

MPR-Support channels

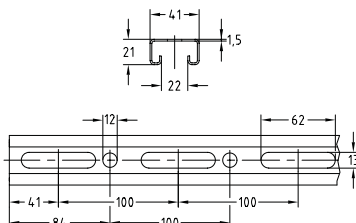
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Field of application

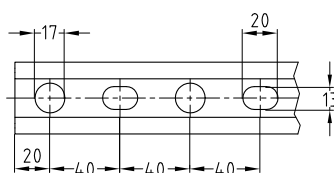
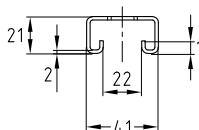
- Ideal for pipe installation as support structure for air ducts in dry interiors
- Variety of mounting options for pre-wall installations and shelves in combination with extensive range of system components

Advantages

- Quick and efficient attachment of pipe sections and multiple pipe-ways
- High bending stiffness due to the cross-section design
- Scale marks sideways and on the side with the slot simplify the alignment of the attachment elements during installation and facilitate the measuring and cutting to length of the section on site
- For secure fixing that is adjustable laterally and vertically
- For setting up structures with correctly measured static loads by means of diverse connection components
- Interlocking rail slot for positive locking of attachments
- Oblong hole for the flexible attachment of add-on parts
- Round hole for approval-compliant attachment with anchors
- Clean-cut appearance by the use of MPR-protection caps



Profile 41/21/1.5



Profile 41/21/2.0

Features



continued

Profile	Length [mm]	Part no.	Sales unit	Pack unit
41/21/1.5	3,000	175787	1	pieces
	6,000	175788		
41/21/2.0	2,000	150930	8	
	3,040	150931	1	
	6,000	150932		



Profile 41/21/1.5 with a length of 6,000 mm (part no. 175788) is manufactured to order. Price, quantity and delivery time available upon request.

For use in areas with requirements on the duration of fire resistance, the boundary conditions set out in the fire test report must be observed.

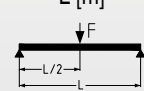
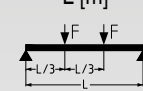
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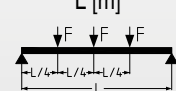
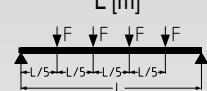
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Technical data of profiles:

Profile 	Material	Surface	Admissible steel stress	Available threaded plates	Profile weight	Profile cross- section	Moment of inertia		Resistance moment	
σ_{adm} . [N/mm ²]			[kg/m]		[cm ²]	I _y [cm ⁴]	I _z [cm ⁴]	W _y [cm ³]	W _z [cm ³]	
41/21/1.5	S250GD+Z	sendzimir galvanised	162	M6, M8, M10, M12, M16	1.08	1.30	0.7670	3.5210	0.695	1.718
41/21/2.0	S250GD				1.45	1.62	0.8894	4.5246	0.839	2.207
41/41/2.0			2.08		2.42	4.9736	7.5692	2.451	3.692	
41/41/2.5			2.53		3.08	5.8103	9.0333	2.839	4.406	
41/62/2.5			3.38		3.98	17.2090	12.9297	5.671	6.307	
41/42/2.0 H-Profile			2.90		3.24	5.2844	9.0492	2.516	4.414	
41/82/2.0 H-Profile			4.16		4.83	30.6876	15.1385	7.485	7.385	
41/124/2.5 H-Profile			6.76		7.96	111.7528	25.8595	18.025	12.614	

Load bearing capacities of profiles for bending around the y-axis [N]:

Profile	 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
41/21/1.5	895	379	161	83	–	–	667	223	95	48	–	–
41/21/2.0	1,090	440	190	90	–	–	800	260	110	60	–	–
41/41/2.0	3,681	1,833	1,095	601	106	–	2,755	1,376	643	353	62	–
41/41/2.5	4,262	2,122	1,278	701	121	–	3,190	1,593	750	411	71	–
41/62/2.5	8,521	4,248	2,818	2,099	459	117	6,378	3,189	2,114	1,248	270	68
41/42/2.0 H-Profile	3,080	1,878	1,157	630	95	–	1,540	1,410	679	370	56	–
41/82/2.0 H-Profile	6,563	5,608	3,722	2,774	865	277	3,281	3,281	2,791	2,079	508	162
41/124/2.5 H-Profile	13,646	13,522	8,987	6,711	3,256	1,316	6,823	6,823	6,740	5,031	1,969	772

Profile	 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
41/21/1.5	445	159	68	35	–	–	370	125	53	27	–	–
41/21/2.0	540	180	80	40	–	–	450	150	60	30	–	–
41/41/2.0	1,841	916	461	253	44	–	1,534	764	362	199	35	–
41/41/2.5	2,131	1,061	538	295	51	–	1,776	884	423	232	40	–
41/62/2.5	4,260	2,124	1,409	896	193	49	3,550	1,770	1,174	703	152	39
41/42/2.0 H-Profile	1,027	939	487	265	40	–	770	770	383	208	32	–
41/82/2.0 H-Profile	2,188	2,188	1,861	1,387	364	116	1,641	1,641	1,551	1,156	286	91
41/124/2.5 H-Profile	4,549	4,549	4,493	3,356	1,412	554	3,411	3,411	3,411	2,796	1,109	435



The determined loads apply for static loads. Calculation based on Eurocode (EC3).

The safety coefficient $\gamma = 1.54$ takes into account the safety 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.

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Permissible buckling loads for profiles [N]:

Buckling length Lk [mm]	MPR 41/21/1.5	MPR 41/21/2.0	MPR 41/41/2.0	MPR 41/41/2.5	MPR 41/62/2.5	MPR 41/42/2.0	MPR 41/82/2.0	MPR 41/124/2.5
200	20,424	29,182	45,557	56,946	75,004	60,984	91,020	150,007
300	19,270	27,244	44,788	55,811	75,004	59,289	91,010	150,007
400	17,934	24,922	43,416	54,027	73,330	57,182	89,656	147,921
500	16,341	22,127	41,962	52,126	71,527	54,901	88,232	145,627
600	14,508	19,030	40,383	50,048	69,639	52,369	86,698	143,164
700	12,578	16,008	38,641	47,743	67,631	49,527	85,009	140,464
800	10,746	13,362	36,711	45,181	65,469	46,359	83,114	137,446
900	9,139	11,181	34,586	42,366	63,124	42,910	80,954	134,020
1,000	7,792	9,427	32,296	39,350	60,579	39,301	78,468	130,091
1,100	6,683	8,024	29,902	36,233	57,831	35,692	75,599	125,569
1,200	5,774	6,896	27,489	33,134	54,898	32,234	72,317	120,394
1,300	5,029	5,981	25,140	30,161	51,823	29,033	68,635	114,570
1,400	4,412	5,232	22,922	27,392	48,668	26,139	64,626	108,190
1,500	3,899	4,613	20,875	24,864	45,505	23,563	60,419	101,439
1,600	3,468	4,095	19,015	22,589	42,406	21,289	56,168	94,553
1,700	3,104	3,659	17,342	20,558	39,428	19,290	52,015	87,762
1,800	2,793	3,289	15,846	18,752	36,612	17,533	48,063	81,249
1,900	2,526	2,971	14,512	17,150	33,983	15,989	44,375	75,131
2,000	2,295	2,697	13,324	15,728	31,550	14,629	40,978	69,467
2,100	2,094	2,459	12,265	14,464	29,314	13,426	37,877	64,274
2,200	1,918	2,251	11,319	13,338	27,266	12,361	35,059	59,541
2,300	1,764	2,068	10,473	12,333	25,395	11,413	32,506	55,240
2,400	1,627	1,907	9,715	11,433	23,688	10,568	30,194	51,340
2,500	1,505	1,764	9,033	10,625	22,131	9,811	28,101	47,802
2,600	1,397	1,636	8,418	9,898	20,711	9,130	26,204	44,592
2,700	1,300	1,521	7,862	9,240	19,413	8,517	24,483	41,676
2,800	1,212	1,419	7,358	8,645	18,227	7,963	22,918	39,022
2,900	1,133	1,326	6,900	8,105	17,141	7,461	21,492	36,604
3,000	1,062	1,242	6,483	7,613	16,144	7,004	20,192	34,395
3,100	997	1,166	6,102	7,164	15,229	6,587	19,002	32,374
3,200	938	1,096	5,753	6,753	14,387	6,206	17,912	30,522
3,300	884	1,033	5,433	6,376	13,611	5,857	16,911	28,820
3,400	834	975	5,138	6,029	12,894	5,536	15,990	27,254
3,500	789	921	4,867	5,710	12,231	5,241	15,141	25,810
3,600	747	872	4,616	5,415	11,617	4,969	14,357	24,475
3,700	708	827	4,385	5,142	11,047	4,717	13,631	23,241
3,800	672	785	4,170	4,889	10,517	4,484	12,959	22,096
3,900	639	747	3,970	4,655	10,024	4,268	12,334	21,032
4,000	609	711	3,784	4,436	9,565	4,067	11,753	20,043
4,100	580	677	3,611	4,233	9,136	3,879	11,212	19,121
4,200	554	646	3,450	4,043	8,734	3,705	10,707	18,261
4,300	529	617	3,299	3,866	8,359	3,542	10,235	17,457
4,400	506	590	3,157	3,700	8,006	3,389	9,794	16,705
4,500	484	565	3,025	3,544	7,676	3,246	9,380	16,000
4,600	464	541	2,900	3,398	7,365	3,112	8,992	15,338
4,700	444	519	2,784	3,261	7,073	2,986	8,627	14,717
4,800	427	498	2,674	3,132	6,797	2,867	8,284	14,132
4,900	410	478	2,570	3,011	6,538	2,755	7,961	13,581
5,000	394	459	2,472	2,896	6,293	2,650	7,656	13,062
5,100	379	442	2,380	2,788	6,061	2,551	7,368	12,571
5,200	365	425	2,293	2,686	5,842	2,457	7,097	12,108
5,300	351	410	2,211	2,589	5,634	2,368	6,840	11,670
5,400	339	395	2,132	2,497	5,437	2,284	6,596	11,255
5,500	327	381	2,058	2,410	5,250	2,204	6,366	10,862
5,600	315	368	1,988	2,328	5,073	2,129	6,147	10,489
5,700	305	355	1,921	2,250	4,905	2,057	5,939	10,135
5,800	294	343	1,858	2,175	4,744	1,989	5,742	9,798
5,900	285	332	1,798	2,105	4,592	1,924	5,554	9,478
6,000	275	321	1,740	2,037	4,446	1,862	5,375	9,173



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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!

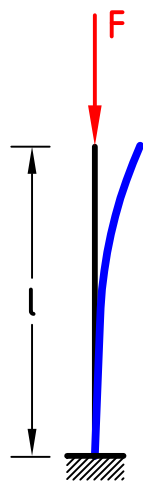
Buckling about the z-axis and the y-axis was considered.

The least favourable buckling load is documented in the table.

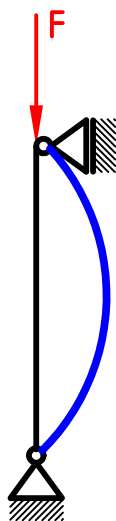
The safety coefficient $\gamma = 1.54$ takes into account the safety and combination coefficients as well as the safety factor of the material.

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

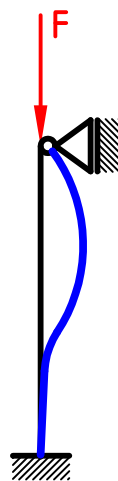
Read off the buckling load F as L_k from the table.



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



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



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



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