

Tube clamps

Material properties

| Mechanical Properties | | Polypropylene (PP) Density 0,906 g/cm ³ | Polyamide 6 (PA) Density 1,12–1,15 g/cm ³ | Aluminium Density 2,65 g/cm ³ |
|-----------------------------------|------------|---|---|---|
| Flexural Deflection | DIN 53 452 | 36 N/mm ² | 130 ... 200 N/mm ² | 70 N/mm ² |
| Impact Resistance | DIN 53 453 | no break | no break | |
| Compressive Strength | DIN 53 454 | 90 N/mm ² | 120 N/mm ² | HB 500 ... 600 N/mm ² |
| Modulus of Elasticity | DIN 53 452 | 1500 N/mm ² | 3000 N/mm ² | 70000 N/mm ² |
| Tensile Stress | DIN 53 454 | 27 N/mm ² | 170 N/mm ² | 180 N/mm ² |
| Thermal Properties | | | | |
| Continuous Temperature Resistance | | −30° C bis +90° | −40° C bis +140° | bis 400° |
| Coefficient of Thermal Expansion | | 0,22 W/[mk] | 0,3 W/[mk] | 126 W/[mk] |
| Thermal Conductivity | | 15 x 10 ⁻⁵ /° C | 5 x 10 ⁻⁵ /° C | 21 x 10 ⁻⁶ /° C |
| Electrical Properties | | | | |
| Specific Resistivity | DIN 53 482 | 10 ¹⁶ Ohm x cm | 10 ¹⁵ Ohm x cm | |
| Track Resistance | DIN 53 480 | step 5 C | KA 3 c | |
| Chemical Properties | | | | |
| Acids | | resistant | resistant | |
| Alkalis | | resistant | resistant | |
| Alcohols | | resistant | resistant | |
| Petrol | | limited resistant | resistant | |
| Mineral Oil | | limited resistant | resistant | |
| Other Oil | | resistant | resistant | |

The dimensional data can only be used as standard value. We reserve the right to make modifications in the interest of technical progress. If the data for your specific application is at the limits identified above, please contact us.

Recommended distances for installation of clamps*

| Tube o.d. in mm | Distances of clamps in m |
|--------------------|-----------------------------|
| 6 to 14 | 0,9 |
| 15 to 22 | 1,2 |
| 23 to 28 | 1,5 |
| 30 to 38,1 | 2 |
| 40 to 48,3 | 2,5 |
| 50 to 57 | 3 |
| 60 to 70 | 3,4 |
| 76,1 to 88,9 | 3,7 |
| 101,6 to 108 | 4 |
| 114,3 to 133 | 4,3 |
| 139,7 to 165,1 | 5 |
| 168,3 to 219,1 | 5,5 |

Max. bolt tightening Torque in Nm

| Series | | Polypropylene | Material Polyamide | Aluminium |
|----------|---------|---------------|-----------------------|-----------|
| Standard | M 6 | 8 | 10 | 12 |
| Twin | Gr. 1 | 5 | 6 | – |
| | Gr. 2-4 | 12 | 12 | – |
| | Gr. 5 | 8 | 8 | – |
| Heavy | Gr. 1 | 12 | 20 | 30 |
| | Gr. 2 | 12 | 20 | 30 |
| | Gr. 3 | 15 | 25 | 35 |
| | Gr. 4 | 30 | 40 | 55 |
| | Gr. 5 | 45 | 55 | 120 |
| | Gr. 6 | 90 | 180 | 280 |
| | Gr. 7 | 150 | 300 | 350 |
| | Gr. 8 | 250 | 500 | 700 |

* When an elbow or bend to be supported the clamps, should be positioned as close as possible on each side of the bend.