



## ROPES AND TADPOLES

### DOOR SEAL AND GASKET MATERIAL

Pyrotek offers many asbestos-free ropes and tadpoles that provide optimal seals, and minimize downtime, energy loss and maintenance costs. Many of the following products are available exclusively from Pyrotek and can be fabricated to meet temperature resistance, size, density and wear resistance project requirements.

#### BENEFITS

- Asbestos-free and refractory ceramic fibre free materials available
- Air seal and abrasion resistance coatings
- Custom designed tadpoles
- Durable Pyrotherm STS stainless steel or Inconel® mesh jackets
- Reduces energy costs

#### HEALTH AND SAFETY

Prior to use, refer to the product safety datasheet for proper handling and required personal protective equipment.



#### APPLICATIONS

- Burners
- Collector bars
- Crucible lids
- Doors
- Flues
- Furnaces
- Ladles
- Port plugs
- Pot lids
- Side mains



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### ROPE SPECIFICATIONS

Rope	Specification	Cross Section Dimensions	Maximum Temperature	Density	Abrasion Resistance	Compression and Recall
A-1	Compressible, inexpensive rope. Glass fibre core with a heavy gauge glass fabric jacket. Loses tensile strength above 340°C (644°F) but remains intact.	1.5–51 mm (0.06–2 in) diameter	540°C (1004°F)	800 kg/m <sup>3</sup> (50 lb/ft <sup>3</sup> )	Good	Good
A-2	A-1 substitute fiberglass rope.	1.5–51 mm (0.06–2 in) diameter	540°C (1004°F)	640 kg/m <sup>3</sup> (40 lb/ft <sup>3</sup> )	Good	Good
Braided Silica Rope	Braided glass fibre rope with boosted thermal performance that serves as compressible seals and fillers.	3.17–25.4 mm (0.12–1 in) diameter	982°C (1800°F)	608 kg/m <sup>3</sup> (38 lb/ft <sup>3</sup> )	Good	Good
D-1	A-1 rope with silicone coating that increases abrasion resistance and air sealing properties.	1.5–51 mm (0.06–2 in) diameter	540°C (1004°F)	960 kg/m <sup>3</sup> (60 lb/ft <sup>3</sup> )	Excellent	Good
F-10	Silicone core with a double jacket of heavy gauge fibreglass cloth. Completely silicone coated.	13, 25, 38, 51 mm (0.5, 1, 1.5, 2 in) square	425°C (797°F)	1538 kg/m <sup>3</sup> (96 lb/ft <sup>3</sup> )	Good	Good
J-1	Available in braided or twisted forms. Excellent tensile strength and abrasion resistance. Low thermal conductivity.	6–51 mm (0.25–2 in) diameter	1260°C (2300°F)	432 kg/m <sup>3</sup> (27 lb/ft <sup>3</sup> )	Excellent	Fair
J-9	Square ceramic rope.	6 x 6 mm (0.25 x 0.25 in) 51 x 51 mm (2 x 2 in)	1315°C (2400°F)	1090 kg/m <sup>3</sup> (68 lb/ft <sup>3</sup> )	Excellent	Fair
KF-40	A dense rope with a solid fibreglass core and a tightly woven Kevlar® jacket. Very abrasion resistant and does not expel fibres quickly.	6–12 mm (0.25–0.5 in) diameter	425°C (797°F)	785 kg/m <sup>3</sup> (49 lb/ft <sup>3</sup> )	Excellent	Excellent
R-3	Dense, solid, square braided glass rope. Works well in harmful and abrasion conditions.	6–51 mm (0.25–2 in) square	540°C (1004°F)	1250 kg/m <sup>3</sup> (78 lb/ft <sup>3</sup> )	Good	Good
R-3C	R-3 rope with silicone coating to increase abrasion resistance and air sealing properties.	6–51 mm (0.25–2 in) square	540°C (1004°F)	1410 kg/m <sup>3</sup> (88 lb/ft <sup>3</sup> )	Excellent	Good



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### TADPOLE OUTER MATERIAL SPECIFICATIONS

Custom tadpoles are constructed from a combination of any rope or core material listed in the table and a fabric covering. Contact your Pyrotek sales engineer for additional alternatives.

Fiberseal Fabric	Description	Thickness	Maximum Temperature	Weight
H-10B	Ideal covering for high-temperature compressible gaskets.	1.3 mm (0.05 in)	1095°C (2003°F)	1355 kg/m <sup>2</sup> (278 lb/ft <sup>2</sup> )
S-1	Excellent mechanical strength and abrasion resistance. Low air permeability.	0.4 mm (0.02 in)	177°C* (351°F)	1271 kg/m <sup>2</sup> (260 lb/ft <sup>2</sup> )
S-2	Heavy-duty, flexible and soft.	2 mm (0.08 in)	177°C* (351°F)	745 kg/m <sup>2</sup> (153 lb/ft <sup>2</sup> )
T-20	Close woven fiberglass. Does not cause severe skin irritation. Lightweight, light-brown, chemical resistant fabric.	1.4 mm (0.06 in)	760°C (1400°F)	1084 kg/m <sup>2</sup> (222 lb/ft <sup>2</sup> )
V-5	Wear-resistant acid leached fiberglass. Heavy cloth.	1.4 mm (0.06 in)	1630°C (2966°F)	1285 kg/m <sup>2</sup> (263 lb/ft <sup>2</sup> )
Z-5	Fiberglass, coarse textile fiber. Woven fabric.	2 mm (0.08 in)	815°C (1500°F)	1185 kg/m <sup>2</sup> (242 lb/ft <sup>2</sup> )
Z-5C	Z-5 with proprietary red silicone coating on one side to provide an airtight covering while maintaining flexibility.	2.3 mm (0.09 in)	815°C (1500°F)	1525 kg/m <sup>2</sup> (312 lb/ft <sup>2</sup> )
Z-6W	Wire reinforced. This material is good for any area requiring abrasion-resistance.	2.3 mm (0.09 in)	815°C (1500°F)	1355 kg/m <sup>2</sup> (278 lb/ft <sup>2</sup> )
ZP2500	Splash guards, thick curtains, tadpoles, tapes.	3 mm (0.12 in)	1090°C (1995°F)	2032 kg/m <sup>2</sup> (416 lb/ft <sup>2</sup> )

\* Fabric strength retention is time and temperature based. Full tensile strength is maintained at continuous temperatures at or below 177°C (350°F), and at short spikes up to 260°C (500°F). At continuous temperatures above 177°C (350°F) the fabric's tensile strength decreases; a 50 percent decrease occurs after 250 hours at 204°C (400°F) or after 50 hours at 260°C (500°F). At temperatures above 427°C (800°F) the fabric decomposes rapidly.

### CORE MATERIAL SPECIFICATIONS

Cores	Description	Cross Section Dimensions	Maximum Temperature	Abrasion Resistance	Compression and Recall
Stainless Steel	Stainless steel mesh. Flat.	13–64 mm (0.5–2.5 in)	870°C (1598°F)	Excellent	Good
INCONEL Mesh	Flat mesh.	13–64 mm (0.5–2.5 in)	1095°C (2003°F)	Good	Good
Steel Mesh	Tube shaped.	13–64 mm (0.5–2.5 in)	870°C (1598°F)	Excellent	Good
Silicone Rubber	Custom-shaped profiles.	N/A	260°C (500°F)	Good	Good



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### TADPOLE SPECIFICATIONS

Tadpoles	Description	Cross Section Dimensions	Maximum Temperature	Density	Abrasion Resistance	Compression and Recall
A-1/S-1	A-1 glass fibre core with high abrasion-resistant S-1 fabric jacket and mounting flange.	Bulb to 51 mm (2 in) flange width as required.	260°C (500°F)	800 kg/m <sup>3</sup> (50 lb/ft <sup>3</sup> )	Excellent	Good
A-1/Z-5	A-1 rope core with a densely woven or wire reinforced glass cloth jacket and mounting flange.	Bulb diameter and flange width made to project specifications.	540°C (1004°F)	800 kg/m <sup>3</sup> (50 lb/ft <sup>3</sup> )	Good	Good
Mesh core/Z-6W	304 stainless steel mesh core with a wire reinforced, densely woven glass cloth jacket and mounting flange.	Bulb diameter and flange width made to project specifications.	540°C (1004°F)	190 kg/m <sup>3</sup> (12 lb/ft <sup>3</sup> )	Excellent	Excellent
Jacketed mesh core	304 stainless steel mesh core with a continuous fiberglass jacket. Used where mounting flanges are not required.	Bulb diameter and flange width made to project specifications.	540°C (1004°F)	190 kg/m <sup>3</sup> (12 lb/ft <sup>3</sup> )	Good	Excellent
Mesh core/V-5	INCONEL mesh core with a high-temperature or ceramic fibre jacket and mounting flange.	Bulb diameter and flange width made to project specifications.	1095°C (2003°F)	190 kg/m <sup>3</sup> (12 lb/ft <sup>3</sup> )	Fair	Excellent

