

### 1-Piece Fixing Ties with Fir Tree, with Disc

#### 1-Piece Fixing Ties with Fir Tree, with Disc

Primarily designed for fixing cable harnesses in the automotive industry, their simplicity and ease of use has resulted in these parts being used in other industries, for example aviation, switch gear and white goods manufacturing.

#### Features and Benefits

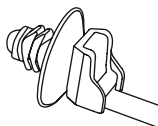
- Cable tie head always situated in defined position
- Easy to assemble without the need for a tool
- Disc adjusts tie for pressure from various directions and minimises access of dust, dirt and water
- Fir tree foot part can be used for a variety of panel thicknesses
- Suitable for use within threaded holes



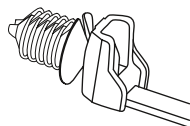
Fir tree foot parts can be used for a variety of panel thicknesses.



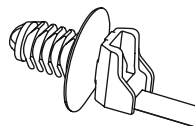
**Material specification please see page 24.**



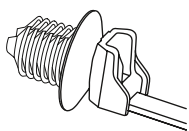
T50SOSFT6-E2



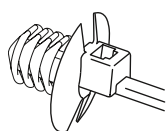
T50SOSFT6D10E



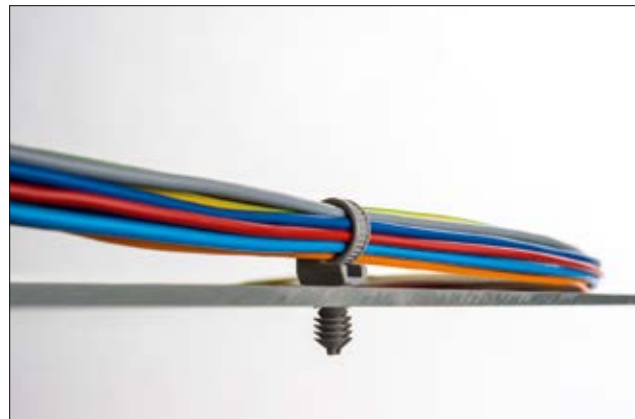
T50SOSFT6LGE



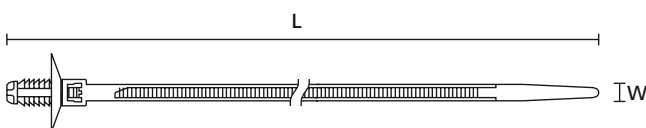
T50SOSFT8E



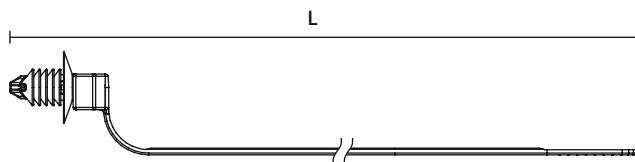
T18RDP5



T50SOSFT6D10E - One piece fixing tie with fir tree foot part.



One piece fixing tie with fir tree mount, standard design



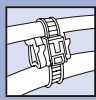
Special design without a gap between head and bundle; FT220DP7

| TYPE          | Width (W) | Length (L) | Bundle Ø max. | N   | Disc Ø | Hole Ø (FH) | Panel Thickness | Material | Colour     | Tools | Article-No. |
|---------------|-----------|------------|---------------|-----|--------|-------------|-----------------|----------|------------|-------|-------------|
| T18RDP5       | 2.5       | 110.0      | 20.0          | 80  | 13.0   | 4.9 - 5.1   | 3.0 - 4.0       | PA66     | Black (BK) | 2;4-6 | 150-55610   |
| T50SOSFT6-E2  | 4.6       | 160.0      | 35.0          | 180 | 16.0   | 6.3 - 7.0   | 0.6 - 4.2       | PA66HS   | Black (BK) | 2-10  | 157-00085   |
| T50SOSFT6D10E | 4.6       | 163.0      | 32.0          | 180 | 9.8    | 5.8 - 6.2   | 0.8 - 5.5       | PA46     | Grey (GY)  | 2-10  | 157-00028   |
| T50SOSFT8E    | 4.6       | 163.0      | 35.0          | 225 | 16.0   | 8.0 - 8.5   | 0.6 - 6.0       | PA46     | Grey (GY)  | 2-10  | 157-00115   |
|               | 4.6       | 163.0      | 35.0          | 225 | 16.0   | 8.0 - 8.5   | 0.6 - 6.0       | PA66HS   | Black (BK) | 2-10  | 157-00072   |
| T50SOSFT6LGE  | 4.6       | 165.0      | 35.0          | 180 | 16.0   | 6.3 - 7.0   | 0.7 - 7.0       | PA66HS   | Black (BK) | 2-10  | 157-00228   |

All dimensions in mm. Subject to technical changes.


| Recommended Tools |      |       |          |      |       |      |     |     |       |      |  |
|-------------------|------|-------|----------|------|-------|------|-----|-----|-------|------|--|
| 2                 | 3    | 4     | 5        | 6    | 7     | 8    | 9   | 10  | 11    | 12   |  |
| MK20              | MK21 | MK3SP | MK3PNSP2 | EVO7 | MK7HT | MK7P | MK6 | MK9 | MK9HT | MK9P |  |

For more information on toolings please refer to the Application Tooling chapter.



### 1-Piece Fixing Ties with Fir Tree, with Disc

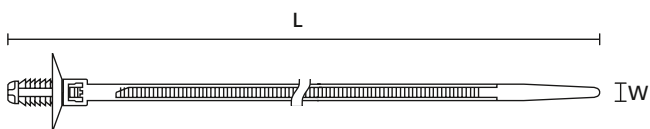
#### 1-Piece Fixing Ties with Fir Tree, with Disc

| TYPE            | Width (W) | Length (L) | Bundle Ø max. |  N | Disc Ø | Hole Ø (FH) | Panel Thickness | Material  | Colour     | Tools  | Article-No. |
|-----------------|-----------|------------|---------------|-------------------------------------------------------------------------------------|--------|-------------|-----------------|-----------|------------|--------|-------------|
| T50SOSFT6LG-E2  | 4.6       | 167.0      | 35.0          | 222                                                                                 | 16.0   | 6.1 - 6.9   | 0.6 - 8.3       | PA66HIRHS | Black (BK) | 2-10   | 157-00140   |
| T50SOSFT6E1     | 4.7       | 161.4      | 35.0          | 150                                                                                 | 16.0   | 6.3 - 7.0   | 0.7 - 3.0       | PA66HIRHS | Black (BK) | 2-10   | 157-00033   |
| FT220DP7        | 4.7       | 232.0      | 40.0          | 225                                                                                 | 16.0   | 6.8 - 7.2   | 0.8 - 5.0       | PA66      | Black (BK) | 2-12   | 150-01700   |
| T50SOSFT6LG-E4  | 4.9       | 165.0      | 31.0          | 200                                                                                 | 22.0   | 6.3 - 7.0   | 6.3 - 7.0       | PA66HS    | Black (BK) | 2-10   | 157-00237   |
| T50ROSFT8SO25A  | 5.1       | 230.0      | 50.0          | 220                                                                                 | 19.0   | 7.6 - 8.4   | 0.6 - 6.7       | PA46      | Brown (BN) | 2-10   | 157-00168   |
|                 | 5.1       | 230.0      | 50.0          | 222                                                                                 | 19.0   | 7.6 - 8.4   | 0.6 - 6.7       | PA66HIRHS | Grey (GY)  | 2-10   | 157-00120   |
| T50ROSFT612.5SO | 5.1       | 234.2      | 50.0          | 220                                                                                 | 16.6   | 6.1 - 6.9   | 0.6 - 6.0       | PA66HIRHS | Black (BK) | 2-10   | 157-00216   |
| OS170FT7LH      | 5.3       | 170.0      | 30.0          | 147                                                                                 | 16.0   | 6.8 - 7.2   | 0.7 - 4.5       | PA66      | Black (BK) | 3;9-12 | 157-00019   |
| OS160FT6HEX     | 5.3       | 170.0      | 30.0          | 200                                                                                 | 16.0   | 6.35        | 0.7 - 5.0       | PA66      | Black (BK) | 3;9-12 | 157-00080   |
|                 | 5.3       | 170.0      | 30.0          | 200                                                                                 | 16.0   | 6.35        | 0.7 - 5.0       | PA66HS    | Black (BK) | 3;9-12 | 157-00081   |


All dimensions in mm. Subject to technical changes.

### 1-Piece Fixing Ties with Fir Tree, with Disc

#### 1-Piece Fixing Ties with Fir Tree, with Disc, releasable



One piece fixing tie with fir tree mount, standard design

| TYPE      | Width (W) | Length (L) | Bundle Ø max. |  N | Disc Ø | Hole Ø (FH) | Panel Thickness | Material | Colour     | Tools | Article-No. |
|-----------|-----------|------------|---------------|---------------------------------------------------------------------------------------|--------|-------------|-----------------|----------|------------|-------|-------------|
| REL30SDP6 | 5.0       | 170.0      | 31.0          | 135                                                                                   | 22.0   | 6.3 - 7.1   | 3.0 - 7.0       | PA66     | Black (BK) | 2;4-6 | 150-55500   |

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

|      |      |       |          |      |       |      |     |     |       |      |
|------|------|-------|----------|------|-------|------|-----|-----|-------|------|
| 2    | 3    | 4     | 5        | 6    | 7     | 8    | 9   | 10  | 11    | 12   |
| MK20 | MK21 | MK3SP | MK3PNSP2 | EVO7 | MK7HT | MK7P | MK6 | MK9 | MK9HT | MK9P |

For more information on toolings please refer to the Application Tooling chapter.

## Material Specification Overview

| MATERIAL                                                    | Material Shortcut  | Operating Temperature                       | Colour**                 | Flammability | Material Properties*                                                                                                                                                                                                                              | Material Specifications |
|-------------------------------------------------------------|--------------------|---------------------------------------------|--------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Aluminium-alloy                                             | AL                 | -40 °C to +180 °C                           | Natural (NA)             |              | <ul style="list-style-type: none"> <li>Corrosion resistant</li> <li>Antimagnetic</li> </ul>                                                                                                                                                       | RoHS                    |
| Chloroprene                                                 | CR                 | -20 °C to +80 °C                            | Black (BK)               |              | <ul style="list-style-type: none"> <li>Weather-resistant</li> <li>High yield strength</li> </ul>                                                                                                                                                  | RoHS                    |
| Ethylene Tetrafluoroethylene                                | E/TFE              | -80 °C to +170 °C                           | Blue (BU)                | UL94 V0      | <ul style="list-style-type: none"> <li>Resistance to radioactivity</li> <li>UV-resistant, not moisture sensitive</li> <li>Good chemical resistance to: acids, bases, oxidizing agents</li> </ul>                                                  | RoHS                    |
| Polyacetal                                                  | POM                | -40 °C to +90 °C, (+110 °C, 500 h)          | Natural (NA)             | UL94 HB      | <ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Flexible at low temperature</li> <li>Not moisture sensitive</li> <li>Robust on impacts</li> </ul>                                                                 | RoHS                    |
| Polyamide 11                                                | PA11               | -40 °C to +85 °C, (+105 °C, 500 h)          | Black (BK)               | UL94 HB      | <ul style="list-style-type: none"> <li>Bio-plastic, derived from vegetable oil</li> <li>Strong impact resistance at low temperature</li> <li>Very low moisture absorption</li> <li>Weather-resistant</li> <li>Good chemical resistance</li> </ul> | HF<br>RoHS              |
| Polyamide 12                                                | PA12               | -40 °C to +85 °C, (+105 °C, 500 h)          | Black (BK)               | UL94 HB      | <ul style="list-style-type: none"> <li>Good chemical resistance to: acids, bases, oxidizing agents</li> <li>UV-resistant</li> </ul>                                                                                                               | HF<br>RoHS              |
| Polyamide 4.6                                               | PA46               | -40 °C to +150 °C (5000 h), +195 °C (500 h) | Natural (NA), Grey (GY)  | UL94 V2      | <ul style="list-style-type: none"> <li>Resistance to high temperatures</li> <li>Very moisture sensitive</li> <li>Low smoke sensitive</li> </ul>                                                                                                   | HF<br>LFH<br>RoHS       |
| Polyamide 6                                                 | PA6                | -40 °C to +80 °C                            | Black (BK)               | UL94 V2      | <ul style="list-style-type: none"> <li>High yield strength</li> </ul>                                                                                                                                                                             | RoHS                    |
| Polyamide 6, high impact modified                           | PA6HIR             | -40 °C to +80 °C                            | Black (BK)               | UL94 HB      | <ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> </ul>                                                                                                                  | RoHS                    |
| Polyamide 6.6                                               | PA66               | -40 °C to +85 °C, (+105 °C, 500 h)          | Black (BK), Natural (NA) | UL94 V2      | <ul style="list-style-type: none"> <li>High yield strength</li> </ul>                                                                                                                                                                             | HF<br>RoHS              |
| Polyamide 6.6, glass-fibre reinforced                       | PA66GF13, PA66GF15 | -40 °C to +105 °C                           | Black (BK)               | UL94 HB      | <ul style="list-style-type: none"> <li>Good resistance to: lubricants, vehicle fuel, salt water and many solvents</li> </ul>                                                                                                                      | HF<br>RoHS              |
| Polyamide 6.6, heat and UV stabilised                       | PA66HSW            | -40 °C to +105 °C                           | Black (BK)               | UL94 V2      | <ul style="list-style-type: none"> <li>High yield strength</li> <li>Modified elevated max. temperature</li> <li>UV-resistant</li> </ul>                                                                                                           | HF<br>RoHS              |
| Polyamide 6.6, heat stabilised                              | PA66HS             | -40 °C to +105 °C                           | Black (BK), Natural (NA) | UL94 V2      | <ul style="list-style-type: none"> <li>High yield strength</li> <li>Modified elevated max. temperature</li> </ul>                                                                                                                                 | HF<br>RoHS              |
| Polyamide 6.6, high impact modified                         | PA66HIR            | -40 °C to +80 °C, (+105 °C, 500 h)          | Black (BK)               | UL94 HB      | <ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> </ul>                                                                                                                  | RoHS                    |
| Polyamide 6.6, high impact modified, heat and UV stabilised | PA66HIRHSW         | -40 °C to +110 °C                           | Black (BK)               | UL94 HB      | <ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> <li>Modified elevated max. temperature</li> <li>High yield strength, UV-resistant</li> </ul>                           | HF<br>RoHS              |
| Polyamide 6.6, high impact modified, heat stabilised        | PA66HIRHS          | -40 °C to +105 °C                           | Black (BK)               | UL94 HB      | <ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> <li>Modified elevated max. temperature</li> </ul>                                                                      | RoHS                    |
| Polyamide 6.6, high impact modified, scan black             | PA66HIR(S)         | -40 °C to +80 °C, (+105 °C, 500 h)          | Black (BK)               | UL94 HB      | <ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> </ul>                                                                                                                  | HF<br>RoHS              |
| Polyamide 6.6, UV-resistant                                 | PA66W              | -40 °C to +85 °C, (+105 °C, 500 h)          | Black (BK)               | UL94 V2      | <ul style="list-style-type: none"> <li>High yield strength</li> <li>UV-resistant</li> </ul>                                                                                                                                                       | 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 addition 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 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.

 = Minimum Loop Tensile Strength for Cable Ties (Newton)

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

| MATERIAL                                                                                          | Material Shortcut | Operating Temperature                 | Colour**                       | Flammability | Material Properties*                                                                                                                                                                                       | Material Specifications |
|---------------------------------------------------------------------------------------------------|-------------------|---------------------------------------|--------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <b>Polyamide 6.6</b> ,<br>with metal particles                                                    | PA66MP            | -40 °C to +85 °C,<br>(+105 °C, 500 h) | Blue (BU)                      | UL94 HB      | <ul style="list-style-type: none"> <li>High yield strength</li> <li>Metal and X-Ray detectable</li> </ul>                                                                                                  | HF<br>RoHS              |
| <b>Polyamide 6.6 V0</b>                                                                           | PA66V0            | -40 °C to +85 °C                      | White (WH)                     | UL94 V0      | <ul style="list-style-type: none"> <li>High yield strength</li> <li>Low smoke emission</li> </ul>                                                                                                          | HF<br>LFH<br>RoHS       |
| <b>Polyamide 6.6 V0</b> ,<br>High Oxygen Index                                                    | PA66V0-HOI        | -40 °C to +85 °C,<br>(+105 °C, 500 h) | White (WH)                     | UL94 V0      | <ul style="list-style-type: none"> <li>High yield strength</li> <li>Low smoke emissions</li> </ul>                                                                                                         | HF<br>LFH<br>RoHS       |
| <b>Polyester</b>                                                                                  | SP                | -50 °C to +150 °C                     | Black (BK)                     | Halogen free | <ul style="list-style-type: none"> <li>UV-resistant</li> <li>Good chemical resistance to:<br/>most acids, alkalis and oils</li> </ul>                                                                      | HF<br>LFH<br>RoHS       |
| <b>Polyetheretherketone</b>                                                                       | PEEK              | -55 °C to +240 °C                     | Beige (BGE)                    | UL94 V0      | <ul style="list-style-type: none"> <li>Resistance to radioactivity</li> <li>Not moisture sensitive</li> <li>Good chemical resistance to:<br/>acids, bases, oxidizing agents</li> </ul>                     | HF<br>LFH<br>RoHS       |
| <b>Polyethylene</b>                                                                               | PE                | -40 °C to +50 °C                      | Black (BK),<br>Grey (GY)       | UL94 HB      | <ul style="list-style-type: none"> <li>Low moisture absorption</li> <li>Good chemical resistance to: most<br/>acids, alcohol and oils</li> </ul>                                                           | HF<br>RoHS              |
| <b>Polyolefin</b>                                                                                 | PO                | -40 °C to +90 °C                      | Black (BK)                     | UL94 V0      | <ul style="list-style-type: none"> <li>Low smoke emissions</li> </ul>                                                                                                                                      | HF<br>LFH<br>RoHS       |
| <b>Polypropylene</b>                                                                              | PP                | -40 °C to +115 °C                     | Black (BK),<br>Natural<br>(NA) | UL94 HB      | <ul style="list-style-type: none"> <li>Floats in water</li> <li>Moderate yield strength</li> <li>Good chemical resistance to:<br/>organic acids</li> </ul>                                                 | HF<br>RoHS              |
| <b>Polypropylene, Ethylene-<br/>Propylene-Dien-<br/>Terpolymere-rubber</b><br>free of Nitrosamine | PP, EPDM          | -20 °C to +95 °C                      | Black (BK)                     | UL94 HB      | <ul style="list-style-type: none"> <li>Good resistance to high temperatures</li> <li>Good chemical and abrasion<br/>resistance</li> </ul>                                                                  | HF<br>RoHS              |
| <b>Polypropylene</b><br>with metal particles                                                      | PPMP              | -40 °C to +115 °C                     | Blue (BU)                      | UL94 HB      | <ul style="list-style-type: none"> <li>Floats in certain liquids</li> <li>Metal and X-Ray detectable</li> <li>Heat resistant</li> <li>Moderate yield strength</li> <li>Good chemical resistance</li> </ul> | RoHS                    |
| <b>Polyvinylchloride</b>                                                                          | PVC               | -10 °C to +70 °C                      | Black (BK),<br>Natural<br>(NA) | UL94 V0      | <ul style="list-style-type: none"> <li>Low moisture absorption</li> <li>Good chemical resistance to:<br/>acids, ethanol and oil</li> </ul>                                                                 | RoHS                    |
| <b>Stainless Steel,<br/>Stainless Steel</b>                                                       | SS304,<br>SS316   | -80 °C to +538 °C                     | Natural<br>(NA)                | Non burning  | <ul style="list-style-type: none"> <li>Corrosion resistant</li> <li>Antimagnetic</li> <li>Weather resistant</li> <li>Outstanding chemical resistance</li> </ul>                                            | HF<br>LFH<br>RoHS       |
| <b>Thermoplastic<br/>Polyurethane</b>                                                             | TPU               | -40 °C to +85 °C                      | Black (BK)                     | UL94 HB      | <ul style="list-style-type: none"> <li>High elasticity</li> <li>Good chemical resistance to:<br/>acids, bases and oxidizing agents</li> </ul>                                                              | HF<br>RoHS              |

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