Product Overview

AS/NZS 3599.1 High Voltage Aerial Bundled Cable (HV ABC) is designed for overhead medium-voltage power distribution networks. Manufactured with aluminium phase conductors, XLPE insulation and a protective HDPE outer sheath, the cable provides a reliable solution for overhead power distribution.

Available in non-screened and copper-wire-screened constructions, these cables are designed with different support systems to meet specific network installation and mechanical requirements. Non-screened cables use an aluminium alloy AAAC/1120 support conductor, while screened cables use galvanized steel wires as the support conductor.

Qingzhou Cable manufactures AS/NZS 3599.1 HV ABC cables in 6.35/11 kV and 12.7/22 kV voltage ratings, with different conductor sizes, screen configurations and mechanical specifications available according to project requirements.

Applications

- Medium-voltage overhead power distribution networks
- Urban and suburban electricity distribution
- Rural electrification projects
- Overhead distribution lines in areas requiring improved insulation
- Utility distribution networks and infrastructure projects
- Power distribution installations requiring different support conductor configurations

Cable Types

1. Non-Screened HV ABC Cable (AL/XLPE/HDPE)

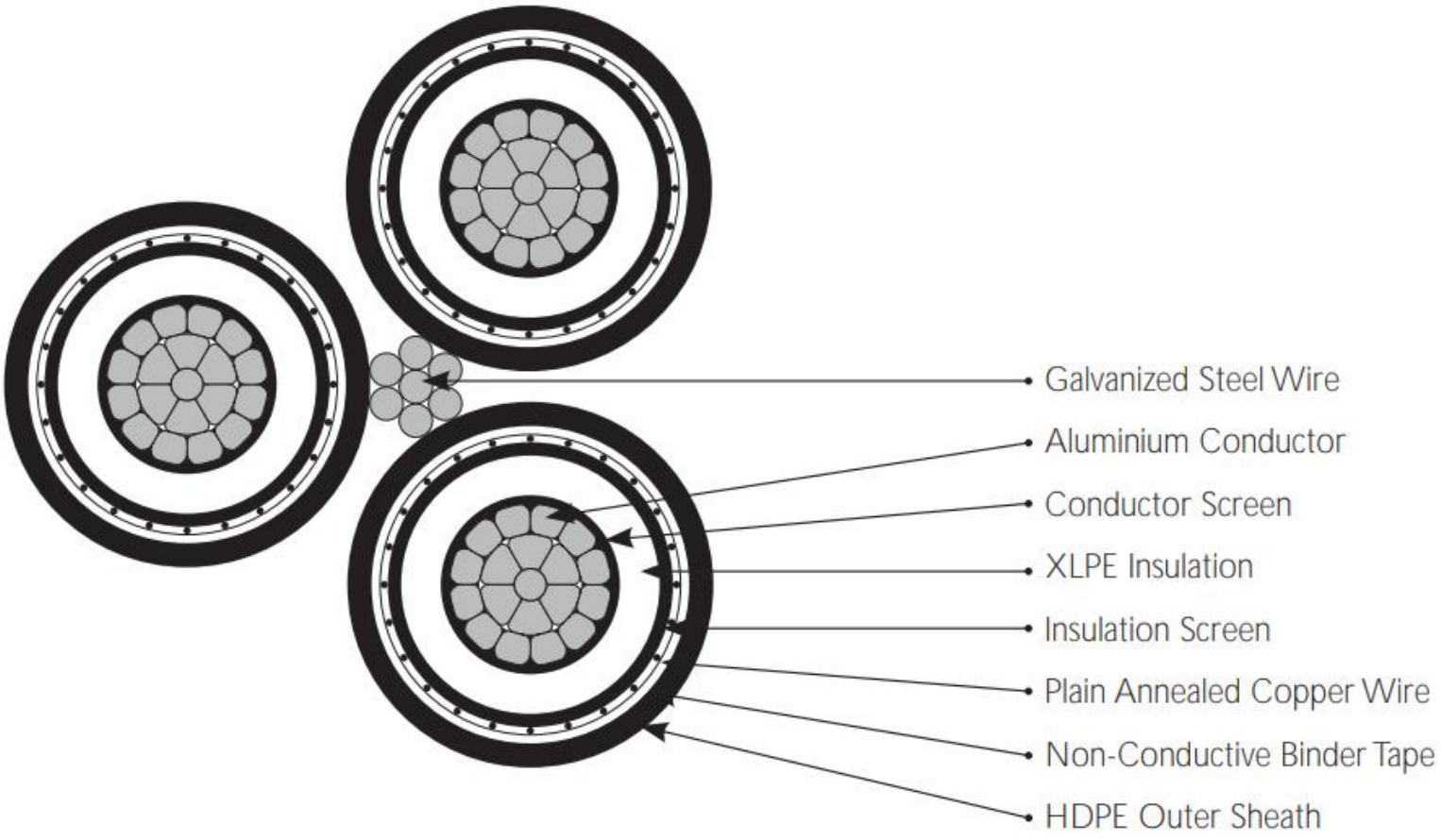
- Voltage ratings: 6.35/11 kV and 12.7/22 kV
- Aluminium phase conductors
- XLPE insulation with extruded semi-conductive layers
- HDPE outer sheath
- AAAC/1120 aluminium alloy support conductor

2. Screened HV ABC Cable (AL/XLPE/CWS/HDPE)

- Voltage ratings: 6.35/11 kV and 12.7/22 kV
- Aluminium phase conductors
- XLPE insulation with extruded semi-conductive layers
- Copper wire metallic screen
- Semi-conductive swellable tape
- HDPE outer sheath
- Galvanized steel wire support conductor

Cable Construction

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Non-Screened HV ABC Cable (AL/XLPE/HDPE)

Component	Description
Phase Conductor	Circular compacted stranded H68 aluminium to BS 2627
Conductor Screen	Extruded semi-conductive layer
Insulation	XLPE
Insulation Screen	Extruded semi-conductive layer
Outer Sheath	HDPE
Support Conductor	Aluminium alloy conductor (AAAC/1120)
Assembly	Three XLPE insulated cores are bundled around the AAAC/1120 support conductor in a right-hand lay

Screened HV ABC Cable (AL/XLPE/CWS/HDPE)

Component	Description
Phase Conductor	Circular compacted stranded H68 aluminium to BS 2627
Conductor Screen	Extruded semi-conductive layer
Insulation	XLPE
Insulation Screen	Extruded semi-conductive layer
Metallic Screen	Copper wire screen

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Separator	Semi-conductive swellable tape
Outer Sheath	HDPE
Support Conductor	Galvanized steel wires
Assembly	Three XLPE insulated screened cores are bundled around the galvanized steel wires in a right-hand lay

Applicable Standard

- AS/NZS 3599.1 – High Voltage Aerial Bundled Cables

Technical Data

6.35/11 kV Non-Screened HV ABC Cable – AL/XLPE/HDPE

Construction Parameters – AS/NZS 3599.1

Number of Cores × Nominal Cross Section (mm²)	Conductor Diameter (mm)	Insulation Thickness (mm)	Insulation Screen Thickness (mm)	Sheath Thickness (mm)	Messenger Stranding	Nominal Sectional Area (mm²)	Breaking Load (kN)
3×35	6.9	3.4	0.8	1.2	7/4.75	52.4	1370
3×50	8.1	3.4	0.8	1.2	7/4.75	54.6	1530
3×70	9.7	3.4	0.8	1.2	7/4.75	57.8	1790
3×95	11.4	3.4	0.8	1.2	7/4.75	61.3	2100
3×120	12.8	3.4	0.8	1.2	19/3.50	67.3	2540
3×150	14.2	3.4	0.8	1.2	19/3.50	70.1	2840
3×185	15.7	3.4	0.8	1.2	19/3.50	73.1	3190

Other cross-sections can be offered upon request.

6.35/11 kV Screened HV ABC Cable – AL/XLPE/CWS/HDPE

Light-Duty Screen

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Number of Cores × Nominal Cross Section (mm²)	Conductor Diameter (mm)	Insulation Thickness (mm)	Insulation Screen Thickness (mm)	Copper Wire Screen	Sheath Thickness (mm)	Galvanized Steel Wire Stranding	Nominal Sectional Area (mm²)	Breaking Load (kN)
3×35	6.9	3.4	0.8	25/0.85	1.8	7/2.00	54.1	1820
3×35	6.9	3.4	0.8	25/0.85	1.8	19/2.00	58.1	2130
3×50	8.1	3.4	0.8	25/0.85	1.8	19/2.00	60.4	2300
3×70	9.7	3.4	0.8	25/0.85	1.8	19/2.00	63.6	2570
3×95	11.4	3.4	0.8	25/0.85	1.8	19/2.00	67.0	2900
3×120	12.8	3.4	0.8	25/0.85	1.8	19/2.00	69.8	3190
3×150	14.2	3.4	0.8	25/0.85	1.9	19/2.00	73.0	3530
3×185	15.7	3.4	0.8	25/0.85	1.9	19/2.00	76.0	3890

Heavy-Duty Screen

Number of Cores × Nominal Cross Section (mm²)	Conductor Diameter (mm)	Insulation Thickness (mm)	Insulation Screen Thickness (mm)	Copper Wire Screen	Sheath Thickness (mm)	Galvanized Steel Wire Stranding	Nominal Sectional Area (mm²)	Breaking Load (kN)
3×35	6.9	3.4	0.8	40/0.85	1.8	7/2.00	54.1	2050
3×35	6.9	3.4	0.8	40/0.85	1.8	19/2.00	58.1	2360
3×50	8.1	3.4	0.8	23/1.35	1.8	19/2.00	62.4	2820
3×70	9.7	3.4	0.8	32/1.35	1.8	19/2.00	65.6	3440
3×95	11.4	3.4	0.8	39/1.35	1.8	19/2.00	69.0	4030
3×120	12.8	3.4	0.8	39/1.35	1.8	19/2.00	71.8	4320
3×150	14.2	3.4	0.8	39/1.35	1.9	19/2.00	75.0	4670
3×185	15.7	3.4	0.8	39/1.35	1.9	19/2.00	78.0	5020

Other cross-sections can be offered upon request.

12.7/22 kV Non-Screened HV ABC Cable – AL/XLPE/HDPE

Construction Parameters – AS/NZS 3599.1

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Number of Cores × Nominal Cross Section (mm²)	Conductor Diameter (mm)	Insulation Thickness (mm)	Insulation Screen Thickness (mm)	Sheath Thickness (mm)	Messenger Stranding	Nominal Sectional Area (mm²)	Breaking Load (kN)
3×35	6.9	5.5	0.8	1.2	7/4.75	61.0	1780
3×50	8.1	5.5	0.8	1.2	7/4.75	63.3	1970
3×70	9.7	5.5	0.8	1.2	7/4.75	66.5	2260
3×95	11.4	5.5	0.8	1.2	7/4.75	69.9	2600
3×120	12.8	5.5	0.8	1.2	19/3.50	75.9	3070
3×150	14.2	5.5	0.8	1.2	19/3.50	78.7	3390
3×185	15.7	5.5	0.8	1.2	19/3.50	81.7	3760

12.7/22 kV Screened HV ABC Cable – AL/XLPE/CWS/HDPE

Light-Duty Screen

Number of Cores × Nominal Cross Section (mm²)	Conductor Diameter (mm)	Insulation Thickness (mm)	Insulation Screen Thickness (mm)	Copper Wire Screen	Sheath Thickness (mm)	Galvanized Steel Wire Stranding	Nominal Sectional Area (mm²)	Breaking Load (kN)
3×35	6.9	5.5	0.8	25/0.85	1.8	7/2.00	62.7	2280
3×35	6.9	5.5	0.8	25/0.85	1.8	19/2.00	66.7	2580
3×50	8.1	5.5	0.8	25/0.85	1.8	19/2.00	69.0	2780
3×70	9.7	5.5	0.8	25/0.85	1.9	19/2.00	72.6	3110
3×95	11.4	5.5	0.8	25/0.85	1.9	19/2.00	76.0	3460
3×120	12.8	5.5	0.8	25/0.85	2.0	19/2.00	79.2	3810
3×150	14.2	5.5	1.0	25/0.85	2.0	19/2.00	82.8	4230
3×185	15.7	5.5	1.0	25/0.85	2.1	19/2.00	86.2	4650

Heavy-Duty Screen

Number of Cores × Nominal Cross Section (mm²)	Conductor Diameter (mm)	Insulation Thickness (mm)	Insulation Screen Thickness (mm)	Copper Wire Screen	Sheath Thickness (mm)	Galvanized Steel Wire Stranding	Nominal Sectional Area (mm²)	Breaking Load (kN)
3×35	6.9	5.5	0.8	40/0.85	1.8	7/2.00	62.7	2510
3×35	6.9	5.5	0.8	40/0.85	1.8	19/2.00	66.7	2810
3×50	8.1	5.5	0.8	23/1.35	1.8	19/2.00	71.0	3300
3×70	9.7	5.5	0.8	32/1.35	1.9	19/2.00	74.6	3970

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3×95	11.4	5.5	0.8	39/1.35	1.9	19/2.00	78.0	4600
3×120	12.8	5.5	0.8	39/1.35	2.0	19/2.00	81.2	4950
3×150	14.2	5.5	1.0	39/1.35	2.0	19/2.00	84.8	5360
3×185	15.7	5.5	1.0	39/1.35	2.1	19/2.00	88.2	5790

Manufacturing & Customization

Qingzhou Cable manufactures high-voltage aerial bundled cables in different conductor sizes, voltage ratings and screen configurations to meet overhead power distribution project requirements.

Available options include:

- 6.35/11 kV and 12.7/22 kV voltage ratings
- Non-screened and copper-wire-screened constructions
- Light-duty and heavy-duty metallic screens
- AAAC/1120 aluminium alloy or galvanized steel wire support systems
- Custom conductor sizes and cable configurations

Contact our technical and sales team for cable specifications, quotations and project-based manufacturing solutions.

Frequently Asked Questions (FAQ)

1. What is AS/NZS 3599.1 HV ABC cable?

AS/NZS 3599.1 HV ABC cable is a high-voltage aerial bundled cable designed for overhead power distribution networks. It features aluminium phase conductors with XLPE insulation and an HDPE outer sheath, with different support conductor and screening configurations available.

2. What voltage ratings are available for AS/NZS 3599.1 HV ABC cable?

The cable is available in 6.35/11 kV and 12.7/22 kV voltage ratings.

3. What is the difference between non-screened and screened HV ABC cables?

Non-screened HV ABC cables use an AAAC/1120 aluminium alloy support conductor, while screened HV ABC cables incorporate copper wire screens and galvanized steel wire support conductors. The construction configurations are designed to meet different network and installation requirements.

4. What materials are used for the phase conductors?

The phase conductors are circular compacted stranded H68 aluminium conductors, according to the supplied BS 2627 specification.

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5. What insulation and sheath materials are used?

The cable uses XLPE insulation with extruded semi-conductive conductor and insulation screen layers. HDPE is used as the outer sheath material.

6. What screening options are available?

Screened versions are available with copper wire metallic screens in light-duty and heavy-duty configurations, as listed in the construction tables.

7. What support conductor options are available?

Non-screened cables use AAAC/1120 aluminium alloy support conductors. Screened cables use galvanized steel wire support conductors.

8. Can Qingzhou Cable manufacture other conductor sizes?

Yes. Other cross-sections and project-specific cable configurations can be offered upon request.

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