Pure Aluminium 1070A

Metallic shield for medium- and high-voltage cables

Descripción

Pure 1070A aluminium tape is a high-purity annealed material that provides electromagnetic shielding, short-circuit protection and mechanical reinforcement in medium- and high-voltage cables. Its electrical resistivity of 0.0281 µΩ/mm ensures uniform conductivity along the entire shield, enabling correct evacuation of fault currents and the safe operation of system protections.

In power-cable construction, pure aluminium is applied as a metallic shield over the insulation or over the phase bundle, providing a low-impedance path for short-circuit currents. Unlike polyester-laminated aluminium, the pure aluminium tape withstands the thermal and mechanical stresses of a short-circuit without backing degradation, making it essential in medium- and high-voltage cable constructions where shield integrity is critical.

Thicknesses range from 200 to 500 µm with tensile strength ≥60 MPa and elongation ≥15 % per ASTM D882/EN 13999. This range allows the optimum thickness to be selected based on the expected short-circuit current, the protection clearing time and the mechanical requirements of the installation.

Propiedad	Value	Test method
Alloy	1070A	—
Temper	Annealed	—
Tensile strength	≥60 MPa	ASTM D882 / EN 13999
Elongation at break	≥15%	ASTM D882 / EN 13999
Electrical resistivity	0.0281 µΩ/mm	Internal

Available references

Propiedad	Nominal thickness (µm)	Tolerance (µm)
AL200 (1070A)	200	±12
AL300 (1070A)	300	±18
AL400 (1070A)	400	±24
AL500 (1070A)	500	±25

Guía de selección

The right thickness depends primarily on the short-circuit current the shield must withstand and on the protection clearing time. Greater thickness means greater energy-absorption capacity during a short-circuit, but also greater finished-cable stiffness.

Reference	Thickness	Tolerance	Typical application	When to choose
AL200 (1070A)	200 µm	±12 µm	MV cables up to 36 kV	Moderate fault currents, maximum flexibility
AL300 (1070A)	300 µm	±18 µm	MV/HV cables up to 72 kV	Protection/flexibility balance
AL400 (1070A)	400 µm	±24 µm	HV cables up to 145 kV	High short-circuit capacity
AL500 (1070A)	500 µm	±25 µm	HV cables, submarine	Maximum protection, severe stresses

Variantes disponibles

Alternative alloys
– 1050
– 1145
– 1200
– Temper H0

Annealing states
– Different annealing grades available per forming and application requirements

Consult availability and specifications for alternative alloys and tempers.

Formatos de entrega

Pure aluminium is supplied in jumbo reels optimised for continuous feed in high-voltage cable manufacturing lines. The formats are designed to minimise splices and maximise productivity.

Jumbo reel

Core ID:	100 mm, 152 mm, 400 mm
Max OD:	up to 1300 mm
Width range:	26 – 500 mm
Orientation:	Eye to sky / Flat eye

The values shown below come from tests run to international standards and characterise the material's behaviour both during processing and in service.

Los valores indicados son típicos y no constituyen especificaciones vinculantes.