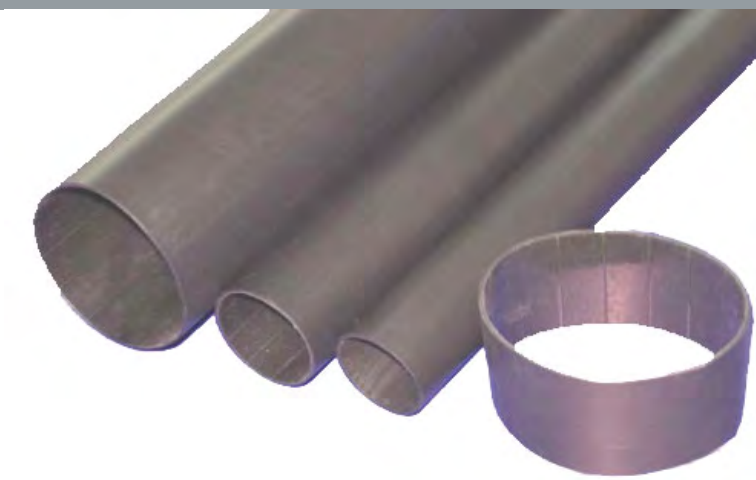
SMDW/STDW HEAT SHRINKABLE TUBING WITH HOT MELTING ADHESIVE

SMDW/STDW flexible heat shrinkable tubing is made from radiation crosslinked Polyolefin. Specially designed for insulating, protecting and sealing electrical connections and joints in medium and low-voltage cables, which was installed on splices and joints. It is also resistant to chemicals, UV, moisture and oils.



FEATURES

Dimensions & Longitudinal Change

Three 150-mm specimens of tubing, as supplied, shall be measured for length ± 1 mm and inside diameter in accordance with ASTM D 2671, conditioned for 5 minutes in a 200 ± 2°C oven, cooled to 23 ± 3°C and then re-measured. Prior to and after conditioning, the dimensions of the tubing shall be in accordance with Table 1. Longitudinal change (LC) shall be calculated as follows:
LC= (L1–L0)/L0 x 100
where
LC = longitudinal change
L0 = length before shrinkage
L1 = length after shrinkage

Eccentricity

Perform the test in accordance with ASTM D 2671. Eccentricity (EC) shall be calculated as follows:
EC = (1 – W1/W2) x 100
where
W1 = minimum wall thickness
W2 = maximum wall thickness

Tensile Strength & Ultimate Elongation

Three specimens of tubing shall be tested for tensile strength and ultimate elongation in accordance with ASTM D 2671. The rate of jaw separation shall be 50.8mm per minute.

Secant Modulus

From the tubing sample in the expanded form, determine the secant modulus in accordance with ASTM D 2671. The secant modulus shall be calculated from the following formula after determining the tensile stress necessary to produce a 2 percent strain:
SM2 =(S2/0.02) = 50S2
where
SM2 = secant modulus at 2 percent strain, MPa

Thermal Aging

Perform the test in accordance with ASTM D 2671. Aging condition shall be 150°C for 168 hrs.

Heat Shock

Perform the test in accordance with ASTM D 2671. The specimen may be placed horizontally in the oven at 225 °C for 4 hours. While in the oven and after removal from the oven, the specimen shall be examined for evidence of cracking.

Cold bend test

Perform the test in accordance with ASTM D 2671 at the condition of -55°C for 4 hrs.

Water Absorption

Perform the test in accordance with ISO 62 at the condition of 23 °C for 24hrs.

Density

Perform the test in accordance with ASTM D792.

Volume Resistance

Perform the test in accordance with IEC 93.

Dielectric strength

Perform the test in accordance with IEC 60243.

Corrosion test

Perform the test in accordance with ASTM D 2671 Procedure A(150°C/168hrs).

UV resistance

Perform the test in accordance with ASTM G154. The test condition is 8h UV at 60±3°C, 4h condensation at 50±3°C, total exposure time:1000hrs.

Peel strength test

Perform the test in accordance with ASTM D 1000.

Softening point

Perform the test in accordance with ASTM E28.

PROPERTY	UNIT	REQUIRED VALUE	TEST VALUE
SHRINKING PROPERTIES			
LONGITUDINAL CHANGES	%	0 to -10%	0 to -10%
ECCENTRICITY	%	Max. 40%	0 to 40 %
PHYSICAL PROPERTIES (JACKET LAYER)			
TENSILE STRENGTH	MPa	Min. 12 MPa	Min. 14MPa
ULTIMATE ELONGATION	%	Min. 200%	Min 400 %
SECANT MODULUS / 2% STRAIN	MPa	Min.185	210
AFTER AGING AT 150°C /168 HRS			
TENSILE STRENGTH	MPa	Remain 70%	Min. 12 Mpa
ULTIMATE ELONGATION	%	Min. 100%	Min. 300%
HEAT SHOCK 225°C / 4 HRS		No cracking, flowing, dropping	No cracking, flowing, dropping
COLD BEND TEST -55°C / 4 HRS		No cracking	No cracking
WATER ABSORPTION	%	Max. 0.5	0.15
DENSITY	g/cm^3		0.9-1.0
ELECTRICAL PROPERTIES(JACKET LAYER)			
DIELECTRIC STRENGTH	kV/mm	Min. 15	19
VOLUME RESISTANCE	Ω.cm	Min. 10^{14}	10^{14}
CHEMICAL PROPERTIES(JACKET LAYER)			
COPPER CORROSION		No corrosion	No corrosion
UV RESISTANCE		No color change and crack	No color change and crack
PROPERTIES OF ADHESIVE			
PEEL STRENGTH TO PE	Pli		41
PEEL STRENGTH TO ALUMINUM	Pli		40
WATER ABSORPTION	%	Max.0.2	0.1
SOFTENING POINT	°C		90 ±5
CORROSION		No corrosion	No corrosion