Product Overview

SAC (Spaced Aerial Cable) is a medium-voltage overhead distribution cable system designed for supported spacer cable installations. It is primarily used for the distribution of electrical energy under normal overhead installation conditions.

QZ Cable supplies SAC Spaced Aerial Cable with stranded aluminium conductors and multi-layer polymeric covering. Available constructions include XLPE/XLPE and XLPE/HDPE designs, with system voltage options of 15 kV, 25 kV and 35 kV.

The system is designed for installation using suitable spacers and insulators. The dielectric compatibility of the conductor covering, spacers and insulators must be considered during system design.

Important: SAC conductors are classified as covered conductors, not conventional fully insulated power cables. The conductor itself does not carry a voltage rating. The supporting spacers and insulators must be suitable for the operating voltage of the system.

Product Types

QZ Cable's SAC product range includes:

- 15 kV SAC Spaced Aerial Cable
- 25 kV SAC Spaced Aerial Cable
- 35 kV SAC Spaced Aerial Cable

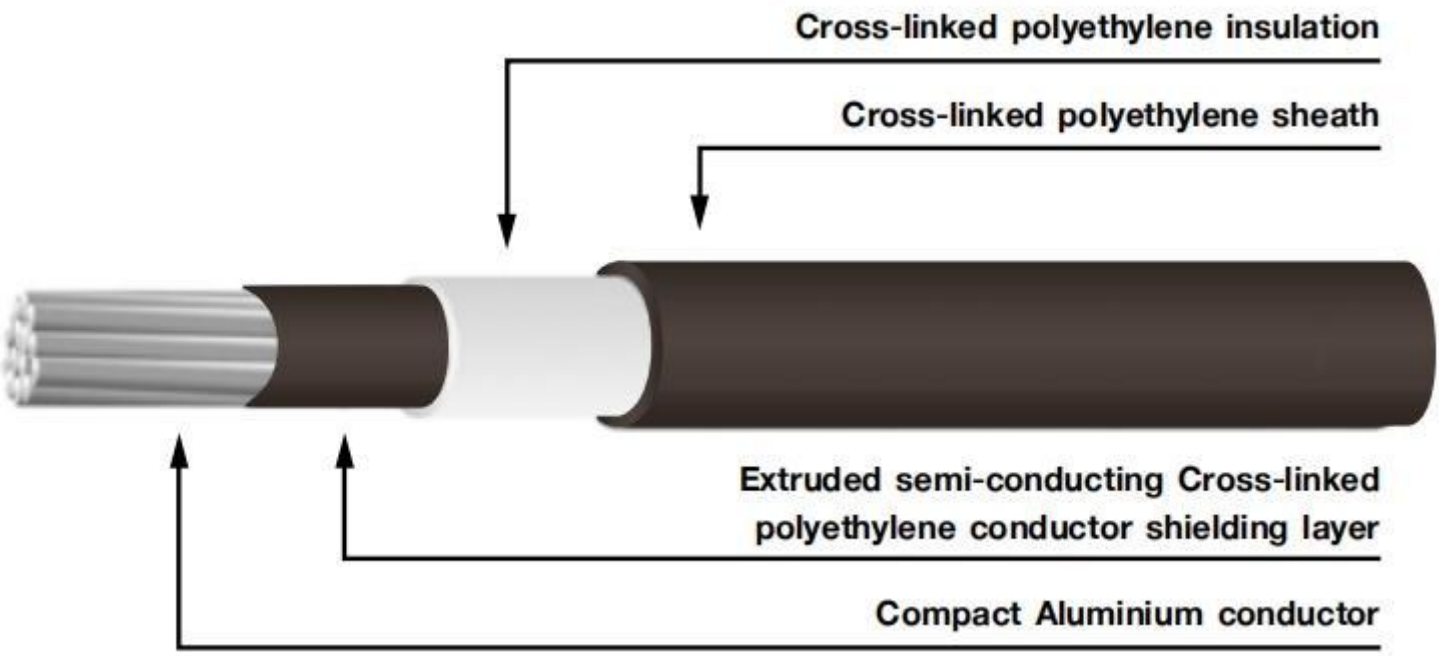
Available covering constructions:

- **AAC / XLPE / XLPE:** Aluminium conductor, semiconductive conductor shield, XLPE inner layer and XLPE outer layer.
- **AAC / XLPE / HDPE:** Aluminium conductor, semiconductive conductor shield, XLPE inner layer and HDPE outer layer.

The actual polymer material, layer thickness and temperature rating should be specified according to the project requirements.

Cable Construction

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The typical three-layer SAC construction consists of:

1. **Conductor:** Stranded, circular, compressed aluminium conductor.
2. **Semiconductive Conductor Shield:** Extruded black semiconductive material applied over the conductor.
3. **Inner Layer:** Natural-colour thermoplastic polyethylene (PE) or cross-linked polyethylene (XLPE), depending on the specified design.
4. **Outer Layer:** Weather-resistant or UV-resistant thermoplastic polyethylene (PE) or cross-linked polyethylene (XLPE), generally supplied in black or grey.

The supplied technical tables cover AAC/XLPE/XLPE and AAC/XLPE/HDPE constructions.

Voltage and Temperature Ratings

Item	Specification
System voltage options	15 kV, 25 kV, 35 kV
Phase-to-phase voltage stated in source	10 kV, 20 kV, 33 kV
Normal operating temperature	75°C or 90°C, depending on construction
Conductor material	Stranded aluminium
Installation	Supported spacer cable system

The voltage values refer to the system application described in the source. SAC covered conductors must be installed with suitable supporting insulators and spacers.

Applications

SAC Spaced Aerial Cable is primarily used for overhead electrical power distribution.

Typical applications include:

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- Medium-voltage overhead distribution networks
- Compact overhead distribution systems
- Supported spacer cable installations
- Urban and suburban overhead power distribution
- Distribution routes requiring a compact conductor arrangement

Key Features

- Stranded, circular, compressed aluminium conductor
- Extruded semiconductive conductor shield
- Multi-layer polymeric covering
- XLPE/XLPE and XLPE/HDPE construction options
- 15 kV, 25 kV and 35 kV system applications
- PE and XLPE material options, subject to design
- Weather-resistant and UV-resistant outer covering options
- Suitable for supported spacer cable systems

Applicable Standards

ICEA S-66-524 – Cross-Linked-Thermosetting-Polyethylene-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.

Other references may include:

- ASTM B230 – Aluminium 1350-H19 Wire for Electrical Purposes
- ASTM B231 – Concentric-Lay-Stranded Aluminium Conductors
- IEC 60228 – Conductors of Insulated Cables, where applicable

The final standard combination and edition should be confirmed according to the customer's technical specification and the actual cable construction.

Technical Specifications

15 kV SAC Cable – AAC / XLPE / XLPE

Nominal Size (mm²)	Minimum No. of Wires	Conductor Shield (mm)	Inner Layer (mm)	Outer Layer (mm)	Cable Diameter (mm)	Minimum Breaking Load (N)	Weight (kg/km)
25	6	0.60	1.91	1.91	15.2	3,762	218
35	6	0.60	1.91	1.91	16.2	5,177	258
50	6	0.60	1.91	1.91	17.3	7,011	307
70	12	0.60	1.91	1.91	19.0	10,354	387
95	15	0.60	1.91	1.91	20.8	13,727	482
120	15	0.60	1.91	1.91	22.0	17,339	564

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150	15	0.60	1.91	1.91	23.7	21,033	660
185	30	0.60	1.91	1.91	25.3	26,732	780
240	30	0.60	1.91	1.91	27.6	34,679	968

25 kV SAC Cable – AAC / XLPE / XLPE

Nominal Size (mm²)	Minimum No. of Wires	Conductor Shield (mm)	Inner Layer (mm)	Outer Layer (mm)	Cable Diameter (mm)	Minimum Breaking Load (N)	Weight (kg/km)
25	6	0.70	3.18	3.18	20.1	3,762	351
35	6	0.70	3.18	3.18	21.1	5,177	398
50	6	0.70	3.18	3.18	22.2	7,011	455
70	12	0.70	3.18	3.18	23.9	10,354	548
95	15	0.70	3.18	3.18	25.7	13,727	657
120	15	0.70	3.18	3.18	26.9	17,339	748
150	15	0.70	3.18	3.18	28.6	21,033	856
185	30	0.70	3.18	3.18	30.2	26,732	989
240	30	0.70	3.18	3.18	32.5	34,679	1,195

35 kV SAC Cable – AAC / XLPE / XLPE

Nominal Size (mm²)	Minimum No. of Wires	Conductor Shield (mm)	Inner Layer (mm)	Outer Layer (mm)	Cable Diameter (mm)	Minimum Breaking Load (N)	Weight (kg/km)
25	6	0.70	4.45	3.18	22.6	3,762	433
35	6	0.70	4.45	3.18	23.6	5,177	485
50	6	0.70	4.45	3.18	24.7	7,011	545
70	12	0.70	4.45	3.18	26.4	10,354	645
95	15	0.70	4.45	3.18	28.2	13,727	761
120	15	0.70	4.45	3.18	29.4	17,339	856
150	15	0.70	4.45	3.18	31.1	21,033	971
185	30	0.70	4.45	3.18	32.7	26,732	1,110
240	30	0.70	4.45	3.18	35.0	34,679	1,324

15 kV SAC Cable – AAC / XLPE / HDPE

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Nominal Size (mm²)	Minimum No. of Wires	Conductor Shield (mm)	Inner Layer (mm)	Outer Layer (mm)	Cable Diameter (mm)	Minimum Breaking Load (N)	Weight (kg/km)
25	6	0.60	1.91	1.91	15.2	3,762	221
35	6	0.60	1.91	1.91	16.2	5,177	261
50	6	0.60	1.91	1.91	17.3	7,011	310
70	12	0.60	1.91	1.91	19.0	10,354	390
95	15	0.60	1.91	1.91	20.8	13,727	486
120	15	0.60	1.91	1.91	22.0	17,339	568
150	15	0.60	1.91	1.91	23.7	21,033	664
185	30	0.60	1.91	1.91	25.3	26,732	785
240	30	0.60	1.91	1.91	27.6	34,679	973

25 kV SAC Cable – AAC / XLPE / HDPE

Nominal Size (mm²)	Minimum No. of Wires	Conductor Shield (mm)	Inner Layer (mm)	Outer Layer (mm)	Cable Diameter (mm)	Minimum Breaking Load (N)	Weight (kg/km)
25	6	0.70	3.18	3.18	20.1	3,762	356
35	6	0.70	3.18	3.18	21.1	5,177	404
50	6	0.70	3.18	3.18	22.2	7,011	461
70	12	0.70	3.18	3.18	23.9	10,354	555
95	15	0.70	3.18	3.18	25.7	13,727	664
120	15	0.70	3.18	3.18	26.9	17,339	755
150	15	0.70	3.18	3.18	28.6	21,033	864
185	30	0.70	3.18	3.18	30.2	26,732	997
240	30	0.70	3.18	3.18	32.5	34,679	1,203

35 kV SAC Cable – AAC / XLPE / HDPE

Nominal Size (mm²)	Minimum No. of Wires	Conductor Shield (mm)	Inner Layer (mm)	Outer Layer (mm)	Cable Diameter (mm)	Minimum Breaking Load (N)	Weight (kg/km)
25	6	0.70	4.45	3.18	22.6	3,762	439
35	6	0.70	4.45	3.18	23.6	5,177	491
50	6	0.70	4.45	3.18	24.7	7,011	552
70	12	0.70	4.45	3.18	26.4	10,354	652
95	15	0.70	4.45	3.18	28.2	13,727	768
120	15	0.70	4.45	3.18	29.4	17,339	864
150	15	0.70	4.45	3.18	31.1	21,033	980

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185	30	0.70	4.45	3.18	32.7	26,732	1,119
240	30	0.70	4.45	3.18	35.0	34,679	1,334

Technical Data Note: Values are reproduced from the supplied reference. Confirm the construction details and approved technical datasheet before using these figures for engineering design or procurement.

Manufacturing and Customization

QZ Cable can review SAC cable requirements according to project specifications.

Customization can be discussed for:

- Nominal conductor cross-sectional area
- Aluminium conductor stranding
- System voltage
- Semiconductive shield thickness
- XLPE or HDPE covering construction
- Operating temperature requirements
- Reel length and packaging

Please provide the project specification, applicable standard and required cable schedule for technical evaluation and quotation.

Frequently Asked Questions

1. What does SAC stand for?

SAC stands for Spaced Aerial Cable. It is a covered conductor system designed for supported overhead spacer installations.

2. What voltage levels are available?

The supplied reference includes 15 kV, 25 kV and 35 kV SAC system applications.

3. What is the difference between XLPE/XLPE and XLPE/HDPE?

Both constructions have a semiconductive conductor shield and an XLPE inner layer. The specified outer polymer layer differs: XLPE for the first construction and HDPE for the second.

4. Is SAC a fully insulated medium-voltage cable?

No. SAC is classified as a covered conductor system. Its conductors do not carry a voltage rating and must be installed using spacers and insulators suitable for the system voltage.

5. What is the normal operating temperature?

The reference lists 75°C and 90°C constructions. The applicable temperature depends on the selected material and design.

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6. Can SAC cable be supplied in customized lengths?

Reel lengths and packaging can be discussed according to project requirements.

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