

MPT-Support profile Q50

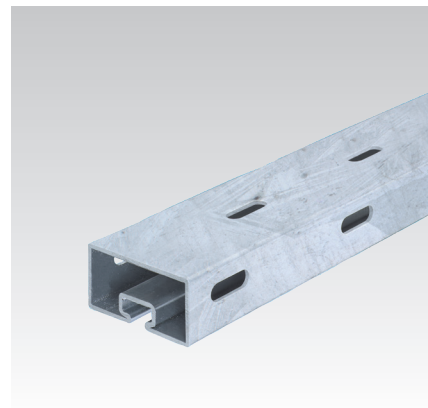
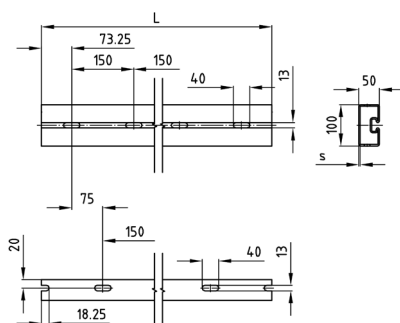
hot-dip galvanised

Application

- Rectangular profile for fast and efficient connection of MPT support structures on floor, wall and ceiling

Your advantages

- High corrosion protection due to standardised hot-dip galvanising ensures flexible implementation outdoors and indoors
- Saves time and costs during installation with the functional accessories matched to the support profile
- Assurance of uniform product quality due to imprinted manufacturing code
- Single-side continuous fastening groove for flexible arrangement of accessories and support parts
- Clean-cut appearance by the use of MPT-protection caps

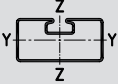


Profile	Length L [mm]	Thickness s [mm]	Weight [kg]	Part no.	Sales unit	Pack unit
Q50-2.5	6,000	2.5	41.7	131624	1	Pieces

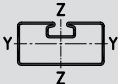
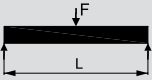
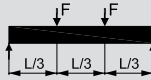
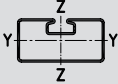
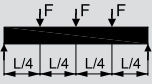
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hot-dip galvanised

Technical data of profile:

Features										
Profile	Material	Surface	Admissible steel stress $\sigma_{adm.}$ [N/mm ²]	Available hammer head bolts	Profile weight [kg/m]	Profile cross-section [cm ²]	Moment of inertia		Resistance moment	
							I_y [cm ⁴]	I_z [cm ⁴]	W_y [cm ³]	W_z [cm ³]
Q50-2.5	S235	hot-dip galvanised	158	M10, M12	6.95	8.4	32.3	94.1	12.1	18.8

Max. load capacities of profile [N]:

Profile	Bending into direction	L [m]						L [m]					
		0.5	1.0	1.5	2.0	4.0	6.0	0.5	1.0	1.5	2.0	4.0	6.0
													
Q50-2.5	ZZ	13,664	7,392	4,983	3,731	847	197	9,147	5,353	3,675	2,338	497	115
													
Q50-2.5	ZZ	6,106	3,565	2,450	1,678	357	83	4,884	2,929	2,027	1,318	280	65

-  The determined loads apply for static loads. Calculation based on Eurocode (EC3).
 The safety coefficient $\gamma = 1.48$ takes into account the partial and combination coefficients as well as the safety factor of the material.
 For the given values, the permissible steel stress and the maximum permissible deflection $L/200$ are not exceeded, taking the deadweight into consideration.

MPT-Support profiles

Buckling loads

Permissible buckling loads for profiles [N]:

Buckling length Lk [mm]	Q50-2.5 hot-dip galvanised	Q80-2.0 hot-dip galvanised	Q100-2.5 hot-dip galvanised	Q100-3.5 hot-dip galvanised	Q100-2.5 sendzimir galvanised	Q100-3.5 sendzimir galvanised	Q100-2.5 3-slots hot-dip galvanised	Q100-2.5 3-slots sendzimir galvanised	Q100-2.5 4-slots hot-dip galvanised	Q150-2.5 3-slots hot-dip galvanised
200	128,182	126,656	195,325	209,821	207,792	280,844	236,373	180,681	263,994	247,208
400	127,400	126,656	195,325	209,821	207,792	280,844	236,373	180,681	263,994	247,208
600	122,358	124,732	195,325	209,821	207,792	280,844	236,373	180,681	263,994	247,208
800	116,925	121,003	192,269	206,737	203,728	275,861	232,980	179,146	260,028	244,946
1,000	110,833	117,063	187,954	202,159	198,904	269,488	227,846	175,517	254,244	239,937
1,200	103,867	112,799	183,477	197,414	193,870	262,856	222,528	171,787	248,247	234,784
1,400	95,963	108,111	178,763	192,425	188,538	255,850	216,938	167,900	241,938	229,409
1,600	87,313	102,923	173,738	187,116	182,821	248,358	210,993	163,804	235,220	223,739
1,800	78,371	97,214	168,338	181,417	176,644	240,284	204,614	159,447	228,007	217,702
2,000	69,681	91,042	162,510	175,273	169,952	231,551	197,740	154,786	220,227	211,238
2,200	61,661	84,554	156,224	168,650	162,726	222,125	190,332	149,786	211,839	204,298
2,400	54,519	77,964	149,485	161,547	154,996	212,028	182,387	144,427	202,845	196,861
2,600	48,291	71,499	142,342	154,010	146,848	201,356	173,953	138,716	193,304	188,935
2,800	42,918	65,344	134,888	146,130	138,425	190,273	165,128	132,685	183,335	180,572
3,000	38,301	59,625	127,255	138,039	129,904	178,996	156,059	126,398	173,109	171,866
3,200	34,333	54,399	119,596	129,894	121,470	167,762	146,918	119,946	162,824	162,948
3,400	30,915	49,677	112,059	121,851	113,286	156,790	137,881	113,435	152,681	153,968
3,600	27,959	45,440	104,771	114,047	105,478	146,258	129,102	106,975	142,852	145,079
3,800	25,393	41,652	97,827	106,589	98,130	136,291	120,702	100,665	133,467	136,416
4,000	23,153	38,269	91,288	99,547	91,285	126,961	112,761	94,585	124,613	128,089
4,200	21,191	35,248	85,186	92,958	84,955	118,298	105,326	88,793	116,337	120,172
4,400	19,462	32,546	79,527	86,836	79,131	110,300	98,412	83,326	108,653	112,713
4,600	17,933	30,126	74,303	81,174	73,790	102,944	92,013	78,202	101,551	105,733
4,800	16,575	27,954	69,495	75,955	68,901	96,194	86,112	73,424	95,007	99,233
5,000	15,364	25,999	65,077	71,153	64,429	90,007	80,679	68,984	88,989	93,200
5,200	14,279	24,236	61,020	66,740	60,338	84,338	75,684	64,870	83,460	87,615
5,400	13,304	22,641	57,296	62,684	56,595	79,144	71,092	61,062	78,380	82,450
5,600	12,425	21,194	53,875	58,956	53,167	74,380	66,870	57,540	73,712	77,678
5,800	11,629	19,879	50,730	55,527	50,023	70,007	62,986	54,284	69,420	73,268
6,000	10,908	18,680	47,837	52,370	47,136	65,988	59,409	51,274	65,469	69,192
6,200	10,250	17,585	45,171	49,460	44,481	62,289	56,112	48,488	61,827	65,423
6,400	9,651	16,581	42,712	46,774	42,036	58,879	53,068	45,909	58,467	61,934
6,600	9,102	15,660	40,441	44,293	39,781	55,733	50,255	43,518	55,363	58,702
6,800	8,598	14,813	38,339	41,996	37,697	52,823	47,652	41,300	52,490	55,704
7,000	8,136	14,032	36,392	39,868	35,768	50,129	45,239	39,240	49,828	52,920
7,200	7,709	13,311	34,586	37,893	33,980	47,631	42,999	37,324	47,358	50,332
7,400	7,315	12,643	32,907	36,057	32,319	45,311	40,917	35,540	45,062	47,922
7,600	6,950	12,024	31,345	34,348	30,776	43,153	38,980	33,877	42,926	45,676
7,800	6,612	11,449	29,890	32,756	29,338	41,142	37,173	32,324	40,934	43,580
8,000	6,298	10,914	28,531	31,269	27,997	39,267	35,487	30,874	39,076	41,622
8,200	6,006	10,416	27,262	29,880	26,745	37,515	33,911	29,516	37,338	39,789
8,400	5,733	9,951	26,074	28,579	25,574	35,875	32,436	28,244	35,713	38,073
8,600	5,479	9,516	24,961	27,361	24,477	34,340	31,054	27,051	34,190	36,463
8,800	5,241	9,108	23,917	26,218	23,449	32,900	29,757	25,931	32,761	34,951
9,000	5,018	8,727	22,936	25,144	22,483	31,548	28,538	24,877	31,418	33,530
9,200	4,810	8,368	22,014	24,134	21,575	30,276	27,393	23,886	30,156	32,193
9,400	4,613	8,032	21,145	23,183	20,721	29,080	26,314	22,952	28,967	30,933
9,600	4,429	7,715	20,327	22,286	19,916	27,952	25,296	22,071	27,846	29,744
9,800	4,256	7,416	19,555	21,441	19,157	26,888	24,337	21,239	26,789	28,622
10,000	4,092	7,135	18,825	20,642	18,440	25,883	23,430	20,453	25,791	27,562
10,200	3,938	6,869	18,136	19,886	17,762	24,933	22,573	19,709	24,846	26,559
10,400	3,792	6,617	17,483	19,171	17,121	24,034	21,761	19,005	23,953	25,609
10,600	3,654	6,380	16,865	18,494	16,513	23,183	20,993	18,337	23,106	24,709
10,800	3,524	6,154	16,278	17,851	15,938	22,376	20,264	17,704	22,303	23,855
11,000	3,400	5,941	15,722	17,241	15,391	21,610	19,572	17,102	21,541	23,044
11,200	3,283	5,738	15,194	16,662	14,873	20,882	18,914	16,531	20,818	22,274
11,400	3,172	5,546	14,691	16,112	14,380	20,191	18,290	15,988	20,129	21,541
11,600	3,066	5,363	14,213	15,588	13,910	19,533	17,695	15,470	19,475	20,844
11,800	2,966	5,189	13,758	15,089	13,464	18,906	17,129	14,978	18,851	20,180
12,000	2,870	5,023	13,324	14,614	13,038	18,310	16,589	14,508	18,257	19,547



MPT-Support profiles

Buckling loads



Buckling loads as per DIN EN 1993-1-1 sections 6.2 and 6.3.

The values in the table apply for fully bearing cross-sections and central load transmission!

The potentially lower slenderness parameter for buckling and lateral torsional buckling must be examined separately!

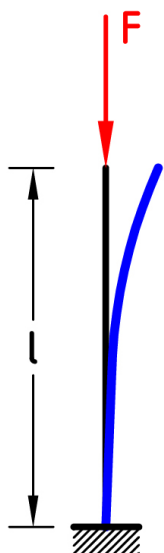
Buckling about the z-axis and the y-axis was considered.

The least favourable buckling load is documented in the table.

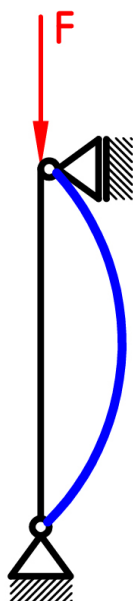
The safety coefficient $\gamma = 1.54$ takes into account the safety and combination coefficients as well as the safety factor of the material.

Determine the authoritative buckling length L_k depending on the storage conditions and the rod length l , as shown in the figure.

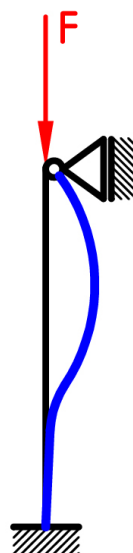
Read off the buckling load F as L_k from the table.



$$L_k = 2,0 \times l$$



$$L_k = 1,0 \times l$$



$$L_k = 0,7 \times l$$



$$L_k = 0,5 \times l$$