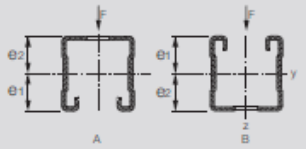
Technical data for channel profile MQ (zinced)

Definition of axes



			New MQ-21.5	MQ-41-L	New MQ-41	MQ-41/3 MQ-41/3LL	MQ-52	MQ-72	MQ-21 D	MQ-41 D	MQ-41D-L	MQ-52-72 D	MQ-124X D
Channel wall thickness	t	[mm]	1.5	1,5	2,0	3,0	2,5	2,75	2,0	2,0	1.5	2,5/2,75	3,0
Cross-sectional area	A	[mm²]	142.71	199,57	263.62	375.88	378.74	527.55	372.33	545.97	412.57	916.19	1253.16
Channel weight		[kg/m]	1,135	1,60	2,08	2,91	2,94	4,10	2,90	4,19	3.20	7,08	9,84
Delivered length		[m]	2/3/6	3/6	2/3/6	3/6	6	6	3/6	3/6	3/6	6	6
Material													
S 250 GD (DIN EN 10346)			•	•	•	•	•	•	•	•	•	•	•
Permissible stress	δ_{perm}	[N/mm²]	207.8	188.3	188.3	188.3	188.3	188.3	188.3	188.3	188.3	188.3	162.3
E-Modul		[N/mm²]	210000	210000	210000	210000	210000	210000	210000	210000	210000	210000	210000
Surface													
sendzimir galvanised (DIN EN ISO 1401)			•	•	•	•	•	•	•	•	•	•	•
Cross-section Y-axis													
Axis of gravity A [1]	e_1	[mm]	11.65	21.44	21.50	22.07	27.27	37.42	20.60	41.30	41.30	62.32	62.00
Axis of gravity B	e_2	[mm]	9.85	19.86	19.80	19.23	24.73	34.58	20.60	41.30	41.30	61.68	62.00
Moment of inertia	I_y	[cm⁴]	0.92	4.48	5.88	7.70	12.42	30.99	5.26	32.36	25.57	121.06	190.88
Permtion modulus A	W_{y1}	[cm³]	0.79	2.09	2.67	3.49	4.55	8.28	2.55	7.83	6.19	19.42	30.79
Permtion modulus B	W_{y2}	[cm³]	0.93	2.25	2.91	4.00	5.02	8.96	2.55	7.83	6.19	19.63	30.79
Radius of gyration	i_y	[cm]	0.80	1.50	1.48	1.43	1.81	2.42	1.19	2.44	2.49	3.64	3.90
Permissible moment [2]	M_y	[Nm]	164	394	503	657	858	1560	480	1475	1166	3658	4999
z-axis													
Moment of inertia	I_z	[cm⁴]	3.74	5.90	7.64	10.79	11.17	15.89	9.25	15.41	12.12	27.08	32.07
Permtion modulus	W_z	[cm³]	1.81	2.86	3.70	5.23	5.41	7.70	4.48	7.46	5.87	13.11	15.53
Radius of gyration	i_z	[cm]	1.62	1.72	1.70	1.70	1.72	1.74	1.58	1.68	1.71	1.72	1.60

• The permissible stress $\sigma_D / \gamma_{G/Q}$ where y = 1,4. σ_D results from the higher yield strength (point) resulting from cold forming as per EN 1993-1-3: 2010: $\sigma_D = f_{yk} / \gamma_M$ where $\gamma_M = 1,1$.

1) For the arithmetical bending dimensioning is the smaller value (W_{y1}, W_{y2}) decisive to ($W_{y1} = I_{y/e1}$ bzw. $W_{y2} = I_{y/e2}$).

2) My = δ_{perm} x min. (W_{y1}, W_{y2})

Channel selection:

• The given data is based on a single span (simply-supported beam) bearing a single load, F(N), at mid span, L/2.

• If several loads are acting on a single span (simply-supported beam), these may be summated and regarded as a single load acting at mid span. By taking this approach, the design calculation is on the safe side. (→ Channel selection table).

• The permissible stress in the steel and the max. deflection, L/200, are not exceeded with the given max. span widths, L (mm).

• The channel's own weight has been considered.