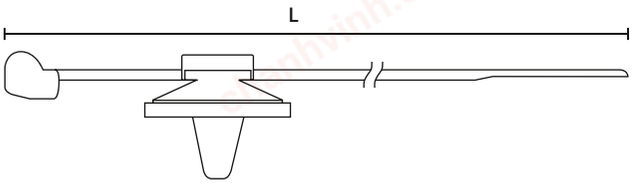
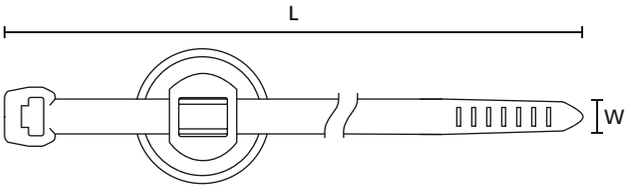
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## 2-Piece Fixing Ties with Arrowhead, with Disc




*T50ROSSFT6.5-16-2MOD-MD*




*T50ROSSFT6.5-16-2MOD-MD*



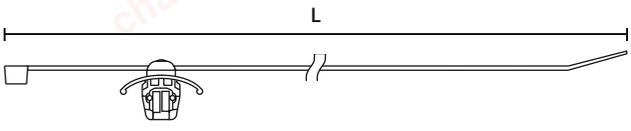
*The additional seal protects against the ingress of moisture.*

### 2-Piece Fixing Ties with Arrowhead, with Disc, for round holes, sealed

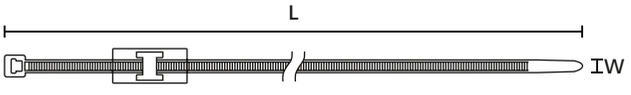
| TYPE | Width (W) | Length (L) | Bundle Ø max. | N | Disc Ø | Hole Ø (FH) | Panel Thickness | Material Cable Tie | Material Foot Part | Colour | Tools | Article-No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **T50ROSS FT6.5-D16-2 MD** | 4.6 | 200.0 | 45.0 | 222 | 22.4 | 6.4 - 6.6 | 0.7 - 2.0 | PA66HS | PA66HIRHS | Black (BK) | 2-10 | 150-93100 |
| **T50ROSS FT6.5-16-2-MD** | 4.6 | 200.0 | 45.0 | 225 | 16.0 | 6.3 - 6.7 | 0.7 - 1.2 | PA66HS | PA66HIRHS | Black (BK) | 2-10 | 155-42002 |
| **T50ROSS FT6.5 16-3MD** | 4.6 | 200.0 | 45.0 | 225 | 16.0 | 6.1 - 7.0 | 2.5 - 3.0 | PA66HS | PA66HIRHS | Black (BK) | 2-10 | 150-37799 |
| **T50RAHD6-MS-MD** | 4.6 | 202.0 | 50.0 | 225 | 18.0 | 6.5 - 7.0 | 0.7 - 1.2 | PA66HS | PA66HS | Natural (NA) | 2-10 | 156-01193 |

All dimensions in mm. Subject to technical changes.

### 2-Piece Fixing Ties with Arrowhead, with disc for oval holes




*T50RFT62x122*




*T50RFT62x122*



*T50RFT6OVAL for oval holes 6.3 x 12.2 mm.*

| TYPE | Width (W) | Length (L) | Bundle Ø max. | N | Hole Ø (FH) | Panel Thickness | Material Cable Tie | Material Foot Part | Colour | Tools | Article-No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **T50RFT62x122HR** | 4.6 | 202.0 | 45.0 | 225 | 6.3 x 12.2 | 0.6 - 3.0 | PA46 | PA46 | Grey (GY) | 2-10 | 156-00446 |
| **T50RFT6OVAL** | 4.6 | 202.0 | 45.0 | 355 | 6.3 x 12.2 | 0.6 - 3.0 | PA66HS | PA66HIRHS | Black (BK) | 2-10 | 150-37591 |

All dimensions in mm. Subject to technical changes.

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## Material Specification Overview

| MATERIAL | Material Shortcut | Operating Temperature | Colour** | Flammability | Material Properties* | Material Specifications |
|---|---|---|---|---|---|---|
| **Aluminium-alloy** | AL | -40 °C to +180 °C | Natural (NA) | | • Corrosion resistant<br>• Antimagnetic | RoHS |
| **Chloroprene** | CR | -20 °C to +80 °C | Black (BK) | | • Weather-resistant<br>• High yield strength | RoHS |
| **Ethylene Tetrafluoroethylene (Tefzel®)** | E/TFE | -80 °C to +170 °C | Blue (BU) | UL 94 V0 | • Resistance to radioactivity<br>• UV- resistant, not moisture sensitive<br>• Good chemical resistance to: acids, bases, oxidizing agents | RoHS |
| **Polyacetal** | POM | -40 °C to +90 °C, (+110 °C, 500 h) | Natural (NA) | UL 94 HB | • Limited brittleness sensitivity<br>• Flexible at low temperature<br>• Not moisture sensitive<br>• Robust on impacts | RoHS |
| **Polyamide 11** | PA11 | -40 °C to +85 °C, (+105 °C, 500 h) | Black (BK) | UL 94 HB | • Bio-plastic, derived from vegetable oil<br>• Strong impact resistance at low temperature<br>• Very low moisture absorption<br>• Weather-resistant<br>• Good chemical resistanc | HF<br>RoHS |
| **Polyamide 12** | PA12 | -40 °C to +85 °C, (+105 °C, 500 h) | Black (BK) | UL 94 HB | • Good chemical resistance to: acids, bases, oxidizing agents<br>• UV- resistant | HF<br>RoHS |
| **Polyamide 4.6** | PA46 | -40 °C to +150 °C (5000 h), +195 °C (500 h) | Natural (NA), Grey (GY) | UL 94 V2 | • Resistance to high temperatures<br>• Very moisture sensitive<br>• Low smoke sensitiv | HF<br>LFH<br>RoHS |
| **Polyamide 6** | PA6 | -40 °C to +80 °C | Black (BK) | UL 94 V2 | • High yield strength | RoHS |
| **Polyamide 6,** high impact modified | PA6HIR | -40 °C to +80 °C | Black (BK) | UL 94 HB | • Limited brittleness sensitivity<br>• Higher flexibility at low temperature | RoHS |
| **Polyamide 6.6** | PA66 | -40 °C to +85 °C, (+105 °C, 500 h) | Black (BK), Natural (NA) | UL 94 V2 | • High yield strength | HF<br>RoHS |
| **Polyamide 6.6,** glass-fibre reinforced | PA66GF13, PA66GF15 | -40 °C to +105 °C | Black (BK) | UL 94 HB | • Good resistance to: lubricants, vehicle fuel, salt water and a lot of solvent | HF<br>RoHS |
| **Polyamide 6.6,** heat and UV stabilised | PA66HSW | -40 °C to +105 °C | Black (BK) | UL 94 V2 | • High yield strength<br>• Modified elevated max. temperature<br>• UV-resistant | HF<br>RoHS |
| **Polyamide 6.6,** heat stabilised | PA66HS | -40 °C to +105 °C | Black (BK), Natural (NA) | UL 94 V2 | • High yield strength<br>• Modified elevated max. temperature | HF<br>RoHS |
| **Polyamide 6.6,** high impact modified | PA66HIR | -40 °C to +80 °C, (+105 °C, 500 h) | Black (BK) | UL 94 HB | • Limited brittleness sensitivity<br>• Higher flexibility at low temperature | RoHS |
| **Polyamide 6.6,** high impact modified, heat and UV stabilised | PA66HIRHSW | -40 °C to +110 °C | Black (BK) | UL 94 HB | • Limited brittleness sensitivity<br>• Higher flexibility at low temperature<br>• Modified elevated max. temperature<br>• High yield strength, UV-resistant | RoHS |
| **Polyamide 6.6,** high impact modified, heat stabilised | PA66HIRHS | -40 °C to +105 °C | Black (BK) | UL 94 HB | • Limited brittleness sensitivity<br>• Higher flexibility at low temperature<br>• Modified elevated max. temperature | RoHS |
| **Polyamide 6.6,** high impact modified, ScanBlack | PA66HIR(S) | -40 °C to +80 °C, (+105 °C, 500 h) | Black (BK) | UL 94 HB | • Limited brittleness sensitivity<br>• Higher flexibility at low temperature | RoHS |
| **Polyamide 6.6,** UV-resistant | PA66W | -40 °C to +85 °C, (+105 °C, 500 h) | Black (BK) | UL 94 V2 | • High yield strength<br>• UV-resistant | HF<br>RoHS |

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| MATERIAL | Material Shortcut | Operating Temperature | Colour** | Flammability | Material Properties* | Material Specifications |
|---|---|---|---|---|---|---|
| **Polyamide 6.6,** with metal particles | PA66MP | -40 °C to +85 °C, (+105 °C, 500 h) | Blue (BU) | UL 94 HB | • High yield strength<br>• Metal and X-Ray detectable | HF<br>RoHS |
| **Polyamide 6.6,** with metal particles | PA66MP+ | -40 °C to +85 °C | Blue (BU) | not flame retardant | • High yield strength<br>• Metal and x-ray detectable | HF<br>RoHS |
| **Polyamide 6.6 V0** | PA66V0 | -40 °C to +85 °C | White (WH) | UL 94 V0 | • High yield strength<br>• Low smoke emission | HF<br>LFH<br>RoHS |
| **Polyester** | SP | -50 °C to +150 °C | Black (BK) | halogen free | • UV-resistant<br>• Good chemical resistance to: most acids, alkaliks and oils | HF<br>LFH<br>RoHS |
| **Polyetheretherketone** | PEEK | -55 °C to +240 °C | Beige (BGE) | UL 94 V0 | • Resistance to radioactivity<br>• Not moisture sensitive<br>• Good chemical resistance to: acids, bases, oxidizing agents | HF<br>LFH<br>RoHS |
| **Polyethylene** | PE | -40 °C to +50 °C | Black (BK), Grey (GY) | UL 94 HB | • Low moisture absorption<br>• Good chemical oilsresistance to: most acids, alcohol and oils | HF<br>RoHS |
| **Polyolefin** | PO | -40 °C to +90 °C | Black (BK) | UL 94 V0 | • Low smoke emissions | HF<br>LFH<br>RoHS |
| **Polypropylene** | PP | -40 °C to +115 °C | Black (BK), Natural (NA) | UL 94 HB | • Floats in water<br>• Moderate yield strength<br>• Good chemical resistance to: organic acids | HF<br>RoHS |
| **Polypropylene, Ethylene-Propylene-Dien-Terpolymere-rubber** free of Nitrosamine | PP, EPDM | -20 °C to +95 °C | Black (BK) | UL 94 HB | • Good resistance to high temperatures<br>• Good chemical and abrasion resistance | HF<br>RoHS |
| **Polypropylene** with metal particles | PPMP | -40 °C to +115 °C | Blue (BU) | UL 94 HB | • Metal and X-Ray detectable<br>• Heat resistant<br>• Moderate yield strength<br>• Good chemical resistance | RoHS |
| **Polypropylene** with metal particles | PPMP+ | -40 °C to +85 °C | Blue (BU) | not flame retardant | • High yield strength<br>• Metal and x-ray detectable | HF<br>RoHS |
| **Polyvinylchloride** | PVC | -10 °C to +70 °C | Black (BK), Natural (NA) | UL 94 V0 | • Low moisture absorption<br>• Good chemical resistance to: acids, ethanol and oil | RoHS |
| **Stainless Steel** | SS304, SS316 | -80 °C to +538 °C | Natural (NA) | non-burning | • Corrosion resistant<br>• Antimagnetic<br>• Weather resistant<br>• Outstanding chemical resistance | HF<br>LFH<br>RoHS |
| **Thermoplastic Polyurethane** | TPU | -40 °C to +85 °C | Black (BK) | UL 94 HB | • High elastic<br>• Good chemical resistance to: acids, bases and oxidizing agents | HF<br>RoHS |

Tefzel® is a registered trademark of DuPont. General linguistic usage for cable ties made from raw material E/TFE is Tefzel®-Tie. In additon to Tefzel® from DuPont HellermannTyton is also using equivalent E/TFE raw material from other suppliers.
*These details are only rough guide values. They should not be regarded as a material specification and are no substitute for a suitability test. Please see our datasheets for further details.

**More colours on request.

N = **Minimum Loop Tensile Strength for Cable Ties (Newton)**

**HF = Halogenfree**
**LFH = Limited Fire Hazard**
**RoHS = Restriction of Hazardous Substances**

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