

Technical data for channel profile MQ (zincd)

Definition of axes												
		MQ-21	MQ-41-L	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]	2,0	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 [mm ²]	182.12	199,57	267.75	375.88	378.74	527.55	372.33	545.97	412.57	916.19	1253.16
Channel weight	[kg/m]	1,44	1,60	2,08	2,91	2,94	4,10	2,90	4,19	3,20	7,08	9,84
Delivered length	[m]	3/6	3/6	3/6	3/6	6	6	3/6	3/6	3/6	6	6
Material												
S 250 GD (DIN EN 10346)		•	•	•	•	•	•	•	•	•	•	•
Permissible stress	σ _{perm} [N/mm ²]	188.3	188.3	188.3	188.3	188.3	188.3	188.3	188.3	188.3	188.3	162.3
E-Modul	[N/mm ²]	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]	11.13	21.44	21.69	22.07	27.27	37.42	20.60	41.30	41.30	62.32	62.00
Axis of gravity B	e ₂ [mm]	9.47	19.86	19.61	19.23	24.73	34.58	20.60	41.30	41.30	61.68	62.00
Moment of inertia	I _y [cm ⁴]	0.99	4.48	5.88	7.70	12.42	30.99	5.26	32.36	25.57	121.06	190.88
Permition modulus A	W _{y1} [cm ³]	0.89	2.09	2.71	3.49	4.55	8.28	2.55	7.83	6.19	19.42	30.79
Permition modulus B	W _{y2} [cm ³]	1.05	2.25	3.00	4.00	5.02	8.96	2.55	7.83	6.19	19.63	30.79
Radius of gyration	i _y [cm]	0.74	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]	168	394	511	657	858	1560	480	1475	1166	3658	4999
z-axis												
Moment of inertia	I _z [cm ⁴]	4.63	5.90	7.69	10.79	11.17	15.89	9.25	15.41	12.12	27.08	32.07
Permition modulus	W _z [cm ³]	2.24	2.86	3.72	5.23	5.41	7.70	4.48	7.46	5.87	13.11	15.53
Radius of gyration	i _z [cm]	1.59	1.72	1.69	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 $\gamma = 1,4$. 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 ($W_{y1} = I_{y1}/e_1$ bzw. $W_{y2} = I_{y2}/e_2$).

2) $M_y = \sigma_{perm} \times \min. (W_{y1}, W_{y2})$

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.