

Introducing
RW-175

Highly flame-resistant, high-temperature, chemical-resistant RW-175 tubing provides tough, semirigid, very-thin-wall insulation and strain relief of multipin connectors, solder joints and other delicate electrical connections and terminations. It is well-suited for applications that require dense packing of components or visual inspection of covered components. It is especially suitable for applications requiring outstanding abrasion and cut-through resistance and superior chemical and solvent resistance. Its high temperature performance meets or exceeds military and industrial standards. RW-175 meets NASA outgassing requirements making it suitable for use in space applications such as satellites.

KEY FEATURES

- 2:1 shrink ratio for all standard sizes
- Tough, semirigid, very-thin-wall insulation
- High flame-resistance, meeting the requirements of AMS-DTL-23053, Test C, with UL and CSA VW-1 flammability rating
- High temperature performance that meets or exceeds military and industrial standards
- Protection from most industrial solvents, fuels, and chemicals
- Available in several “microtubing” sizes for applications requiring recovered I.D.’s as small as .007” (0.178mm)
- Meets NASA outgassing requirements
- Offers improved clarity (clear version) and increased resistance to crazing when compared to previously offered solutions

APPLICATIONS

- Appliances
- Military and commercial aircraft
- Satellites
- Commercial electronics and communication
- Industrial equipment

ELECTRICAL

- Provides excellent electrical insulation
- Not recommended for use as a primary insulator at temperatures exceeding 135°C [275°F]

MECHANICAL

- Tough modified polyvinylidene fluoride material provides outstanding abrasion and cut-through resistance
- Excellent for strain relief when installed on delicate electrical connections and terminations

TEMPERATURE RATING

- Full recovery temperature: 175°C [347°F]
- Operating Temperature range: -55°C to 175°C [-67°F to 347°F]

STANDARDS AND SPECIFICATIONS

- RW-3029/2
- RW-175 Microtubing SCD
- SAE-AMS-DTL-23053/8
- UL 224 VW-1
- CSA C22.2 No. 198.1-98 VW-1

ORDERING INFORMATION

- Color: Clear (-X) (standard); Black (-0) (nonstandard)
- Standard packaging (-STK): 1.2m [4 ft.] lengths
  Optional packaging (-SP): Spool, varying lengths (consult TE for details)
- Ordering description: Specify product name, size, and color; for example, RW-175-3/16-X.

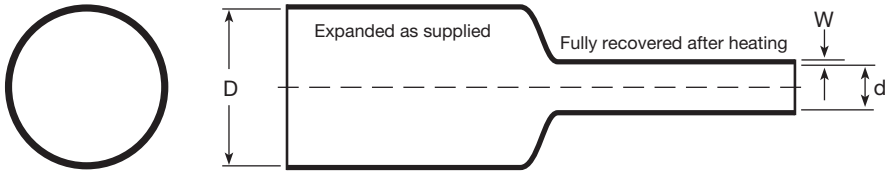
SAMPLES NOW AVAILABLE

te.com/products/RW-175

TE connectivity

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RW-175 DIMENSIONS



Size	Minimum Expanded I.D. (D)		Maximum Recovered I.D. (d)		Nominal Recovered Jacket Wall (W)	
	in.	mm.	in.	mm.	in.	mm.
3/64	.046	1.17	.023	.58	.010 ± .002	.25 ± .051
1/16	.063	1.60	.031	.79	.010 ± .002	.25 ± .051
3/32	.093	2.36	.046	1.17	.010 ± .002	.25 ± .051
1/8	.125	3.18	.062	1.58	.010 ± .002	.25 ± .051
3/16	.187	4.75	.093	2.36	.010 ± .002	.25 ± .051
1/4	.250	6.35	.125	3.18	.013 ± .002	.33 ± .051
3/8	.375	9.53	.187	4.75	.013 ± .002	.33 ± .051
1/2	.500	12.70	.250	6.35	.013 ± .002	.33 ± .051
3/4	.750	19.05	.375	9.53	.017 ± .003	.43 ± .076
1	1.000	25.40	.500	12.70	.019 ± .003	.48 ± .076
1-1/2	1.500	38.10	.750	19.05	.020 ± .003	.51 ± .076
2	2.000	50.80	1.000	25.40	.020 ± .003	.51 ± .076

RW-175 ORDERING DESCRIPTION

Example 1:

RW-175-3/8-X-STK

- STK — 1.2m [4 ft.] Length
- X — Color is Clear
- 3/8 — Size
- RW-175 — Semirigid, Very Thin Wall Product

Example 2:

RW-175-3/4-0-SP

- SP — Spool Packaging
- 0 — Color is Black
- 3/4 — Size
- RW-175 — Semirigid, Very Thin Wall Product

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PRODUCT OFFERING

Material Description	Material Number
RW-175-3/64-X-STK	CV3299-000
RW-175-3/64-X-SP	CV3270-000
RW-175-3/64-0-STK	CV3331-000
RW-175-3/64-0-SP	CV3269-000
RW-175-1/16-X-STK	CV3300-000
RW-175-1/16-X-SP	CV3257-000
RW-175-1/16-0-STK	CV3322-000
RW-175-1/16-0-SP	CV3256-000
RW-175-3/32-X-STK	CV3301-000
RW-175-3/32-X-SP	CV3267-000
RW-175-3/32-0-STK	CV3329-000
RW-175-3/32-0-SP	CV3266-000
RW-175-1/8-X-STK	CV3302-000
RW-175-1/8-X-SP	CV3262-000
RW-175-1/8-0-STK	CV3325-000
RW-175-1/8-0-SP	CV3261-000
RW-175-3/16-X-STK	CV3303-000
RW-175-3/16-X-SP	CV3265-000
RW-175-3/16-0-STK	CV3328-000
RW-175-3/16-0-SP	CV3264-000
RW-175-1/4-X-STK	CV3304-000
RW-175-1/4-X-SP	CV3260-000
RW-175-1/4-0-STK	CV3324-000
RW-175-1/4-0-SP	CV3259-000
RW-175-3/8-X-STK	CV3305-000

Material Description	Material Number
RW-175-3/8-X-SP	CV3272-000
RW-175-3/8-0-STK	CV3332-000
RW-175-3/8-0-SP	CV3271-000
RW-175-1/2-X-STK	CV3306-000
RW-175-1/2-X-SP	CV3258-000
RW-175-1/2-0-STK	CV3323-000
RW-175-3/4-X-STK	CV3307-000
RW-175-3/4-X-SP	CV3268-000
RW-175-3/4-0-STK	CV3330-000
RW-175-1-X-STK	CV3308-000
RW-175-1-X-SP	CV3263-000
RW-175-1-0-STK	CV3326-000
RW-175-1-1/2-X-STK	CV3309-000
RW-175-1-1/2-0-STK	CV3327-000
RW-175-2-X-STK	CV3310-000
RW-175-030-X-SP†	CV3281-000
RW-175-NO.1-X-SP†	CV3293-000
RW-175-NO.2-X-SP†	CV3294-000
RW-175-NO.13-X-SP†	CV3291-000
RW-175-NO.14-X-SP†	CV3292-000
RW-175-NO.33-X-SP†	CV3296-000
RW-175-NO.33-0-SP†	CV3295-000
RW-175-NO.65-X-SP†	CV3298-000
RW-175-NO.65-0-SP†	CV3297-000

† RW-175 microtubing is available in 0.014-0.045 in. (.356-1.143 mm) dia. Consult TE for complete details.

SAMPLE INVENTORY

RW-175-3/64-X-STK
RW-175-1/16-X-STK
RW-175-3/32-X-STK
RW-175-1/8-X-STK
RW-175-3/16-X-STK
RW-175-1/4-X-STK
RW-175-3/8-X-STK
RW-175-1/2-X-STK
RW-175-3/4-X-STK
RW-175-1-X-STK
RW-175-1-1/2-X-STK
RW-175-NO.1-X-SP
RW-175-NO.33-X-SP

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PROPERTY REQUIREMENTS

Property	Unit	Requirement	Test Method
PHYSICAL			
Dimensions	Inch (mm)	Table 1	RW-3029/2, Section 4.3.1
Longitudinal Change	Percent	+0, -10 maximum	ASTM D 2671
Tensile Strength	psi (MPa)	5000 minimum (34.5)	RW-3029/2, Section 4.3.2
Ultimate Elongation	Percent	150 minimum	ASTM D 2671
Secant Modulus (expanded)	psi (MPa)	1 x 10^5 minimum (690)	ASTM D 2671
Specific Gravity		1.8 maximum	ASTM D 2671
Low Temperature Flexibility 4 hours at -55°C ± 2°C (-67 ±4°F)		No cracking	RW-3029/2, Section 4.3.3
Heat Shock 4 hours at 300 ± 5°C (572 ± 9°F)		No dripping, flowing or cracking	RW-3029/2, Section 4.3.4
Heat Resistance 168 hours at 250 ± 5°C (482 ± 9°F) Followed by test for:			RW-3029/2, Section 4.3.5
Ultimate elongation	Percent	50 minimum	ASTM D 2671
Vacuum Outgasing			ASTM E 595
TML (Total Mass Loss)	Percent	1.0 maximum	
VCM (Volatile Condensible Material)	Percent	0.1 maximum	
ELECTRICAL			
Dielectric Strength	V/mil (kV/mm)		ASTM D 2671
Sizes 3/64 through 12		800 minimum (31,500)	
Sizes 3/4 through 2		600 minimum (2,600)	
Volume Resistivity	Ohm-cm	1 X 10^{13} minimum	ASTM D 2671
CHEMICAL			
Corrosive Effect Copper Mirror 16 hours at 150°C		Noncorrosive	RW-3029/2, Section 4.3.6.1 ASTM D 2671, Proc. A
Copper Contact 168 hours at 175 ± 3°C (347 ± 5°F) Followed by test for:		No pitting or blackening of copper	RW-3029/2, Section 4.3.6.2 ASTM D 2671, Proc. B
Ultimate Elongation	Percent	100 minimum	RW-3029/2, Section 4.3.2
Flammability			ASTM D 2671, Proc. A
Average Time of Burning	Seconds	15 maximum	
Fungus Resistance			ISO 846, Method B
Followed by tests for:			
Tensile Strength	psi (Mpa)	5000 minimum (34.5)	RW-3029/2, Section 4.3.2
Ultimate Elongation	Percent	150 minimum	ASTM D 2671
Dielectric Strength	Volts/mil (volts/mm)		ASTM D 2671
Sizes 3/64 through 1/2		800 minimum (31,500)	
Sizes 3/4 through 2		600 minimum (23,600)	
Water Absorption 24 hours at 23 ± 3°C (73 ± 5°F)	Percent	0.5 maximum	ASTM D 2671
Fluid Resistance 24 hours at 23 ± 3°C (73 ± 5°F) JP-4 Fuel (MIL-T-5624) SKYDROL 500 Hydraulic Fluid (MIL-H-5606) Aviation Gasoline 100/130 (MIL-G-5572) Salt Water (5% salt) Anti-icing Fluid (MIL-A-8243) Lubricating Oil (MIL-L-7808) Followed by tests for:			RW-3029/2, Section 4.3.7
Dielectric Strength	Volts/mil (Volts/mm)		ASTM D 2671
Sizes 3/64 through 1/2		700 minimum (27,600)	
Sizes 3/4 through 2		500 minimum (19,700)	
Tensile Strength	psi (MPa)	5000 minimum (34.5)	RW-3029/2, Section 4.3.2 ASTM D 2671

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