

TaoFibre[®] Ceramic Textiles

TaoFibre textile family includes ropes, braids, cloth, tapes, and sleeving. TaoFibre textiles are made from alumina-silica ceramic fiber, free of asbestos. These fiber materials can be used in different industrial applications under temperatures up to 2300 °F (1260 °C) and have excellent chemical stability and strong resistance to thermal shock and corrosion attack. Exceptions are hydrofluoric and phosphoric acids and concentrated alkalis. TaoFibre textiles also resist oxidation and reduction. If wet by water or steam, thermal properties are completely restored upon drying. No water of hydration is present.

TaoFibre textiles contain 15% organic carriers, which helps to establish physical formation of products. The carriers burn out at about 750 °F (400 °C). TaoFibre textiles also contain reinforcement insert materials of either inconel wire or continuous fiberglass filament to increase handling strength during installation and enhance fiber durability to rated temperatures of 2000°F (1093 °C) for inconel wire and 1200 °F (649 °C) for fiberglass filament.



In choosing the most appropriate product for a particular application, the following product descriptions should be considered:

Multi-Ply Twisted Ropes (Made from Wicking)

These ropes are produced by twisting multiple plies of ceramic fiber wicking together. Standard 3-ply twisted rope is relatively soft and low in density and is the most economical choice. HD 9-ply twisted rope provides increased compression resistance and strength and is much higher in density (about 50% denser) than 3-ply twisted rope. Both ropes are also available with covering of inconel wire mesh, which drastically increase resistance to mechanical abuse.

3-Ply Twisted Ropes (Made from Yarns)

This kind of rope is made by forming many strands of yarn into three separate plies, which are then twisted into a three-ply rope. This rope is slightly denser and more durable than the 3-ply twisted rope made from wicking.

Round and Square Braids

The highest density of all TaoFibre ropes, the round and square braids are produced by overbraiding around a core of ceramic fiber to achieve maximum resistance to mechanical abuse. In addition to its superior strength, round and square braids also exhibit minimal unraveling when cut.

Woven Cloth, Tape, and sleeving

TaoFibre cloth, tape, and sleeving are very durable and flexible fabrics. Insert materials of inconel wire and fiberglass filament are incorporated into the yarn to increase tensile strength of the fabrics both before and after exposure to heat. Typical applications for cloth, tapes, and sleeving include gaskets, seals, furnace and welding curtains or pipe wrapping.

Turn back for more specific product information.

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Typical Physical Properties

	Cloth	Tape	Square & Round Braided Ropes	Twisted Rope
Color.....	white	white	white	white
Width, (inch).....	36	1/2, 1, 2, 3, 4, 6	--	--
Normal Section or Diameters, (inch)	--	--	1/4, 3/8, 1/2, 5/8 3/4, 1, 1.25, 1.5, 2	1/4, 3/8, 1/2, 5/8 3/4, 1, 1.25, 1.5, 2
Normal thickness, (inch)	1/8	1/8	--	--
Density, pcf	--	--	33-36	20-33
Tensile strength grip, lb/f	63	58	110-150	75-100
Melting point, °F	3200	3200	3200	3200
Continuous use up to °F	2300 (wire) 2300 (glass)	2300 (wire) 2300 (glass)	2300	2300
Temperature Limit of Insert Material.....	2000 °F (wire) 1200 °F (glass)	2000 °F (wire) 1200 °F (glass)	--	--

Chemical Analysis (Nominal, % weight based after firing)

Alumina, Al ₂ O	47	47	47	47
Silica, SiO ₂	53	53	53	53
Boron Oxide, B ₂ O ₃	--	--	Trace	Trace
Calcium Oxide, CaO	--	--	Trace	Trace
Magnesium Oxide, MgO	--	--	Trace	Trace

Typical Applications for Ropes & Braids

- Furnace door insulation and seal
- Coke oven door jam seal
- Maintenance in aluminum plants, foundries, refineries and power plants
- Expansion joint packing
- Gasket for vacuum degassing of steel during pouring
- High temperature gasketing and packing
- Tadpole gasket bulb cord
- Expansion joint packing in boilers and furnaces
- Woodburning stove door seal
- Glass furnace truckstone seal
- Casting starter block plug

Typical Applications for Cloth, Tape, and Sleeving

- Gasket and wrapping material
- Pipe hanger insulation
- Welding curtains and blankets
- Fuel line insulation
- Furnace heat zone separators
- Exhaust hood curtains
- Cable and wire insulation
- Induction heating furnace coil insulation
- Infrared radiating diffusers
- High pressure steam portable flange covers

Refer to the Material Safety Data Sheet (MSDS) for recommended work handling and product safety information.

Above data are average results of tests conducted under standard procedures and are subject to variation. Results should not be used for specification purposes. The information, recommendation, and opinions set forth herein are offered solely for your consideration, inquiry and verification, and are not, in part or total, to be construed as constituting a warranty or representation for which we assume legal responsibility. Nothing contained herein is to be interpreted as authorization to practice patented invention without a license.