

# DERAY®-I 3000

Thin wall crosslinked polyolefin

High shrink ratio, multiple specifications flexible heat shrink tubing with excellent physical and mechanical properties.



## Features and Benefits

- Self-extinguishing (colors only)
- Flexible
- High shrink ratio
- Resistant to common fluids and solvents
- Additionally available in RAL2003 orange color
- Shrink ratio: 3:1
- Continuous operating temperature: -55°C to 135°C
- Shrink temperature: 90°C min.

- ECSS-Q-ST-70-02
- Approved to major automotive OEM specifications
- Fiat 91992

## Typical Applications

- Electrical insulation of in-line splices
- Strain relief of terminals
- Color coding of electronic components
- Insulation and protection of objects with large diameter variations

## Standards

- UL 224 125C ATF - UL file # E107857 (colors only)
- CSA 22.2 No 198.1 125C - CSA file # 065789\_0\_000 (colors only)
- DEF STAN 59-97 Type 2b
- BS G198 Part 3 Type 11B
- VG95343 Part 5 Type A/B
- CNES approved and listed in Matrex database

# 3:1

Shrink ratio

# -55°C - 135°C

(-67°F to 275°F)

Continuous operating temperature

## Markets:

Automotive, Aerospace, Defense, Industrial, Mass transit

## Standards:



# DERAY®-I 3000

ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS		
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL*	MINI-SPOOL	LENGTHS
	<i>mm (in)</i>	<i>mm (in)</i>	<i>mm (in)</i>	<i>m (ft)</i>	<i>m (ft)</i>	1.22 m (48 in)
0063	1.6 (1/16)	0.5 (0.020)	0.45 (0.018)	300 (984)	150 (492)	25
0125	3.2 (1/8)	1.0 (0.039)	0.55 (0.022)	300 (984)	150 (492)	25
0187	4.8 (3/16)	1.5 (0.059)	0.60 (0.024)	300 (984)	75 (246)	25
0250	6.4 (1/4)	2.0 (0.079)	0.65 (0.026)	300 (984)	75 (246)	25
0375	9.5 (3/8)	3.0 (0.118)	0.75 (0.030)	150 (492)	75 (246)	25
0500	12.7 (1/2)	4.0 (0.157)	0.75 (0.030)	100 (328)	50 (164)	25
0750	19.0 (3/4)	6.0 (0.236)	0.85 (0.033)	50 (164)	30 (98)	10
1000	25.4 (1)	8.0 (0.315)	1.00 (0.039)	50 (164)	30 (98)	10
1500	38.0 (1 1/2)	13.0 (0.512)	1.15 (0.045)	50 (164)	30 (98)	-

Clear items not UL listed.

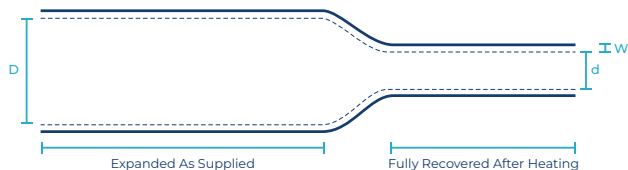
\*Delivery unit spool only available for black items

## Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK), red (RD), white (WT), clear (CL), blue (BL), yellow (YL), orange (OE)
- Please specify the product name, order number and options you require:
  - Example: DERAY®-I 3000, 0375 or 9/3 in, black

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



# DERAY®-I 3000 colored

## Technical data

PROPERTY	CURRENT VALUES	TEST METHODS
<b>MATERIAL</b>		
Material	PE, modified; free of lead, silicone and cadmium	n/a
Surface	matt	n/a
Specific gravity	1.3 g/cm <sup>3</sup> max.	ASTM-D 792, A-I
Shrink ratio	3:1	n/a
Longitudinal shrinkage	-10% max.	ASTM-D 882
<b>MECHANICAL</b>		
Tensile strength	17 MPa	IEC 60684-2
Elongation	500%	IEC 60684-2
Secant modulus	175 MPa max.	ASTM-D 882
<b>THERMAL</b>		
Tensile strength after thermal ageing (168 h at 158°C)	13 MPa	UL 224
Elongation after thermal ageing (168 h at 158°C)	300%	UL 224
Tensile strength after thermal shock (4 h at 200°C)	15 MPa	IEC 811-1-2
Elongation after thermal shock (4 h at 200°C)	480%	IEC 811-1-2
Cold bend test	does not break at -55°C	ASTM-D 2671 Meth. C
Combustion behaviour	selfextinguishing	UL 224
Shrink temperature	90°C min.	n/a
Storage temperature	50°C max.	n/a
Continuous operating temperature	-55°C to 135°C	IEC 216
<b>CHEMICAL</b>		
Corrosive action	non-corrosive	ASTM-D 2671 Meth. A
Compatibility with copper	non-corrosive	ASTM-D 2671 Meth. B
Resistance against chemicals	good	n/a
Water absorption	0.20%	VDE 0473
<b>ELECTRICAL</b>		
Dielectric strength	24 kV/mm	VDE 0303 Part 2
Spec. volume resistivity	10 <sup>16</sup> Ω x cm	VDE 0303 Part 3

# DERAY®-I 3000 transparent

## Technical data

PROPERTY	CURRENT VALUES	TEST METHODS
<b>MATERIAL</b>		
Material	PE, modified, free of lead, silicon, cadmium and halogen free	n/a
Surface	matt	n/a
Specific gravity	1.0 g/cm <sup>3</sup> max.	ASTM-D 792, A-I
Shrink ratio	3:1	n/a
Longitudinal shrinkage	-10% max.	ASTM-D 2671
<b>MECHANICAL</b>		
Tensile strength	20 MPa	IEC 60684-2
Elongation	550%	IEC 60684-2
Secant modulus	175 MPa max.	ASTM-D 882
<b>THERMAL</b>		
Tensile strength after thermal ageing (168 h at 158°C)	18 MPa	UL 224
Elongation after thermal ageing (168 h at 158°C)	500%	UL 224
Tensile strength after thermal shock (4 h at 200°C)	19 MPa	IEC 811-1-2
Elongation after thermal shock (4 h at 200°C)	no cracking or dripping	IEC 811-1-2
Cold bend test	does not break at -55°C	ASTM-D 2671 Meth. C
Combustion behaviour	passed	FMVSS 302
Shrink temperature	90°C min.	n/a
Storage temperature	40°C max.	n/a
Continuous operating temperature	-55°C to 135°C	IEC 216
<b>CHEMICAL</b>		
Corrosive action	non-corrosive	ASTM-D 2671 Meth. A
Compatibility with copper	non-corrosive	ASTM-D 2671 Meth. B
Resistance against chemicals	good	n/a
Water absorption	0.2% max.	VDE 0473
<b>ELECTRICAL</b>		
Dielectric strength	24 kV/mm	VDE 0303 Part 2
Spec. volume resistivity	10 <sup>16</sup> Ω x cm	VDE 0303 Part 3