Flexible Fluorine (ETFE) Resin Tubing Clear

[Model Number: E-SJ-(I.D.) × (O.D.)]

Applications • Fluids

- For Industrial Ink-Jet Printers (For Ink-Supplying Pipes)
- For Transferring Paints, Solvents, and Adhesives
- For Transferring Chemicals used in Laboratory Equipment
- For Transferring Chemicals used in Semiconductor-Related Devices and Flat Panel Display (FPD) Manufacturing Devices
- For Transferring Beverage and Food
- For Transferring Fatty Acid Ester such as Biofuel (BDF)
- For Transferring Chemical and Industrial Wastes
- For Transferring Alcohol, Cosmetics, and Chemicals
- For Transferring Chemicals used in Medical Equipment, Endoscope, and so on
- For Transferring Chemicals used in Manufacturing Fuel Cell and Pure Water
- For Filling Line of Paints and Adhesives
- For Filling Line of Fragrance, Colorant, and Additive
- For Air Supplying Pipes at Clean Room

Standard • Packing Information

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Inch (Inside Diameter) (*1)</th>
<th>I.D. × O.D.</th>
<th>Working Pressure (MPa)</th>
<th>Minimum Bend Radius at 20°C</th>
<th>Standard Length in M</th>
<th>Product Weight in kg/roll</th>
<th>Color</th>
<th>Packing</th>
<th>Diameter (D)</th>
<th>Height (H)</th>
<th>Net Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-SJ-2×4</td>
<td>5/64</td>
<td>2 × 4</td>
<td></td>
<td></td>
<td>15</td>
<td>20</td>
<td>0.24</td>
<td>Plastic Bag</td>
<td>23.5</td>
<td>5</td>
<td>0.44</td>
</tr>
<tr>
<td>E-SJ-3×5</td>
<td>1/8</td>
<td>3 × 5</td>
<td>0.0 ~ 0.6</td>
<td>20</td>
<td>20</td>
<td>100</td>
<td>1.19</td>
<td>Cardboard Box</td>
<td>38.5</td>
<td>15</td>
<td>1.71</td>
</tr>
<tr>
<td>E-SJ-4×6</td>
<td>5/32</td>
<td>4 × 6</td>
<td>0.0 ~ 0.2</td>
<td>25</td>
<td>20</td>
<td>100</td>
<td>1.60</td>
<td>Cardboard Box</td>
<td>38.5</td>
<td>15</td>
<td>2.12</td>
</tr>
<tr>
<td>E-SJ-8×8</td>
<td>1/4</td>
<td>6 × 8</td>
<td>0.0 ~ 0.4</td>
<td>50</td>
<td>20</td>
<td>100</td>
<td>2.00</td>
<td>Plastic Bag</td>
<td>26</td>
<td>5</td>
<td>0.40</td>
</tr>
<tr>
<td>E-SJ-8×9</td>
<td>1/4</td>
<td>6 × 9</td>
<td>0.0 ~ 0.6</td>
<td>35</td>
<td>20</td>
<td>100</td>
<td>2.82</td>
<td>Plastic Bag</td>
<td>35.5</td>
<td>15</td>
<td>3.74</td>
</tr>
<tr>
<td>E-SJ-8×12</td>
<td>5/16</td>
<td>8 × 12</td>
<td></td>
<td>50</td>
<td>20</td>
<td>100</td>
<td>3.50</td>
<td>Plastic Bag</td>
<td>38.5</td>
<td>5</td>
<td>5.30</td>
</tr>
</tbody>
</table>

*1: Please note that inch size is approximate, which is not equal to millilunit.
*2: “Diameter (D) × Height (H) means "External Dimensions of Cardboard Box (D) × "Height (H).”
**Chemical Resistance** - Since the inner layer is made of ETFE fluorine resin, E-SJ is resistant to most of the chemical substances. For more information, please refer to chemical resistance data.

**Flexibility** - Due to the laminated structure, compared with the conventional single-layer fluorine tubing, E-SJ is superior in flexibility. This improves your work efficiency.

**Hard to Break** - Unlike the conventional single-layer fluorine tubing, E-SJ is hard to break. (Even if it breaks, you can restore its shape to some extent.)

**Non-Adhesiveness** - Since fluorine resin is superior in water-proof and non-adhesiveness, you can wash out the fluids very easily.

**Abrasion Resistance** - Fluorine resin (inner layer) shows higher levels of abrasion resistance. Thus, you can transfer chemical slurry.

**Plastic-Free** - E-SJ does not contain plasticizer (an elution material) at all. E-SJ is an oil-free tubing.

**Non-PVC** - E-SJ is made of a non-PVC material.

**Low Elution and Low Odor** - Since this tubing contains very low levels of elution and odor, it is recommended for use in transfers of food, beverage, and cosmetics.

**High Purity** - Fluorine resin does not contain any additives such as plasticizer, so this tubing is suitable for transferring high-purity chemical fluids.

**Easy to Cut** - Since we print the cut mark on the tubing every meter, it is easy to cut the length you would like to.

**Green Procurement** - E-SJ is compliant with RoHS2 requirements.

**Original Fittings** - By using our original fittings, you can avoid accidents which are caused by incorrect choices of hose and fittings.


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**Technical Information**

**ESJ Relationship between Working Temperature and Maximum Working Pressure**

- The above graph is the value when our original fittings are used.

**Non-Adhesiveness Comparison Data**

- Non-adhesiveness and smoothness, which are peculiar to fluorine resin, make it easier to wash out the fluid.

**Washing Method**

- You can check the data about critical surface tension and contact angle against water.

**Test Sample**

<table>
<thead>
<tr>
<th>Test Sample</th>
<th>Minimum Bend Radius (mm)</th>
<th>Amount of Deflection (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-FD-4 × 6</td>
<td>23 (Curing Value : 25)</td>
<td>28</td>
</tr>
<tr>
<td>E-SJ-4 × 6</td>
<td>23 (Curing Value : 25)</td>
<td>31</td>
</tr>
<tr>
<td>PFA Tubing</td>
<td>22 (Curing Value : 25)</td>
<td>7</td>
</tr>
<tr>
<td>PFA (4 × 6)</td>
<td>23 (Curing Value : 25)</td>
<td>6</td>
</tr>
</tbody>
</table>

**Test Method for Amount of Deflection (Flexibility)**

- Add a 50 gram weight to the end of the tubing for one minute. Then, measure the amount of deflection. (The test piece goes through the annealing step in advance to make it straight.)

**HAKKO Original Fittings**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Body</th>
<th>Nut</th>
<th>Thread</th>
<th>HEX</th>
<th>Product Weight (gram)</th>
<th>Applicable Hose</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFT-2 × 4R1/8</td>
<td>A</td>
<td>24</td>
<td>5</td>
<td>D</td>
<td>E</td>
<td>E-SJ × 4</td>
</tr>
<tr>
<td>EFT-2 × 4R1/4</td>
<td>B</td>
<td>30</td>
<td>5</td>
<td>D</td>
<td>E</td>
<td>E-SJ × 4</td>
</tr>
<tr>
<td>EFT-4 × 4R1/4</td>
<td>C</td>
<td>31</td>
<td>5</td>
<td>D</td>
<td>E</td>
<td>E-SJ × 4</td>
</tr>
<tr>
<td>EFT-6 × 4R1/4</td>
<td>D</td>
<td>33</td>
<td>5</td>
<td>D</td>
<td>E</td>
<td>E-SJ × 4</td>
</tr>
<tr>
<td>EFT-8 × 4R1/8</td>
<td>E</td>
<td>35</td>
<td>5</td>
<td>D</td>
<td>E</td>
<td>E-SJ × 4</td>
</tr>
<tr>
<td>EFT-8 × 4R1/4</td>
<td>F</td>
<td>41</td>
<td>7</td>
<td>D</td>
<td>E</td>
<td>E-SJ × 4</td>
</tr>
</tbody>
</table>

**Contact us if you have any inquiries about HAKKO products.**

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