIS RapidStrut® double			
	WM0 (27x18)	41x21 (1,5)	41x21 (2,0)	41x21 (2,5)	41x41 (1,5)	41x41 (2,0)	41x41 (2,5)	41x62 (2,5)	41x82 (2,5)		41x51 (2,0)	41x21D (2,5)	41x41D (2,5)	41x62D (2,5)
100	947	2,310	2,772	2,976	6,784	8,195	9,514	18,413	28,794	11,014	8,851	28,506	40,858	52,538
150	631	1,540	1,848	1,984	4,523	5,463	6,342	12,275	19,196	7,343	5,901	19,004	27,238	35,025
200	348	1,155	1,386	1,488	3,392	4,098	4,757	9,206	14,397	5,507	4,426	14,253	20,429	26,269
250	242	924	1,109	1,190	2,714	3,278	3,805	7,365	11,517	4,406	3,540	11,402	16,343	21,015
300	177	660	792	853	2,261	2,732	3,171	6,138	9,598	3,671	2,950	9,502	13,619	17,513
350	136	485	582	626	1,938	2,341	2,718	5,261	8,227	3,147	2,529	8,144	11,674	15,011
400	107	371	445	480	1,696	2,049	2,378	4,603	7,198	2,754	2,213	7,126	10,214	13,134
450	87	293	352	379	1,508	1,821	2,114	4,092	6,399	2,448	1,967	6,335	9,079	11,675
500	72	238	286	307	1,356	1,625	1,902	3,683	5,759	2,203	1,732	5,701	8,172	10,508
550	60	196	235	254	1,121	1,343	1,572	3,348	5,235	2,003	1,432	5,183	7,429	9,552
600	44	165	198	213	942	1,128	1,321	3,069	4,799	1,836	1,203	4,751	6,810	8,756
700	34	121	145	157	692	829	970	2,630	4,113	1,367	884	4,072	5,837	7,505
800	27	93	112	120	530	635	743	2,140	3,599	1,046	677	3,563	5,107	6,567
900	22	73	88	95	418	501	587	1,691	3,199	827	535	3,167	4,540	5,838
1,000	18	59	71	77	339	406	476	1,370	2,835	670	433	2,796	4,086	5,254
1,100	15	49	59	63	280	336	393	1,132	2,343	553	358	2,311	3,714	4,776
1,200	13	41	49	53	235	282	330	951	1,969	465	301	1,942	3,405	4,378
1,300	11	35	42	45	201	240	281	811	1,678	396	256	1,655	3,143	4,041
1,400	-	30	36	39	173	207	243	699	1,447	342	221	1,427	2,918	3,753
1,500	-	26	31	34	151	181	211	609	1,260	298	192	1,243	2,724	3,503

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.