



## TECHNICAL DATA SHEET

SUMITUBE<sup>®</sup> NH(3X)

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**General Characteristics**

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

<b>Properties</b>	Test Method	Standard Requirements	Typical Value
Shrink Ratio 3:1			
<b>Thermal Properties</b>			
Continuous Operating Temperature		-40°C to +105°C	
Min. Shrink Temperature for Full Recovery		+115°C	
Shrinking starts at		+60°C	
Longitudinal Change	SFP-Std.	-15% Min	minus 5 to mins10%
Heat Shock (225°C x 4h)	SAE-AMS-DTL-23053	no crack, flowing or dripping	Pass
Tensile strength after heat bageing (136°C x 168h)	ASTM D 2671	7.3 MPa Min	Pass
Elongation After Heat Ageing (136°C x 168h)	ASTM D 2671	100% Min.	> = 170%
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
<b>Physical Properties</b>			
Specific Gravity	ASTM D 792	1.50 nom.	1.52
Tensile Strength	ASTM D 2671	10.4MPa Min.	Pass
Elongation at Break	ASTM D 2671	200% Min.	> = 250%
Secant modulus	ASTM D 2671	130 Max	< = 100
<b>Chemical Properties</b>			
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%
<b>Electrical Properties</b>			
Voltage Rating		n.a. (600V)	Pass
Volume Resistivity	ASTM D876	1x10 <sup>12</sup> Ohm-cm Min.	> = 6x10 <sup>13</sup> Ohm-cm
Dielectric Strength	ASTM D876	19.6KV/mm Min.	> = 25KV/mm



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Properties (Continued)	Test Method	Standard Requirements	Typical Value
<b>Safety Properties</b>			
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. la (300°C)&lb (250°C)	Pass ( >354°C) Pass both
Smoke Index	NES 711	10.0 max.	8.4
Smoke Emission Test	BS 6853 (1996) Annex D	A <sub>0</sub> < 0.017 m <sup>2</sup> /g	0.0044 m <sup>2</sup> /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
<b>Test Fluid for Fluid Resistance</b>			
(23°C x 24h)	SAE-AMS-DTL-23053		
Tensile Strength	ASTM D 638	4.13 MPa min.	≥ 6.7 MPa
Elongation	ASTM D 638	100% min.	≥ 360%

**Applicable Specification**

LUL: London Underground Limited, Eng.Stand.

SAE-AMS-DTL-23053

BS 6853

BS EN ISO 4589-3

Japanese std for railway vehicle material

SFP (SUMTOMO) std

**DIMENSION TABLE**

Standard Colours: Black  
Standard Packaging: Spools in boxes  
Standard Sizes and Quantities:

Type/Size (mm)	Inside Diameter (mm)		Wall Thickness Recovered (nom.)	Quantity per spool / Box (m)
	Expanded (min.)	Recovered (max.)		
1.5/0.5	1.50	0.50	0.50	300/900
3/1	3.00	1.00	0.60	150/900
6/2	6.00	2.00	0.70	60/300
9/3	9.0	3.00	0.80	60/300
12/4	12.0	4.00	0.85	60/300
18/6	18.0	6.00	1.00	60/180
24/8	24.0	8.0	1.20	60/180
40/13	40.0	13.0	1.25	30/90

Non standard colours are available upon request



