



**1. Introduction**

**1.1. General**

This specification covers the design requirements and characteristics required of fiber optic splice protection sleeves to be used on fiber optic splice tray in the fiber optic splice closure, fiber optic distribution frame, fiber optic termination box and etc.

**1.2. Description**

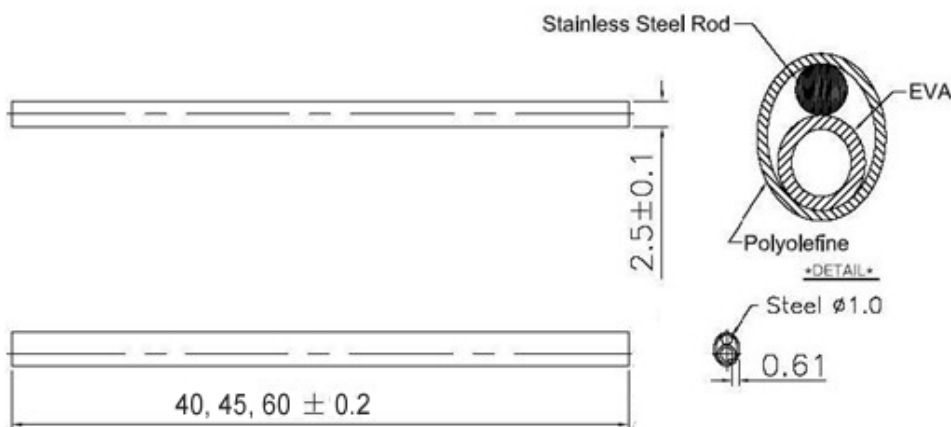
The fiber optic splice protection sleeves are designed to protect the bare fiber portion of a fusion splice. They provide mechanical and environmental protection for fusion splices of single and ribbon fiber.

**1.3. Reliability**

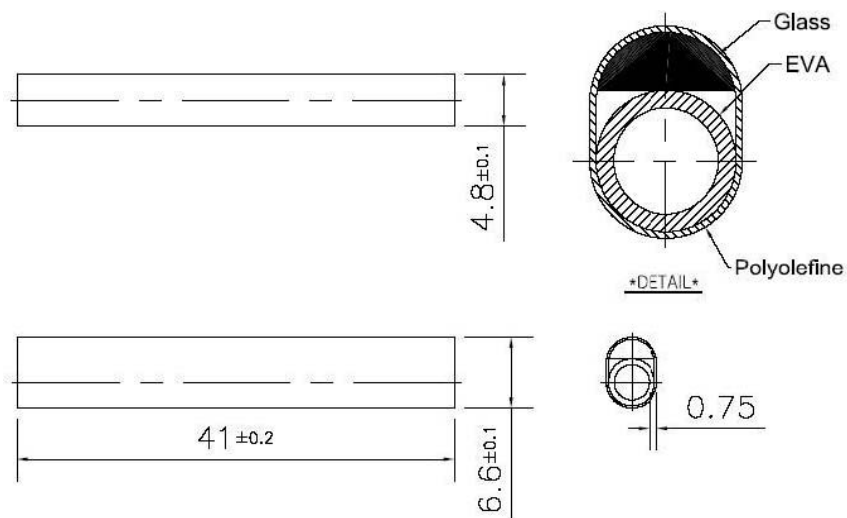
The quality of an fiber optic splice closure is critical to reliable optical transmission performance. The product shall be produced with ISO-9001 certified production facilities and quality control system is applied the process from product design to packaging.

**2. Fiber Optic Splice Protection Sleeve**

**2.1. Configuration**



[ Figure-1 : single Fiber Type ]



[Figure-2 : Ribbon Fiber Type]

**2.2. Materials**

Items	Inner Tube	Outer Tube	Reinforcement
Single Fiber Type	EVA	Polyolefine	Stainless Steel
Ribbon Fiber Type	EVA	Polyolefine	Glass

**2.3. Characteristics**

Items	Characteristics
Fiber Diameter	Nominal 0.25 or 0.9mm
Shrink Temperature	Approximately 110 ~ 130℃
Heation Time	Approximately 60 ~ 80℃
Radial Shrinking Rate	> 50%
Axial Shrinking Rate	<10%
Low Temperature Property	No Crack at 55℃ Lasting 4Hr
Normal Operation Temperature	-40 ~ +60℃
Normal Operation Relative Humidity	≤ 95%
Tensile Strength	20Mpa
Loss at 40℃	0.03dB
Loss at +60℃, RH 95%	0.01dB

**2.4. Requirements**

REQUIREMENT	METHOD AND CONDITIONS		FAILURE CRITERIA
<b>FAILURE CRITERIA REFERENCES</b>			
<b>APPEARANCE</b>	Examination of the product with the naked eye.		No defects which would adversely affect the product performance.
<b>CHANGE IN OPTICAL LOSS</b>	Source wavelength: Temperature: Circuit:	1310 and 1550 nm ( $23 \pm 3$ )°C 5 splices in series, minimum 2 meter of fiber between splices	Additional loss: $\leq 0.2$ dB per circuit during the test $\leq 0.1$ dB per circuit after the test
<b>MECHANICAL TESTS</b>			
<b>AXIAL PULL ON FIBERS</b>	Force: Rate: Duration:	5 N per fiber 0-5 N in 15 s 1 minute	• Appearance
<b>INSTALLATION</b>	Number of splices:	Circuit = 5 splices on one fiber, minimum 2 meter fiber between splices	• Change in optical loss after the test
<b>VIBRATION</b>	Sweep range: - crossover frequency: - below 41 Hz: - above 41 Hz: Axes: Duration:	(5-500) Hz at 1 octave/minute 41 Hz Amplitude 0.75 mm Acceleration 50 m/s <sup>2</sup> (5 g) 1 10 cycles	• Appearance of uninstalled pieces in packaging.
<b>ENVIRONMENTAL TESTS</b>			
<b>TEMPERATURE CYCLING</b>	Lowest temperature: Highest temperature: Dwell time: Transition time: Number of cycles:	( $-40 \pm 2$ )°C ( $70 \pm 2$ )°C 2 hrs 2 hrs 20	• Change in optical loss • Appearance
<b>TEMPERATURE CYCLING WITH CONDENSATION (Z/AD)</b>	Cycle A: Lowest temperature: Highest temperature: Relative humidity: Duration time: Cycle B: Lowest temperature: Highest temperature: Humidity level: Duration time: Total cycles:	( $+25 \pm 2$ )°C ( $65 \pm 2$ )°C ( $93 \pm 3$ )%RH 24 hrs ( $-10 \pm 2$ )°C ( $65 \pm 2$ )°C ( $93 \pm 3$ )%RH 24 hrs 10cycles,alternating cycle A and B	• Change in optical loss • Appearance

### 3. Delivery

#### 3.1. Packing

The fiber optic splice protection sleeve shall be covered with protective materials to prevent scratching or damages during shipping or storage. The final shipping cartons shall have sufficient strength and durability to protect the contents in the process of handling during storage and shipping by land, sea, or air.

#### 3.2. Marking

The details given below shall be distinctively marked in English with a weatherproof material on at least two sides of the shipping carton.

- The product item
- Date of Delivery
- Q'ty, Supplier
- Dimension, Gross wt
- Manufacturer's name and /or trademark, Phone
- Date of manufacture
- Caution mark

Each Closure shall be marked with the company, the month and year of manufacture and the trademark and/or name of manufacturer in legible color.

- The End of Specifications -