### Order Codes

**Clamp Body**

*7*060,3*PP

One clamp body is consisting of two clamp halves.

* 1st part of STAUFF Group 7
* Exact outside diameter Ø D1 (mm)
* Material code (see below)

### Standard Materials

- **Polypropylene**
  - Colour: Green
  - Material code: PP

- **Polyamide**
  - Colour: Black
  - Material code: PA

- **Aluminium**
  - Colour: Self-Colour
  - Material code: AL

See page A88 for material properties and technical information.

### Special Materials

Please consult STAUFF for further details on fire-proof clamp body materials, tested and approved according to several international fire-protection standards.

See page A89 for material properties and technical information.

### Product Features

- Proven, tested and trusted product in various markets
- Recommended for the safe installation of rigid pipes and tubes
- Available for all commonly used pipe and tube outside diameters
- Environmental protection due to vibration/noise reducing design
- Excellent weathering resistance, even under extreme conditions

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See page A26 for STAUFF Group 3S to 6S (DIN Group 1 to 4).

Additional outside diameters are available upon request. Please consult STAUFF for further information.

---

<table>
<thead>
<tr>
<th>Group</th>
<th>Outside Diameter Pipe / Tube Ø D1 (mm)</th>
<th>Nominal Bore</th>
<th>Order Codes (2 Clamp Halves)</th>
<th>Dimensions (**/*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7S</td>
<td>69.3 65 70 73 76,1 82,5 88,9 96,1</td>
<td>3-3/4 2-1/2 3 3-1/2 3</td>
<td>7060,3*** 70703*** 7076,1*** 7082,5***</td>
<td>L1 154 152 122 120 120 112 2 60</td>
</tr>
<tr>
<td>8S</td>
<td>88,9 100 102 108 114 121,9 133</td>
<td>3-1/2 3 4 4-1/2 4</td>
<td>8088,9*** 81003*** 81023*** 81143***</td>
<td>L1 206 208 168 168 2 80</td>
</tr>
<tr>
<td>9S</td>
<td>127 133 140 152 159 165 168</td>
<td>5 6</td>
<td>9127*** 9133*** 91403*** 9152*** 9159*** 9165***</td>
<td>L1 231 230 252 252 112 3 31</td>
</tr>
<tr>
<td>10S</td>
<td>168 177,8 193,7 216 219 219 234 237 324</td>
<td>6 3</td>
<td>10168*** 10177,8*** 10193,7*** 10203*** 10216*** 10219***</td>
<td>L1 336 326 265 270 3 120</td>
</tr>
<tr>
<td>11S</td>
<td>219 273 324</td>
<td>8 10</td>
<td>11219*** 11273*** 11324***</td>
<td>L1 4/16 4/16 4/16 4/16 8 16/16</td>
</tr>
<tr>
<td>12S</td>
<td>356 406</td>
<td>14 16</td>
<td>12356*** 12406***</td>
<td>L1 6.30 6.30 5.34 5.30 20 182</td>
</tr>
</tbody>
</table>

See page A26 for STAUFF Group 3S to 6S (DIN Group 1 to 4).

Additional outside diameters are available upon request. Please consult STAUFF for further information.
### Standard Clamp Body Materials

<table>
<thead>
<tr>
<th>Material Code</th>
<th>PP</th>
<th>PA</th>
<th>AL</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Material</td>
<td>Upolymeric Polypropylene</td>
<td>Polyamide</td>
<td>Aluminium AlSi12</td>
<td>Thermoplastic Elastomer</td>
</tr>
<tr>
<td>Standard Colour</td>
<td>Green</td>
<td>Black</td>
<td>Natural</td>
<td>Black</td>
</tr>
</tbody>
</table>

**Mechanical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>PP</th>
<th>PA</th>
<th>AL</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile E-Module</td>
<td>1073 N/mm² (ISO 527)</td>
<td>&gt; 1400 N/mm² (ISO 527)</td>
<td>&gt; 65000 N/mm²</td>
<td>113 N/mm² at +23 °C / +73.4 °F (ASTM D412)</td>
</tr>
<tr>
<td>Notch Impact Strength</td>
<td>7.5 kJ/m² at +23 °C / +73.4 °F (acc. to Charpy / ISO 179/1eA)</td>
<td>&gt; 15 kJ/m² at +23 °C / +73.4 °F (acc. to Charpy / ISO 179/1eA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Temperature Notch Impact Strength</td>
<td>3.1 kJ/m² at -30 °C / -22.0 °F (acc. to Charpy / ISO 179/1eA)</td>
<td>&gt; 3 kJ/m² at -30 °C / -22.0 °F (acc. to Charpy / ISO 179/1eA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tensile Strength at Yield (Tensile Strength)</td>
<td>25 N/mm² (ISO 527)</td>
<td>&gt; 55 N/mm² (ISO 527)</td>
<td>&gt; 150 N/mm² (ISO EN 10002)</td>
<td>15.9 N/mm² (ASTM D412)</td>
</tr>
<tr>
<td>Ball Indentation Hardness (Brinell Hardness)</td>
<td>45.4 N/mm² (ISO 2039-1)</td>
<td>&gt; 65 N/mm² (ISO 2039-1)</td>
<td>&gt; 55 HBs</td>
<td></td>
</tr>
<tr>
<td>Shore Hardness</td>
<td></td>
<td></td>
<td></td>
<td>87 A (ISO 868)</td>
</tr>
</tbody>
</table>

**Thermal Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Temperature Resistance (Continuous Exposure, Min ... Max)</th>
<th>Mechanical Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-30 °C ... +90 °C / -22 °F ... +104 °F</td>
<td>Shore Hardness: 73 A (ISO 868)</td>
</tr>
<tr>
<td></td>
<td>-40 °C ... +120 °C / -40 °F ... +248 °F (Stel exposure up to +140 °C / +284 °F)</td>
<td>Modulus of Elasticity: 16 N/mm² at +23 °C / +73.4 °F (ASTM D 412)</td>
</tr>
<tr>
<td></td>
<td>up to +300 °C / up to +572 °F</td>
<td>Tensile Stress: 8.3 N/mm² (ASTM D 412)</td>
</tr>
<tr>
<td></td>
<td>-40 °C ... +125 °C / -40 °F ... +257 °F</td>
<td>Tensile Strength at Yield: 9 N/mm² (DIN 53504)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tensile Strain at Break: 400% (DIN 53504)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tear-Growth Resistance: 9 N/mm (DIN 53507-A)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Compression Set: 20% (DIN 53517) (22h at +70 °C / +158 °F)</td>
</tr>
</tbody>
</table>

**Chemical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Weak Acids</th>
<th>Solvents</th>
<th>Benzine</th>
<th>Mineral Oils</th>
<th>Other Oils</th>
<th>Alcohols</th>
<th>Seawater</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>conditionally consistent</td>
<td>conditionally consistent</td>
<td>conditionally consistent</td>
<td>conditionally consistent</td>
<td>conditionally consistent</td>
<td>conditionally consistent</td>
<td>conditionally consistent</td>
</tr>
<tr>
<td></td>
<td>conditionally consistent</td>
<td>conditionally consistent</td>
<td>conditionally consistent</td>
<td>conditionally consistent</td>
<td>conditionally consistent</td>
<td>conditionally consistent</td>
<td>conditionally consistent</td>
</tr>
</tbody>
</table>

The information for the Polyamide material PA and the Polyamide based materials PAV0 and PA-FF have been determined in a conditioned state according to ISO 1110. For Aluminium, the tensile strength (under reversed bending stress) and impact bending strength both rise constantly at decreasing temperatures whilst the value for breaking elongation decreases.

### Standard Rubber Insert Materials

**Thermoplastic Elastomer (73 Shore-A)**

- Standard Material for STAUFF Group 4 and 6 (Standard Series)
- Standard Material for STAUFF Group 4S to 6S (Heavy Series)

**Mechanical Properties**

- Shore Hardness: 73 A (ISO 868)
- Modulus of Elasticity: 16 N/mm² at +23 °C / +73.4 °F (ASTM D 412)
- Tensile Stress: 8.3 N/mm² (ASTM D 412)

**Thermal Properties**

- Temperature Resistance: -40 °C ... +125 °C / -40 °F ... +257 °F

**Chemical Properties**

- Consistent against weak acids and solvents;
- conditionally consistent against benzine and mineral oils;
- consistent against other oils, alcohols and sea water.

**Elastomer (70 Shore-A)**

- Standard Material for STAUFF Group 7S to 10S (Heavy Series)
- Standard Material for STAUFF Group 4S to 6S (Heavy Series)

**Mechanical Properties**

- Shore Hardness: 70 A (DIN 53505)
- Tensile Strength at Yield: 9 N/mm² (DIN 53504)
- Tensile Strain at Break: 400% (DIN 53504)
- Tear-Growth Resistance: 9 N/mm (DIN 53507-A)
- Compression Set: 20% (DIN 53517) (22h at +70 °C / +158 °F)

**Chemical Properties**

- Consult STAUFF for further information.
<table>
<thead>
<tr>
<th>Material</th>
<th>PA-FF</th>
<th>PPDA</th>
<th>PP6853</th>
<th>PPV0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyamide</td>
<td>Polyamide</td>
<td>Polypropylene</td>
<td>Polypropylene</td>
<td>Polypropylene</td>
</tr>
<tr>
<td>Grey</td>
<td>Black</td>
<td>White</td>
<td>White</td>
<td>Black</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Value</th>
<th>1500 N/mm² (ISO 527-1/2)</th>
<th>1100 N/mm² (ISO 527-1/2)</th>
<th>2200 N/mm² (ISO 527) at +23 °C / +73.4 °F</th>
<th>1440 N/mm² (ICE 60811-1-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Ice)</td>
<td>16 kJ/m² at +23 °C / +73.4 °F</td>
<td>11.8 kJ/m² at +23 °C / +73.4 °F</td>
<td>16 kJ/m² at +23 °C / +73.4 °F</td>
<td>5 kJ/m² at +23 °C / +73.4 °F</td>
</tr>
<tr>
<td>(Acc.)</td>
<td>(acc. to Charpy / ISO 179/1Ea)</td>
<td>(acc. to Izod / ISO 179/1Ea)</td>
<td>(acc. to Izod / ISO 179/1Ea)</td>
<td>(acc. to ISO 180/A)</td>
</tr>
<tr>
<td>45 N/mm²</td>
<td>50 N/mm² (ISO 527-1/2)</td>
<td>15.1 N/mm² (ISO 527) at +23 °C / +73.4 °F</td>
<td>20.4 N/mm² (ICE 60811-1-1)</td>
<td>25 N/mm² (ISO 527)</td>
</tr>
<tr>
<td>(ISO 2039-1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Temperature Range | -30 °C ... +120 °C / -22 °F ... +248 °F | -30 °C ... +120 °C / -22 °F ... +248 °F | -25 °C ... +90 °C / -13 °F ... +194 °F | -25 °C ... +90 °C / -13 °F ... +194 °F |

**tested and approved according to UL94 (Vertical Burning Test)**
- Classification: 94V-0 (thickness: 0.4mm)
- Tested and approved according to DIN 5510, Part 2
  - Combustibility classification: S3
  - Smoke development classification: SR2
  - Dripping classification: ST2
  - Oxygen index: 28.0% (according to ISO 4589-2)
  - Flammability temperature: 327 °C / 621 °F (according to ISO 4589-3, Annex A)
- High durability (even at low temperatures), mechanical strength and rigidity, good attrition resistance and fatigue strength, good UV resistance

**tested and approved according to DIN 5510, Part 2**
- Combustibility classification: S4
- Smoke development classification: UR2
- Dripping classification: ST2
- Oxygen index: 28.0% (according to ISO 4589-2)
- Flammability temperature: 327 °C / 621 °F (according to ISO 4589-3, Annex A)
- High durability (even at low temperatures), mechanical strength and rigidity, good attrition resistance and fatigue strength, good UV resistance

**tested and approved according to Def Stan 07-247**
- Assessment: category B
- Approved by the UK Ministry of Defence (MoD)
- Smoke index: 11.1% (according to Def Stan 02-711, thickness: 3.0mm)
- Halogen-free flame retardant system
- Toxicity index: 0.0 / 100 g (according to Def Stan 02-713)
- Oxygen index: 30.9% (according to ISO 4589-2)
- Flammability temperature: 231 °C / 448 °F (according to ISO 4589-3, Annex A)

**tested and approved according to BS 6853**
- Code of practice for fire precautions in the design/ construction of passenger carrying trains
- Assessment: category 1a
- Compliant to the requirements of London Underground / Metronet (standard 2-01001-005: Fire Safety Performance of Materials)
- Tested and approved according to DIN 5510, Part 2
  - Combustibility classification: S3
  - Smoke development classification: SR2
  - Dripping classification: ST2
- Tested and approved according to Def Stan 07-247
  - Assessment: category B
  - Smoke index: 6.1% (according to Def Stan 02-711, thickness: 3.0mm)
  - Halogen-free flame retardant system
  - Toxicity index: 0.9 / 100 g (according to Def Stan 02-713)
- Oxygen index: 42.0% (according to ISO 4589-2)
- Flammability temperature: 325 °C / 617 °F (according to ISO 4589-3, Annex A)

**tested and approved according to UL94 (Vertical Burning Test)**
- Classification: 94V-0 (thickness: 3mm / 13mm)
Standard Clamp Body Designs

**Profiled Design**
Profiled Inside Surface with Tension Clearance
- Available in the Standard, Heavy, Twin and Heavy Twin Series
- Recommended for the safe installation of rigid pipes or tubes
- Available for all commonly used outside diameters and nominal sizes
- Vibration/noise reducing and impact absorbing effect towards the direction of the line provided by the grooves on the inside of the clamp bodies
- To be used as fixed point clamp preventing the line from sliding (see page A93 for Maximum Loads in Pipe Direction)
- Clearance between the clamp halves provides tension of the tube or pipe

**Type H (Smooth)**
Smooth Inside Surface w/o Tension Clearance
- Available in the Standard, Heavy and Twin Series
- Recommended for the safe installation of hoses or cables
- Available for all commonly used outside diameters and nominal sizes
- Smooth inside surface and chamfered edges avoid damaging of the hose or cable
- To be used as guide allowing the line to slide
- Choose internal diameter of the clamp body slightly smaller than the outside diameter of the hose or cable to use it as fixed point clamp preventing the line from sliding

**Type RI (with Rubber Insert)**
- Available in the Standard, Heavy and Heavy Twin Series
- Recommended for the extra-gentle installation of pipes, tubes, hoses or cables
- Available for all commonly used outside diameters and nominal sizes
- Rubber insert made of Thermoplastic Elastomer with a hardness of 73 Shore-A provides most effective reduction of vibration and noise caused by vibration

**Oval Design**
- Available in the Standard and Heavy Series
- Recommended for the safe installation of electric cables with diameters between 20 mm (.79 in) and 72 mm (2.83 in)

**Rectangular Design • Type VK**
- Available in the Standard Series (STAUFF Group 5)
- Recommended for the safe installation of proximity switches according to DIN EN 60947-5-2 or similar, rectangular construction, with a square of 40 mm x 40 mm (1.57 in x 1.57 in) or 40 mm x 36 mm (1.57 in x 1.42 in)