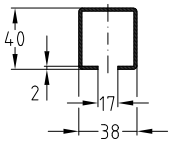
MPC-Support channels

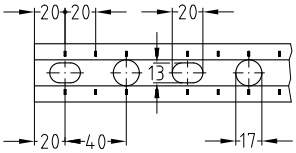
Field of application

- Ideally suitable as support structure for air ducts
- Variety of mounting options for pre-wall installations and shelves in combination with extensive range of system components

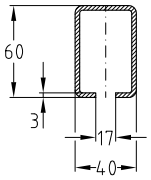
Advantages

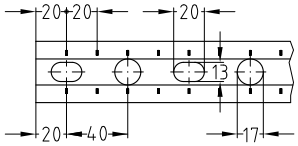
- Quick and efficient attachment of pipe sections and multiple pipe-ways
- Scale marks sideways and on the side with the slot simplify the alignment of the attachment elements during installation and facilitate the measuring and cutting to length of the section on site
- For secure attachment that is adjustable laterally and vertically
- High bending stiffness due to convenient cross-section design
- For setting up structures with correctly measured static loads by means of diverse connection components
- Suitable vibration control elements for all support channels available
- Clean-cut appearance by the use of MPC-Protection caps





Profile 38/40





Profile 40/60

Features

Profile	Length [mm]	Part no. V2A	Part no. V4A	Sales unit	Pack unit
38/40	2,000	**129914**	**129915**	1	pieces
	4,000	**129962**	**129963**		
	6,000	**130006**	**130007**		
40/60		**130017**	**130018**		

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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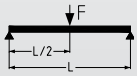
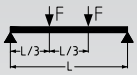
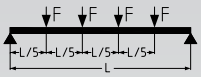
MPC-Support channels

Technical data of profiles:

Profile 	Material	Admissible steel stress $\sigma_{adm.}$ [N/mm²]	Available MPC-Rail nuts	Profile weight [kg/m]	Profile cross-section [cm²]	Moment of inertia I_y [cm⁴]	Moment of inertia I_z [cm⁴]	Resistance moment W_y [cm³]	Resistance moment W_z [cm³]
27/18	V2A, V4A	149	M8, M10	0.60	0.69	0.2911	0.9554	0.310	0.707
28/30				1.15	1.36	1.3999	2.0551	0.911	1.467
38/40			M8, M10, M12	1.82	2.21	4.3286	6.1000	2.164	3.210
40/60				3.50	4.44	17.5426	13.3946	5.847	6.697

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
27/18	368	136	57	28	–	–	274	80	33	16	–	–
28/30	1,076	537	288	154	–	–	797	390	169	90	–	–
38/40	2,553	1,280	847	497	85	–	1,886	958	532	292	50	–
40/60	6,870	3,462	2,299	1,710	440	105	5,047	2,586	1,720	1,210	259	62

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
27/18	183	57	24	12	–	–	152	45	19	–	–	–
28/30	532	277	121	65	–	–	441	220	95	51	–	–
38/40	1,260	638	382	209	36	–	1,044	531	300	164	28	–
40/60	3,371	1,722	1,147	854	185	44	2,788	1,433	956	682	146	35

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

The safety coefficient $\gamma = 1.54$ 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.

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MPC-Support channels

Permissible buckling loads for profiles [N]:

Buckling length Lk [mm]	MPC 27/18	MPC 28/30	MPC 38/40	MPC 40/60
200	9,873	20,236	33,026	66,308
300	9,172	19,455	32,658	66,308
400	8,320	18,616	31,736	65,162
500	7,297	17,680	30,770	63,666
600	6,191	16,613	29,733	62,110
700	5,148	15,402	28,602	60,468
800	4,262	14,071	27,356	58,713
900	3,548	12,683	25,988	56,823
1,000	2,981	11,319	24,500	54,780
1,100	2,531	10,047	22,920	52,575
1,200	2,171	8,904	21,287	50,212
1,300	1,881	7,901	19,655	47,713
1,400	1,644	7,031	18,071	45,115
1,500	1,448	6,282	16,574	42,467
1,600	1,285	5,635	15,185	39,826
1,700	1,147	5,078	13,915	37,242
1,800	1,031	4,595	12,764	34,757
1,900	931	4,175	11,727	32,403
2,000	845	3,808	10,795	30,196
2,100	770	3,486	9,958	28,144
2,200	705	3,203	9,207	26,249
2,300	647	2,952	8,532	24,504
2,400	597	2,729	7,925	22,901
2,500	552	2,530	7,377	21,432
2,600	512	2,351	6,881	20,085
2,700	476	2,191	6,432	18,850
2,800	444	2,047	6,024	17,718
2,900	415	1,916	5,653	16,678
3,000	388	1,797	5,315	15,721
3,100	364	1,689	5,005	14,841
3,200	343	1,590	4,721	14,030
3,300	323	1,500	4,460	13,281
3,400	305	1,417	4,220	12,588
3,500	288	1,341	3,999	11,947
3,600	273	1,271	3,794	11,352
3,700	258	1,206	3,605	10,799
3,800	245	1,146	3,429	10,285
3,900	233	1,090	3,266	9,807
4,000	222	1,038	3,113	9,360
4,100	212	990	2,972	8,942
4,200	202	945	2,839	8,552
4,300	193	903	2,716	8,186
4,400	184	864	2,600	7,843
4,500	176	827	2,491	7,521
4,600	169	793	2,389	7,218
4,700	162	761	2,293	6,933
4,800	155	730	2,203	6,664
4,900	149	702	2,118	6,410
5,000	143	675	2,038	6,171
5,100	138	649	1,962	5,945
5,200	133	625	1,890	5,730
5,300	128	603	1,823	5,527
5,400	123	581	1,758	5,335
5,500	119	561	1,698	5,152
5,600	115	542	1,640	4,979
5,700	111	523	1,585	4,814
5,800	107	506	1,533	4,657
5,900	104	489	1,483	4,508
6,000	100	473	1,436	4,366

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MPC-Support channels

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 γ = 1.54 takes into account the safety and combination coefficients as well as the safety factor of the material.

Determine the authoritative buckling length Lk depending on the storage conditions and the rod length l, as shown in the figure.
Read off the buckling load F as Lk from the table.