

KROY Identification Products

Printable Zero Halogen Thin Wall 2:1 Recovery Heat Shrink Tubing - LUL Approved

Heat Shrink tubing extruded and flattened for Kroy Europe Ltd by  SUMITOMO ELECTRIC

TECHNICAL DATA SHEET

SUMITUBE[®] NH(TW)

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General Characteristics	Non- halogen, flexible, flame retardant heat shrinkable tubing Fully compliant with LUL Standard
Material	Halogen free Polyolefin
Surface	Glossy
Marking	None
Colours and Dimensions	See Dimension Table

Properties	Test Method	Standard Requirements	Typical Value
Referring Size 3/4"			
Shrink Ratio 2:1			
Thermal Properties			
Continuous Operating Temperature	IEC 216	-40°C to +105°C	
Min. Shrink Temperature for Full Recovery		+115°C	
Shrinking starts at		+60°C	
Longitudinal Change	SFP-Std.	+5/ -10%	-5%
Heat Shock (225°C x 4h)	SAE-AMS-DTL-23053	no crack, flowing or dripping	Pass
Elongation After Heat Ageing (136°C x 168h)	ASTM D2671	100% Min.	170 - 200 %
Tensile Strength after heat ageing (136°C x 168h)	ASTM D2671	7.3MPa Min	Pass
Low Temperature Flexibility (-40°C x 4h)	SAE-AMS-DTL-23053	no cracking	Pass
Copper mirror Corrosion (175°C x 16h)	SAE-AMS-DTL-23053	no corrosion	Pass
Physical Properties			
Specific Gravity	ASTM D 792	n.a.	1.49
Tensile Strength	ASTM D2671	10.4MPa Min.	> =11.4MPa
Elongation at Break	ASTM D2671	200% Min.	> = 400%
Secant Modulus	ASTM D2671	130MPa Max.	100MPa
Chemical Properties			
Halogen Content	NFX-70-100. BS 6853	Zero	Zero
Flammability	Japanese Railway	Flame retardant	Pass
Water Absorption	SAE-AMS-DTL-23053	1.0% Max.	0.50%
Electrical Properties			
Voltage Rating		n.a. (600V)	Pass
Dielectric Voltage Withstand (2.5kV x 60sec.)	UL 224	n.a. (no breakdown)	Pass
Volume Resistivity	ASTM D876	10 ¹² Ohm-cm Min.	3.1x10 ¹³ Ohm-cm
Dielectric Strength	ASTM D876	19.7kV/mm Min.	20KV/mm

(Continued)	Test Method	Standard Requirements	Typical Value
Safety Properties			
Flammability	see chem. properties	see chem. properties	
Flame Spread Index	ASTM E162	14 nom	Pass
Oxygen Index	BS EN ISO 4589-2 (1996) Part 2	35 Min	> = 38
Flammability Temperature Index	NES 715 BS EN ISO 4589-3 (1996) Part 3	250°C Min. Ia(300°C) & Ib(250°C)	Pass (>354°C) Pass both
Smoke Index	NES 711	10.0 Max.	8.4
Smoke Emission Test	BS 6853 1999 AnnexD Clause D.8.3	A ₀ < 0.017 m ² /g	0.0044 m ² /g
Acid Gas Generation (equiv. % of HCL)	MIL-C-24643	0.2% Max.	0.07%
Toxic Fume Emission	LUL E1042: A6(2002)	< 0.015	Fully compliant
Test Fluid for Fluid Resistance			
(23°C x 24h)	SAE-AMS-DTL-23053		
Tensile Strength	ASTM D2671	5.5MPa Min.	Pass
Elongation	ASTM D2671	100% Min.	≥ 360%

Applicable Specification

LUL: London Underground Limited, Eng.Stand. E 1042. A6

SAE-AMS-DTL-23053

Tubing meets Boeing Marking Standard BMS 13-69

BS 6853

Clauses 8.8,8.9 - Fluid resistance & Marking resistance

BS EN ISO 4589-3

when printed with specific Kroy Printer Ribbon

Japanese std for railway vehicle material

Part No. 92-BLK-PR243STUC

SFP (SUMITOMO) std

Test data available from Kroy Europe Ltd

DIMENSION TABLE

Standard Colours: Black - Colours to order

Standard Packaging: Spools in boxes

Standard Sizes and Quantities:

Type/Size (Inch)	Inside Diameter (mm)		Wall Thickness Recovered (nom.)	Quantity per Spool / Box (m)
	Expanded (min.)	Recovered (max.)		
1/16	1.60	0.80	0.43	300/?
3/32	2.40	1.20	0.51	150/
1/8	3.20	1.60	0.51	150/600
3/16	4.80	2.40	0.51	60/300
1/4	6.4	3.20	0.64	60/300
3/8	9.5	4.80	0.64	60/300
1/2	12.7	6.4	0.64	30/300
3/4	19.1	9.5	0.76	60/180
1	25.4	12.7	0.89	60/180
1-1/2	38.1	19.1	1.02	60/180
2	50.8	25.4	1.14	60/120