Product Overview

QZ Cable manufactures Covered Protected Aluminium Cables designed for medium-voltage overhead power distribution networks in accordance with ABNT NBR 11873.

With rated voltage applications from 13.8 kV to 34.5 kV, these protected cables are designed for compact primary distribution networks using spacer cable systems.

The cable features a weather-resistant, electrical tracking-resistant protective covering. This construction helps improve overhead distribution line reliability by reducing the risk of discharges and interruptions during occasional contact with grounded objects or tree branches.

The product range is available in 15 kV, 25 kV and 35 kV classes, with aluminium conductor cross-sections from 35 mm² to 300 mm², depending on voltage rating.

Applications

Covered Protected Aluminium Cables are primarily used in:

- Medium-voltage overhead power distribution networks.
- Compact primary distribution networks.
- Spacer cable systems.
- Urban and suburban overhead distribution routes.
- Distribution lines in areas with trees and vegetation.
- Networks requiring additional protection against electrical tracking and weather exposure.

Construction

1. Conductor

- Material: 1350 aluminium.
- Construction: Compact stranded Class 2 conductor.
- Moisture protection: Longitudinal water blocking.
- Conductor standard: NBR NM 280.

2. Semiconductor Layer

The semiconductor layer is made of thermostable XLPE or thermoplastic PE.

- Mandatory for 35 kV cables.
- Optional for 15 kV and 25 kV cables, according to the supplied construction description.

3. Protective Layer

The protective covering is applied simultaneously with the semiconductor layer and can consist of:

- One or two layers of thermostable material (XLPE).
- Two layers of polyethylene (LDPE/HDPE).

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- Two layers of XLPE/HDPE.

For two-layer constructions, the inner layer is uncoloured, while the outer layer has the specified colour.

Maximum Operating Temperatures

Operating Condition	Maximum Temperature
Continuous operation	90°C
Overload operation	100°C
Short circuit	250°C

Applicable Standards

- **ABNT NBR 11873:2021** – Covered cables with polymeric material for overhead electrical distribution networks, voltage classes 15 kV, 25 kV and 35 kV.
- **ABNT NBR NM 280** – Conductors for insulated cables, where applicable to the conductor construction.
- **ABNT NBR 6251** – Insulation and covering requirements for power cables, where referenced by the applicable product specification.
- **Utility specifications** – Additional requirements for conductor material, semi-conductive layers, covering materials, dimensions and testing.

The applicable standard edition and utility-specific requirements should be confirmed before production.

Why Choose QZ Cable?

- **Manufacturer Since 1969:** Qingzhou Cable is part of QZ Group, with experience in cable and conductor manufacturing.
- **Brazilian Standard Reference:** Production according to ABNT NBR 11873:2021 and agreed utility specifications.
- **Flexible Covering Designs:** Single-layer XLPE and double-layer XLPE/HDPE options.
- **Multiple Voltage Classes:** 15 kV, 25 kV and 35 kV product configurations.
- **Customized Manufacturing:** Conductor cross-sections, covering thicknesses and construction details tailored to project requirements.
- **Factory-Direct Supply:** Supporting Brazilian distributors, utilities, EPC contractors and international project buyers.

Contact QZ Cable for technical datasheets, construction details and quotations for ABNT NBR 11873 covered aluminium conductors.

Technical Specifications

15 kV Covered Protected Aluminium Cable

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Conductor Section (mm²)	Conductor Diameter (mm)	Covering Thickness (mm)	Covering Diameter (mm)	Nominal Weight (kg/km)
35	6.95	3	13.3	184
50	8.15	3	14.6	226
70	9.65	3	16.1	297
95	11.45	3	18.0	384
120	12.95	3	19.5	462
150	14.4	3	21.0	546
185	16.15	3	22.8	672
240	18.29	3	25.0	843
300	20.65	3	27.4	1021

25 kV Covered Protected Aluminium Cable

Conductor Section (mm²)	Conductor Diameter (mm)	Covering Thickness (mm)	Covering Diameter (mm)	Nominal Weight (kg/km)
35	6.95	4	15.4	225
50	8.15	4	16.6	271
70	9.65	4	18.2	346
95	11.45	4	20.0	437
120	12.95	4	21.6	520
150	14.4	4	23.1	608
185	16.15	4	24.9	739
240	18.29	4	27.1	916
300	20.65	4	29.5	1101

35 kV Covered Protected Aluminium Cable

Conductor Section (mm²)	Conductor Diameter (mm)	Covering Thickness (mm)	Covering Diameter (mm)	Nominal Weight (kg/km)
70	9.65	7.6	26.8	879
95	11.45	7.6	28.7	953
120	12.95	7.6	30.2	1028
150	14.4	7.6	31.7	1129
185	16.15	7.6	33.5	1230
240	18.29	7.6	35.7	1333
300	20.65	7.6	38.2	1437

Key Features

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- **Designed for spacer cable systems:** Suitable for compact medium-voltage overhead distribution networks.
- **1350 aluminium conductor:** Compact Class 2 stranded conductor construction.
- **Longitudinal water blocking:** Helps limit moisture propagation along the conductor.
- **Electrical tracking-resistant covering:** Protective covering designed to resist electrical tracking.
- **Weather-resistant construction:** Suitable for outdoor overhead distribution applications.
- **Multiple covering options:** XLPE, LDPE/HDPE or XLPE/HDPE configurations, depending on the specified design.
- **Three voltage classes:** Technical configurations available for 15 kV, 25 kV and 35 kV applications.

Manufacturing and Customization

QZ Cable can review technical requirements for covered protected aluminium cables used in medium-voltage spacer cable systems.

When requesting a quotation, please provide:

- Rated voltage: 15 kV, 25 kV or 35 kV.
- Conductor cross-section.
- Required conductor construction.
- Semiconductor layer requirements.
- Protective covering material and layer arrangement.
- Outer covering colour.
- Applicable standard and project specification.
- Required quantity and delivery length.

Contact QZ Cable for technical documentation and a project-based quotation.

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