

## LR Type Approval Certificate Extension

This is to certify that Certificate No. 95/00134(E1) for the undernoted products is extended and renumbered as shown.

This certificate is issued to:

<b>PRODUCER</b>	Tyco Electronics
<b>PLACE OF PRODUCTION</b>	Raychem Products 300 Constitution Drive Menlo Park CA 94025 United States of America
<b>DESCRIPTION</b>	Raychem flame-retardant heat-shrinkable tubing with or without adhesive sealing.
<b>TYPES</b>	SST-FR, HRSR-FR, HRHF-FR, BSTS-FR and HF-FR
<b>APPLICATION</b>	Marine, offshore and industrial applications
<b>SPECIFIED STANDARDS</b>	IEC60332-1 ASTM D876
<b>SPECIFICATIONS</b>	Temperature rating: Operating temperature range: -55°C to +90°C Minimum recovery temperature: +120°C Voltage rating: 1000V  See also sheets 2 to 5

<b>Certificate No.</b>	95/60134(E2)
<b>Issue Date</b>	17 December 2002
<b>Expiry Date</b>	23 October 2005
<b>Sheet</b>	1 of 5

  
J. Croston

# Lloyd's Register

Type SST-FR flame-retardant adhesive-sealing heat-shrinkable tubing.

Part number reference:

Example	SST	-48	-07	M	/FR	/97	/RED	/NM
Description	Product family	Length	Size	Medium wall thickness designation	Flame-retardant tubing designation	Pre-coat adhesive/sealant options	Colour	Options
Options		For 03-04: 30 inches  For 07 to 45: 48 inches	See table	Leave blank when not applicable		/97 - hot melt adhesive  /226 - mastic sealant	Black (standard - leave blank) Other colors special order: /RED /WHI	NM - No mark

Product dimensions (in (mm)):

Size	As supplied	Recovered	
	Inside diameter minimum (D)*	Inside diameter maximum (d)	Wall thickness nominal (W)
-03	0.30 (8)	0.10 (3)	0.06 (1.5)
-04	0.40 (10)	0.15 (4)	0.06 (1.5)
-07M	0.75 (19)	0.22 (6)	0.06 (1.5)
-07	0.75 (19)	0.22 (6)	0.10 (2.5)
-11M	1.10 (28)	0.375 (10)	0.11 (2.8)
-11	1.10 (28)	0.375 (10)	0.12 (3.0)
-13M	1.30 (33)	0.375 (10)	0.11 (2.8)
-13	1.30 (33)	0.375 (10)	0.12 (3.0)
-15M	1.50 (38)	0.50 (13)	0.12 (3.0)
-15	1.50 (38)	0.50 (13)	0.14 (3.6)
-17M	1.70 (43)	0.50 (13)	0.12 (3.0)
-17	1.70 (43)	0.50 (13)	0.14 (3.6)
-20M	2.00 (51)	0.75 (19)	0.12 (3.0)
-20	2.00 (51)	0.75 (19)	0.16 (4.1)
-27	2.70 (69)	0.90 (23)	0.16 (4.1)
-30	3.00 (76)	1.25 (32)	0.16 (4.1)
-40	4.00 (102)	1.75 (44)	0.16 (4.1)
-45	4.50 (114)	1.75 (44)	0.16 (4.1)

\* When specifications call for coated tubing, reduce allowed minimum inside diameter by 0.10 inch to allow for sealant thickness.

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Lloyd's Register North America, Inc.  
 1401 Enclave Parkway, Suite 200, Houston, Texas, 77077, USA

THE TERMS AND CONDITIONS OVERLEAF APPLY

# Lloyd's Register

Type HRSR-FR flame-retardant high-ratio semi-rigid heat-shrinkable tubing with or without adhesive.  
 Type HRSF-FR flame-retardant high-ratio flexible heat-shrinkable tubing with or without adhesive.

Part number reference:

<b>Example</b>	HR	SR	-125	FR	-10	/97	/NM
<b>Description</b>	Product family	Material type	Size	Flame-retardant material designation	Length	Pre-coat adhesive/sealant options	Options
<b>Options</b>		SR: Semi-rigid HF: High-flex	See table below		Standard: 10 inches	/97 - hot melt adhesive /226 - sealant	NM - No mark

Product dimensions (in (mm)):

Size	As supplied	Recovered	
	Inside diameter minimum (D)*	Inside diameter maximum (d)	Wall thickness nominal (W)
-060	0.60 (15)	0.15 (4)	0.06 (1.5)
-125	1.25 (32)	0.24 (6)	0.06 (1.5)
-175	1.75 (44)	0.32 (8)	0.10 (2.5)
-200	2.00 (51)	0.38 (10)	0.11 (2.8)
-250	2.50 (64)	0.50 (13)	0.12 (3.0)
-300	3.00 (76)	0.75 (19)	0.12 (3.0)
-400	4.00 (102)	0.90 (23)	0.14 (3.6)

\* When specifications call for coated tubing, reduce allowed minimum inside diameter by 0.10 inch to allow for sealant thickness.

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Lloyd's Register

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 1401 Enclave Parkway, Suite 200, Houston, Texas, 77077, USA

THE TERMS AND CONDITIONS OVERLEAF APPLY

Type BSTS-FR general purpose flame-retardant heat-shrinkable tubing.


Part number reference:

Example	BSTS	-07	M	X25	FR	/RED	/NM
Description	Product family	Size	Medium wall thickness designation	Length	Flame-retardant tubing designation	Colour	Options
Options		See table	Leave blank when not applicable	In feet, Standard: 4 feet and 25 feet		Black (standard - leave blank) Other colors special order: /RED /WHT	NM - No mark

Product dimensions (in (mm)):

Size	As supplied	Recovered	
	Inside diameter minimum (D)	Inside diameter maximum (d)	Wall thickness nominal (W)
-03	0.30 (8)	0.10 (3)	0.06 (1.5)
-04	0.40 (10)	0.15 (4)	0.06 (1.5)
-07M	0.75 (19)	0.22 (6)	0.06 (1.5)
-07	0.75 (19)	0.22 (6)	0.10 (2.5)
-11M	1.10 (28)	0.38 (10)	0.11 (2.8)
-11	1.10 (28)	0.38 (10)	0.12 (3.0)
-13M	1.30 (33)	0.38 (10)	0.11 (2.8)
-13	1.30 (33)	0.38 (10)	0.12 (3.0)
-15M	1.50 (38)	0.50 (13)	0.12 (3.0)
-15	1.50 (38)	0.50 (13)	0.14 (3.6)
-17M	1.70 (43)	0.50 (13)	0.12 (3.0)
-17	1.70 (43)	0.50 (13)	0.14 (3.6)
-20M	2.00 (51)	0.75 (19)	0.12 (3.0)
-20	2.00 (51)	0.75 (19)	0.16 (4.1)
-27	2.70 (69)	0.90 (23)	0.16 (4.1)
-30	3.00 (76)	1.25 (32)	0.16 (4.1)
-35	3.50 (89)	1.25 (32)	0.16 (4.1)
-40	4.00 (102)	1.75 (44)	0.16 (4.1)
-45	4.50 (114)	1.75 (44)	0.16 (4.1)

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Type HF-FR flame-retardant high flex heat-shrinkable tubing.

Part number reference:

Example	HF	-11	FR	-25
Description	Product family	Size	Flame-retardant tubing designation	Length
Options		See table below		Standard: 4 feet and 25 feet

Product dimensions (in (mm)):

Size	As supplied	Recovered	
	Inside diameter minimum (D)	Inside diameter maximum (d)	Wall thickness nominal (W)
-04	0.40 (10)	0.15 (4)	0.06 (1.5)
-07	0.75 (19)	0.22 (6)	0.06 (1.5)
-11	1.10 (28)	0.38 (10)	0.11 (2.8)
-13	1.30 (33)	0.38 (10)	0.11 (2.8)
-15	1.50 (38)	0.50 (13)	0.12 (3.0)
-17	1.70 (43)	0.50 (13)	0.12 (3.0)
-20	2.00 (51)	0.75 (19)	0.14 (3.6)
-27	2.70 (69)	0.90 (23)	0.16 (4.1)

"This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify LR of any modification or changes to the equipment in order to obtain a valid certificate."

The attached Design Appraisal Document No. 95/60134(E2) and its supplementary Type Approval Terms and Conditions form part of this Certificate.

All other details remain as the previous Certificate No. 95/00134(E1) to which this extension should be attached

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