



## Material Data Sheet

**Item:** Vulcanized Fibre

**Tubes:** Vulcanized fibre tubing is similar in characteristics and general properties to sheet fibre. Tubes are manufactured by winding chemically treated paper on stainless steel mandrels to the desired wall thickness. They are then pured, dried, rolled and ground. This manufacturing process gives fibre tubing a slightly higher density than sheet fibre.

Vulcanized fibre tubes have good mechanical and dielectric strength, arc resistance, arc quenching characteristics, and excellent machining, forming and spinning qualities. They have many applications as fuse cartridges, plugs, insulators, liners, grommets, and bushings.

**Colors:** Grey, red, black

**Dimensions:** Length - approximately 2' long for inside diameters up to 3/8". Approximately 3' long for inside diameters over 3/8".

### Tubes Size Range

<u>I.D.</u>		<u>Wall Thickness</u>	
<u>From</u>	<u>To</u>	<u>From</u>	<u>To</u>
1/8"	7/32"	1/32"	1/8"
1/4"	7/16"	1/32"	3/16"
1/2"	1-1/4"	1/32"	1/4"
1-3/8"	1-7/8"	1/16"	1/4"
2"	2-7/8"	1/8"	5/16"
3"	4-7/8"	1/8"	1/2"

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### Tolerances on Outside and Inside Diameters - Tubes\* (inches)

Normal Size of Tubing Inside Diameter	Outside Diameter All Wall Thicknesses	Inside Diameter Wall Thickness as Listed			
		1/16"	1/8"	3/16"	3/16"
1/4" and under	.004	.005	.006	---	
17/64" to 1" incl.	.005	.005	.006	.007	.008
1-1/16" to 2" incl.	.008	.008	.008	.010	.010
2-1/16" to 4" incl.	.010	.010	.010	.015	.015

### \*NEMA Values

### Telescoped, or Heavy Walled Tubing

Wall thicknesses required beyond the range of solid wall tubing, are furnished and made by telescoping one tube within another, whose combined wall thickness equals the desired thickness.

**Rods:** Vulcanized fibre rods are made from sheet fibre. Square bars are cut from sheet stock and accurately ground to close tolerances. The solid bone-like structure of dense vulcanized fibre makes rods exceptionally strong and tough. Their excellent machining qualities make them well suited to turning, threading, drilling, tapping, and slotting with standard wood and metal-working machinery.

Vulcanized fibre rods have many applications as insulators, spacers, plugs, tie-in and supporting brackets, and are ideal for many screw machine specialities.

**Sizes:** Rods come in diameters from 1/16" up to 7/8". Length up to 6 feet.

**Colors:** Gray, red, black

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**Dimensions & Tolerances\*: Rods (inches)**

Nominal Size of Rod Outside Diameter in Inches	Tolerances Inches - Plus or Minus
1/16 to 1/4 incl.	0.005
17/64 to 7/8 incl.	0.006

**\*NEMA Values**

**Typical Properties:**

**Vulcanized Fibre:**

Thickness	.508 mm (.020")
Specific Weight	1.20
Tensile Strength (96 hours/105 C°/220 F°)	
MD (Machine Direction)	984.52 kg/cm <sup>2</sup> (14,000 psi)
CD (Cross Direction)	668.07 kg/cm <sup>2</sup> (9,500 psi)
Compressive Strength, Flatwise (PSI)	2461.32 kg/cm <sup>2</sup> (35,000 psi)
Flexural Strength	
MD	1898.73 kg/cm <sup>2</sup> (27,000 psi)
CD	1195.50 kg/cm <sup>2</sup> (17,000 psi)
Modulus of Elasticity (in flexure x 100,000)	
MD	10
CD	7
Impact Strength	
MD	6939 J/cm (1.3 ft.lbs./in.)
CD	5872 J/cm (1.1 ft.lbs./in.)
Rockwell Hardness (R-Scale)	70
Bonding Strength	408.24 kg (900 lb)
Dielectric Strength	215
Arc Resistance (Seconds)	125
Water Absorption (% in 24 hours)	66
Thermal Conductivity (149 F°/65 C°)	----
Thermal Expansion (in/in/F°)	
MD	1.1
CD	1.7
Bursting Strength	----
Elmendorf Tearing Strength (Grams)	
MD	800
CD	900

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