TUFNOL

GRADE RLF-1/2/3

SRBF Material
Synthetic Resin Bonded Fabric

Cotton fabric laminate
Medium weave cotton/phenolic resin laminated plastic tubes

SRBF Material. GRADE RLF-1/2/3.

Laminated cotton fabric tubes.

TUFNOL Rolled Laminated cotton fabric tubes were developed to complement the range of moulded tubes. RL tubes have good mechanical strength, low water absorption and are resistant to weathering and to chemical attack by mild acids and alkalis. They are most commonly used to manufacture mechanical and wear resistance components for a wide range of engineering applications. They are strong and rigid, with good bursting strength and excellent wear resistance in lubricated applications. Three grades are available:

- Grade RL F/1 - A fine weave fabric grade with good electrical and mechanical qualities. Machines well and is suitable for finer and more intricate components.
- Grade RL F/2 - A fairly fine weave grade, developed mainly for its good mechanical strength, but suitable for low voltage electrical applications.
- Grade RL F/3 - A medium weave grade giving improved wear resistance where surface finish and intricate machining are not required. Suitable for low voltage electrical applications.

What are TUFNOL RL Cotton Fabric tubes used for?

These materials are used for many applications where strong, rigid tubes are required for the manufcture of cylindrical components. Items include mechanical or wear resistant components, such as wear rings for hydraulic rams, lubricated bearings or ball race cages. Electrical insulation components are also made.

Types available

	Sheets
Grade RL F/1 - natural colour	Yes
Grade RL F/2 - natural colour	Yes
Grade RL F/2 - molybdenum disulphide impregnated	Yes
Grade RL F/3 - natural colour	Yes

Specifications for GRADE RLF-1/2/3

British Standards	Current Standards	Recent Standards (now obsolete)
Grade RL F/1 tube	BS EN 61212-3-1 Type PF CC 21	BS 6128 Part 8 Type PF CC 81
Grade RL F/2 tube	BS EN 61212-3-1 Type PF CC 22	BS 6128 Part 8 Type PF CC 82
Grade RL F/3 tube	BS EN 61212-3-1 Type PF CC 23	BS 6128 Part 8 Type PF CC 82 & 83

Physical Properties

Property	GRADE RL F/1	GRADE RL F/2	GRADE RL F/3	Units
	Typical Result	Typical Result	Typical Result	
Axial compressive strength	160	150	150	MPa
Cohesion between layers	150	150	130	MPa
Water Absorption	2.6	2.9	3.1	mg/cm²
Insulation resistance after immersion in water	3 x 108	1 x 108	8 x 107	ohms
Loss tangent at 1 MHz	-	-	-	-
Permittivity at 1 MHz	-	-	-	-
Axial electric strength in oil at 90°C	40	30	30	kV
Electric strength normal to axis in oil at 90°C				
- 1.6mm thk.	-	-	-	MV/m
- 3mm thk.	-	-	-	MV/m
Relative density	1.25	1.25	1.25	-
Maximum working temperature**				
- continuous	120	120	120	°C
- intermittent	130	130	130	°C
Thermal classification	Class E	Class E	Class E	-

Test methods as BS EN 61212-2. where applicable.

**users of highly stressed components at temperatures approaching the maximum are recommended to seek further advice from TUFNOL Ltd.

A full machining service is available from Tufnol for this and many other engineering plastics and composites.

Notes

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Reliability in the field of engineering plastics & composites.

Tufnol is the byword for quality in laminated plastics and resin based materials for engineering applications. It was invented here in the UK and its development to meet modern engineering demands continues to keep it abreast of 21st century technology.

This type of material is known as 'synthetic resin bonded laminated plastic', and is made from layers of paper, cotton cloth or woven glass fibre cloth, dipped in resin, then compressed and bonded together in a hot press. It is a strong, hard material, made in a number of different grades with varying properties and uses.

Tufnol's reliability is key to the many sectors of engineering industry in which it serves.

Tufnol UK
Wellhead Lane, Perry Barr
Birmingham B42 2TN

T: +44 (0)121 356 9351
E: info@tufnol.co.uk

tufnol.com

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