Product Overview

QZ Cable supplies ACSR-OC, ACSR/AW-OC, and ACSR/AW-TR/OC aerial insulated conductors for medium-voltage overhead power distribution networks. Designed for rated voltage applications from 6.6 kV to 22.9 kV, these products combine stranded reinforced conductors with weather-resistant XLPE insulation.

The conductor designs are intended for overhead installations under normal service conditions. They must be installed using insulators and/or spacers suitable for the system voltage. Compatibility between the cable covering, insulators, spacers, and other installation components should also be considered.

The product series includes conventional ACSR reinforced conductors and ACSR/AW designs incorporating aluminum-clad steel wires. Depending on the type, the insulation system may also include a semi-conductive layer or an additional anti-tracking layer.

Product Types

1. ACSR-OC

ACSR-OC is an aluminium conductor steel reinforced overhead conductor with an XLPE weather-resistant covering.

- **Conductor:** Stranded, circular compressed ACSR.
- **Conductor screen:** Extruded black semi-conducting layer.
- **Insulation:** Black, weather-resistant XLPE.
- **Normal operating temperature:** 90°C, according to the supplied product description.

2. ACSR/AW-OC

ACSR/AW-OC uses an aluminium-clad steel reinforced conductor with an outdoor weather-resistant XLPE insulation system.

The supplied construction description identifies the following components:

- **Reinforcing wire:** Stranded aluminum-clad steel (AW).
- **Conductor:** Standard aluminium conductor.
- **Interior semi-conductive layer:** Black semi-conductive thermosetting compound.
- **Insulation:** Black, weather-resistant cross-linked polyethylene (XLPE).

3. ACSR/AW-TR/OC

ACSR/AW-TR/OC is an aluminium conductor, aluminum-clad steel reinforced outdoor XLPE insulated wire with an additional tracking-resistant layer.

The supplied construction description identifies:

- **Reinforcing wire:** Stranded aluminum-clad steel (AW).
- **Conductor:** Standard aluminium conductor.
- **Interior semi-conductive layer:** Black semi-conductive thermosetting compound.

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- **Insulation:** Weather-resistant XLPE, natural color.
- **Outer layer:** Black semi-conductive thermosetting compound for tracking resistance.

Applications

ACSR-OC, ACSR/AW-OC, and ACSR/AW-TR/OC are designed primarily for the distribution of electrical energy through overhead power networks.

Typical application considerations include:

- Medium-voltage overhead distribution networks.
- Aerial installations operating at 6.6 kV to 22.9 kV, depending on the product design.
- Installations using voltage-rated insulators and/or spacers.
- Outdoor environments requiring weather-resistant insulation.
- Distribution systems where the specified conductor reinforcement and insulation construction are required.

The installation design should account for the electrical compatibility of the covering, insulators, spacers, and associated fittings.

Key Features

- **Reinforced conductor construction:** Stranded ACSR or ACSR/AW conductor designs.
- **Weather-resistant XLPE:** Insulation designed for outdoor overhead service.
- **Semi-conductive layer:** Specified for the conductor insulation system.
- **Tracking-resistant option:** ACSR/AW-TR/OC includes an additional black semi-conductive outer layer as described in the supplied construction information.
- **Multiple voltage classes:** Product data covers 6.6 kV and 22.9 kV applications.
- **Different conductor sizes:** Available configurations vary by product type and voltage rating.

Applicable Standards

- **KS C 3138** – Outdoor XLPE-insulated ACSR wires for the specified Korean product range.
- **ES-6145-0021** – Utility technical specification referenced for 22.9 kV ACSR/AW-TR/OC designs.
- **IEC 60228** – Conductor requirements, where applicable and specified.
- **Relevant customer or utility specifications** – For conductor construction, insulation, electrical tests and acceptance criteria.

The exact standard, edition and test requirements should be confirmed for each voltage rating and product type. A 22.9 kV TR design should not automatically be described as fully covered by the 6.6 kV scope of KS C 3138.

Technical Specifications

1. 6.6 kV ACSR-OC Aerial Insulated Conductors

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Nominal Size (mm²)	Aluminium Wires	Steel Wires	Conductor Diameter (mm)	XLPE Insulation Thickness (mm)	Cable Diameter (mm)	Rated Strength (kgf)	Approx. Weight (kg/km)
32	6/SB	1/2.6	7.2	2.0	11.2	1,090	185
58	6/SB	1/3.5	9.7	2.5	14.7	1,900	325
95	6/SB	1/3.5	12.0	2.5	17.0	2,360	455

2. 22.9 kV ACSR-OC Aerial Insulated Conductors

Nominal Size (mm²)	Aluminium Wires	Steel Wires	Conductor Diameter (mm)	XLPE Insulation Thickness (mm)	Cable Diameter (mm)	Rated Strength (kgf)	Approx. Weight (kg/km)
32	6/SB	1/2.6	7.2	3.0	13.2	1,090	215
58	6/SB	1/3.5	9.7	3.0	15.7	1,900	340
95	6/SB	1/3.5	12.0	3.5	19.0	2,360	540
160	18/SB	1/3.2	15.4	4.0	23.4	3,080	740

3. 6.6 kV ACSR/AW-OC Aerial Insulated Conductors

Nominal Size (mm²)	Aluminium Wires	Steel Wires	Conductor Diameter (mm)	XLPE Insulation Thickness (mm)	Cable Diameter (mm)	Rated Strength (kgf)	Approx. Weight (kg/km)
32	6/SB	1/2.6	7.2	2.0	11.2	1,090	180
58	6/SB	1/3.5	9.7	2.5	14.7	1,900	315
95	6/SB	1/3.5	12.0	2.5	17.0	2,360	445

4. 22.9 kV ACSR/AW-OC Aerial Insulated Conductors

Nominal Size (mm²)	Aluminium Wires	Steel Wires	Conductor Diameter (mm)	XLPE Insulation Thickness (mm)	Cable Diameter (mm)	Rated Strength (kgf)	Approx. Weight (kg/km)
32	6/SB	1/2.6	7.2	3.0	13.2	1,090	210
58	6/SB	1/3.5	9.7	3.0	15.7	1,900	330
95	6/SB	1/3.5	12.0	3.5	19.0	2,360	530
160	18/SB	1/3.2	15.4	4.0	23.4	3,080	730
240	18/SB	1/4.0	18.9	4.0	27.0	4,500	1,040

5. 22.9 kV ACSR/AW-TR/OC Technical Data

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Nominal Sectional Area (mm²)	Aluminium Wires	AW Wires	Conductor Outer Diameter (mm)	XLPE Insulation Thickness (mm)	Overall Diameter (mm)	Max. Conductor Resistance at 20°C (Ω/km)	Min. Insulation Resistance at 20°C (Ω/km)	Test Voltage (kV)	Min. Tensile Load (kN / kgf)	Approx. Weight (kg/km)	Standard Length (m)
58	6/SB	1/3.5	9.7	3.0	15.7	0.484	1,500	25	1,900	360	600
95	6/SB	1/3.5	12.0	3.5	19.0	0.302	1,500	25	2,360	520	600
160	18/SB	1/3.2	15.4	4.0	23.4	0.183	1,500	25	3,080	750	600
240	18/SB	1/4.0	18.9	4.0	27.0	0.123	—	—	—	—	—

Note: The 240 mm² ACSR/AW-TR/OC row is incomplete in the supplied source. The available conductor data and resistance value are shown; the remaining values require confirmation.

Manufacturing and Project Requirements

QZ Cable can review ACSR-OC, ACSR/AW-OC, and ACSR/AW-TR/OC requirements according to the requested voltage class, conductor size, reinforcement design, insulation construction, and applicable standard.

For project enquiries, please provide:

- Required cable type: ACSR-OC, ACSR/AW-OC, or ACSR/AW-TR/OC
- Rated voltage and system requirements
- Nominal conductor cross-sectional area
- Applicable standard and technical specification
- Required quantity and delivery length
- Installation conditions and any special environmental requirements

Frequently Asked Questions

1. What is ACSR-OC cable?

ACSR-OC is an aluminium conductor steel reinforced overhead conductor with an outdoor XLPE insulation covering. It is designed for overhead power distribution applications.

2. What is the difference between ACSR-OC and ACSR/AW-OC?

Both are insulated overhead conductor designs. ACSR-OC uses a conventional steel-reinforced aluminium conductor, while ACSR/AW-OC uses aluminum-clad steel reinforcement as specified in the supplied product description.

3. What is ACSR/AW-TR/OC?

ACSR/AW-TR/OC is an aluminum-clad steel reinforced overhead conductor with weather-resistant XLPE insulation and an additional tracking-resistant outer layer, according to the supplied construction description.

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4. What voltage ratings are available?

The supplied technical data covers 6.6 kV and 22.9 kV designs. The applicable voltage rating should be selected according to the network and project requirements.

5. How should these conductors be installed?

These products are intended for overhead installation on insulators and/or spacers suitable for the service voltage. Installation design should also consider dielectric compatibility between the covering and associated components.

6. What standards are referenced?

The supplied information references GB/T 14049, KS C 3138, and ES-6145-0021. The exact applicable standard depends on the product type and voltage class.

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