QR3, QRA3

RoHS Compliant

HEAVY WALL POLYOLEFIN TUBING WITH OR WITHOUT HOT MELT ADHESIVE
SHRINK RATIO 3:1

Features/Applications
QR3 has properties of excellent insulation, environmental sealing and resistance to impact and abrasion. Designed for applications to seal and protect electrical and communication connections. Provides excellent mechanical protection to cable joints and terminations. 3:1 shrink ratio allows it to easily fit over irregular shapes and large connectors.

QRA3 is recommended for applications with light cable and wire harnesses that require waterproofing and protection of connector components and encapsulates and seals components within the tubing.

- Operating temperature: -55°C to +110°C
- Full recovery temperature: 120°C
- Standard color: Black, red
- RoHS Compliant
- Resistant to UV radiation
- High electrical insulation
- Superior mechanical property

Technical Data

Property	Test Method	Typical Data
Operating Temperature	IEC 216	-55°C TO +110°C
Tensile Strength	ASTM D 2671	≥ 14 MPa
Tensile Strength After Aging (150°C, 168hrs.)	ASTM D 2671	≥ 12MPa
Elongation at Break	ASTM D 2671	≥ 400%
Elongation at Break After Aging (150°C, 168hrs.)	ASTM D 2671	≥ 300%
Density	ASTM D 792	1.05g/cm^3
Longitudinal Shrinkage	UL 224	0 to -10%
Dielectric Strength	IEC 243	≥ 20kV/mm
Volume Resistance	IEC 93	≥ 10^{14} Ω.cm
Eccentricity	ASTM D 2671	< 30%
Copper Stability	ASTM D 2671	Pass
Resistance to Stress Cracking (50°C)	ASTM D 1693	No cracking
Water Absorption (23°C, 4days)	ISO 62	< 0.15%

Thermoplastic Adhesive for QRA3

Property	Test Method	Typical Data
Water Absorption	ISO 62	<0.2%
Softening Point	ASTM D E28	85°C
Peel Strength (PE)	DIN 30672	4N/cm
Copper Stability	ASTM D 2671	Non-corrosive
Resistance to Fungus and Decay	ISO 846	Pass

Notes:
1. * See Part Number Guide for standard packaging codes.
2. Special sizes, packaging, colors and cut pieces are available upon request.

Product Dimensions

Size (mm)	As Supplied (mm)	After Recovered (mm)		Tubing Shape	Standard Packaging
	Inside Diameter (min.)	Inside Diameter (max.)	Wall Thickness (min.)		Cut to Length Pcs. *(QB) Qty per bag
					48"
QRA3, Heavy Wall Tubing With Hot-Melt Adhesive					
9/3	9	3	1.8	Round	20
13/4	13	4	2.4	Round	20
22/6	22	6	2.7	Round	20
33/8	33	8	3.2	Round	20
40/12	40	12	4.1	Round	20
45/12	45	12	4.1	Round	15
55/16	55	16	4.1	Round	15
75/22	75	22	4.1	Round	15
85/25	85	25	4.3	Round	15
95/30	95	30	4.3	Round	15
105/30	105	30	4.3	Round	15
130/36	130	36	4.3	Flat	10
160/50	160	50	4.3	Flat	10
180/50	180	50	4.3	Flat	10
200/60	200	60	4.3	Flat	10
QR3, Heavy Wall Tubing Without Hot-Melt Adhesive					
9/3	9	3	1.8	Round	20
13/4	13	4	2.4	Round	20
22/6	22	6	2.7	Round	20
33/8	33	8	3.2	Round	20
40/12	40	12	4.1	Round	20
45/12	45	12	4.1	Round	15
55/16	55	16	4.1	Round	15
75/22	75	22	4.1	Round	15
85/25	85	25	4.3	Round	15
95/30	95	30	4.3	Round	15
105/30	105	30	4.3	Round	15
130/36	130	36	4.3	Flat	10
160/50	160	50	4.3	Flat	10
180/50	180	50	4.3	Flat	10
200/60	200	60	4.3	Flat	10