



**Registration No.** 97

**Title** Sumitube NH and NH(TW)-Thin wall version Heat Shrink Tubing

**Status** Authorised For Use

**Supersedes ProductID** N/A

**Superseded By ProductID** N/A

**Date Authorised for Use** 21 Apr 2011

**Primary Use** NH - Heat shrink tubing for sleeving cables and cores in electrical installations in stations, tunnels or rolling stock.  
NH (TW) - Thin wall printable heat shrink tubing for marker sleeves to identify cables and cores in electrical installations in stations and tunnels.

**Additional Info/KeyWords** Comply with LU Standard 1-085 'Fire Safety Performance of Materials' and, hence, is acceptable for below ground installations. These are available in standard phase and a range of other colours. Manufacturer: Sumitomo Electric Schrumpf-Produkte GmbH, Germany. UK Supplier: Sumitomo Electric, Shrink Products, 3 Sutton Park, Blunsdon, Swindon, SN26 7BA. Tel: 01452 812511. See Entry No. 96 for Sumitube W3NH which has an inner wall of hot melt adhesive and Entry No. 98 for composite Joint Installation details.

**Classification Hierarchy** Electrical

**Manufactured By** Sumitomo Electric Shrink Products

**Requirements**

ReqID	Requirement	Status	Trial
No records to display.			

**Conditions**

Description	Linked To ReqID
Install according to the manufacturer's instructions. See Entry No. 98 for further details.	

**Evidence**

EvidenceText	EvidenceType	FileName	Linked To ReqID
Technical data sheet: Sumitube NH	User Guide	tds NH 051105.pdf	
Technical data sheet: Sumitube NH(TW) (Thin Wall)	User Guide	tds NH(TW) 051105-01.pdf	
A review of fire performance data.	Consultation	Lett0594.pdf	

Refer to Web site [www.lu-apr.co.uk](http://www.lu-apr.co.uk) to check current status, download attachments and for details of other products.



## TECHNICAL DATA SHEET

SUMITUBE<sup>®</sup> NH(TW)

Page: 1/2

**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

<b>Properties</b>	Test Method	Standard Requirements	Typical Value
Referring Size 3/4" Shrink Ratio 2:1			
<b>Thermal Properties</b>			
Continuous Operating Temperature	IEC 216	-40°C to +105°C	
Min. Shrink Temperature for Full Recovery Shrinking starts at		+115°C +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
<b>Physical Properties</b>			
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
<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
Dielectric Voltage Withstand (2.5kV x 60sec.)	UL 224	n.a. (no breakdown)	Pass
Volume Resistivity	ASTM D876	10 <sup>12</sup> Ohm-cm Min.	3.1x10 <sup>13</sup> Ohm-cm
Dielectric Strength	ASTM D876	19.7kV/mm Min.	20KV/mm



## TECHNICAL DATA SHEET

SUMITUBE<sup>®</sup> NH(TW)

Page: 2/2

(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. 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 <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 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  
 BS 6853  
 BS EN ISO 4589-3  
 Japanese std for railway vehicle material  
 SFP (SUMITOMO) std

**DIMENSION TABLE**

Standard Colours: Black  
 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

Non standard colours are available upon request