Product Overview

QZ Cable supplies Covered Aerial Medium Voltage Conductors, including Tree Wire and Spacer Cable designs, for overhead power distribution networks.
Available with AAC (All Aluminium Conductor), AAAC (All Aluminium Alloy Conductor), and ACSR (Aluminium Conductor Steel Reinforced) conductor configurations, these products combine stranded overhead conductors with high-dielectric-strength insulation and protective outer coverings.
Depending on the design, the covering system may include cross-linked polyethylene (XLPE), high-density polyethylene (HDPE), track-resistant HDPE (TR-HDPE), or track-resistant XLPE (TK-XLPE).
Covered aerial conductors are designed for overhead distribution applications where additional protection against environmental exposure and incidental contact with surrounding vegetation is required. They are available in different insulation and covering configurations for various voltage classes.

Product Types

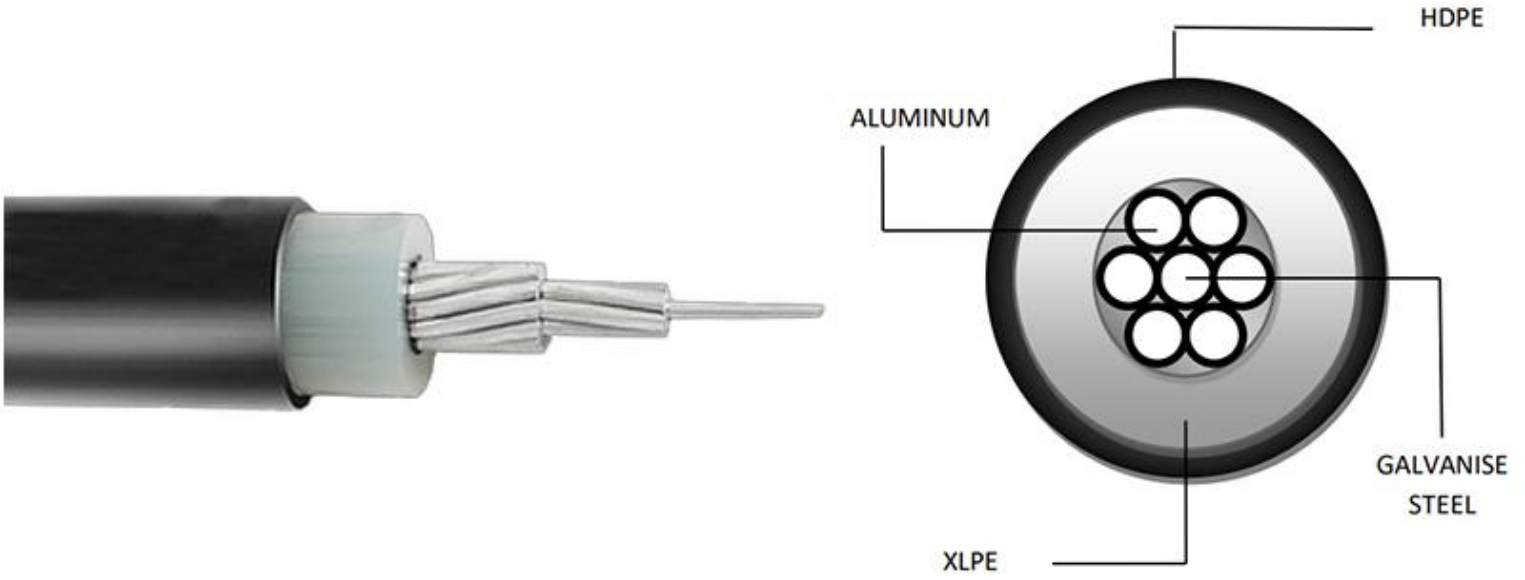
1. Tree Wire

Tree Wire is a covered overhead conductor designed for power distribution routes where trees and vegetation are close to the right-of-way, such as wooded residential areas.
The protective covering helps reduce power interruptions caused by incidental conductor contact with tree branches and may reduce the need for frequent or extensive vegetation trimming.
Tree Wire is available with AAC, AAAC, and ACSR conductor designs, depending on the required electrical and mechanical characteristics.

2. Spacer Cable

Spacer Cable is an overhead distribution system in which multiple covered phase conductors are installed close together, supported by a messenger and separated by a series of spacers.
This configuration can reduce the space and hardware required for overhead line installation. It is particularly useful in congested areas where conventional overhead line arrangements may require more space.
The complete system requires compatible covered conductors, supporting messenger, spacers, insulators, and associated fittings.

Conductor Options



Covered Aerial Medium Voltage Cable

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Conductor Type	Full Name	Main Construction
AAC	All Aluminium Conductor	Stranded hard-drawn aluminium wires
AAAC	All Aluminium Alloy Conductor	Stranded aluminium alloy wires
ACSR	Aluminium Conductor Steel Reinforced	Aluminium wires stranded around a galvanized steel core

The conductor type can be selected according to the required electrical performance, mechanical strength, line design, and project specifications.

Insulation and Covering Construction

The covering configuration depends on the voltage rating and product design.

One-Layer Covered Conductor

One-layer Tree Wire uses a covered conductor construction. The supplied product data identifies XLPE covering for the listed 5 kV and 15 kV designs.

Multi-Layer Covered Conductor

Multi-layer designs use a conductor shield and additional insulation or protective covering layers.

The supplied technical information identifies the following materials and options:

- **Conductor shield:** Extruded semi-conductive polymer.
- **Insulation:** Cross-linked polyethylene (XLPE).
- **Outer covering:** Weather-, tracking-, and sunlight-resistant high-density polyethylene (HDPE).
- **Track-resistant option:** Track-resistant HDPE (TR-HDPE) or track-resistant XLPE (TK-XLPE), depending on the specified design.

The exact layer arrangement and material selection should be confirmed for each voltage class and product construction.

Applications

Tree Wire Applications

- Overhead distribution lines in wooded residential areas.
- Distribution routes where tree branches are close to conductors.
- Areas where minimizing vegetation interference is an important design consideration.
- Overhead power networks requiring covered conductors.

Spacer Cable Applications

- Medium-voltage overhead distribution networks.
- Congested urban and residential areas.
- Overhead line installations requiring a compact conductor arrangement.
- Distribution systems using a supporting messenger and spacer assemblies.

Key Features and Benefits

Protection Against Environmental Exposure

Weather-resistant covering materials are specified for outdoor overhead installations.

Reduced Vegetation-Related Interruptions

Tree Wire covering helps reduce interruptions associated with incidental contact between conductors and tree branches.

Compact Overhead Line Configuration

Spacer Cable systems allow multiple covered conductors to be arranged in close proximity using spacers and a supporting messenger.

Multiple Conductor Designs

AAC, AAAC, and ACSR configurations are available in the supplied product range.

Different Covering Options

XLPE, HDPE, TR-HDPE, and TK-XLPE covering options are identified in the supplied technical information.

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Availability depends on the design and voltage rating.

Applicable Standards and References

The supplied technical information references the following standards:

Standard	Description
ASTM B230	Aluminum 1350-H19 Wire for Electrical Purposes
ASTM B231	Concentric-Lay-Stranded Aluminum 1350 Conductors
ASTM B232	Concentric-Lay-Stranded Aluminum Conductors, Coated-Steel Reinforced (ACSR)
ASTM B398	Aluminum-Alloy 6201-T81 and 6201-T83 Wire for Electrical Purposes
ASTM B399	Concentric-Lay-Stranded Aluminum-Alloy 6201-T81 Conductors
ASTM B400	Compact Round Concentric-Lay-Stranded Conductors
ASTM D2656	Cross-Linked Polyethylene Insulation for Wire and Cable Rated 2,001 to 35,000 V, as stated in the source
ASTM D1248	Polyethylene Plastics Extrusion Materials for Wire and Cable
ICEA S-61-402	Referenced for physical requirements of the conductor shield
ICEA S-66-524	Referenced for track-resistant XLPE covering

The source also refers to an American standard covering one-, two-, and three-layer overhead covered conductors for 5 kV, 15 kV, 25 kV, and 35 kV applications. The exact standard designation and editions should be confirmed before being stated as formal compliance claims.

Available Voltage Classes and Designs

Based on the supplied product information, the series includes:

Covering Design	Voltage Classes in Source	Conductor Types
One-layer Tree Wire	5 kV, 15 kV	AAC, ACSR
Two-layer Tree Wire	15 kV	AAC, AAAC, ACSR
Three-layer Tree Wire	15 kV, 25 kV, 35 kV	AAC, AAAC, ACSR
Three-layer Tree Wire	46 kV	AAC, AAAC, ACSR

The actual availability of each conductor and voltage combination should be confirmed against the approved manufacturing specification.

Technical Specifications

The supplied catalogue contains detailed dimensional and mechanical data for different conductor types and covering designs.

The one-layer product tables include:

- 5 kV AAC Tree Wire
- 5 kV ACSR Tree Wire
- 15 kV AAC Tree Wire
- 15 kV ACSR Tree Wire

One-Layer 5kv AAC Tree Wire (All-Aluminum Conductors)					
Size (AWG or kcmil)	Stranding	Cover Thickness (mils)	Cable O.D.+ (mils)	Rated Strenght (lbs)	Weight per 1000 ft. (lbs)
					XLP

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One-Layer 5kv AAC Tree Wire (All-Aluminum Conductors)					
Size (AWG or kcmil)	Stranding	Cover Thickness (mils)	Cable O.D.+ (mils)	Rated Strenght (lbs)	Weight per 1000 ft. (lbs)
4	7	80	385	793	72
2	7	80	443	1210	102
1	19	80	482	1570	121
1/0	19	80	522	1940	146
2/0	19	80	565	2400	176
3/0	19	80	616	2980	215
4/0	19	80	672	3620	263
250	37	80	718	4420	300
266.8	19	80	734	4470	322
300	37	80	771	5300	353
336.4	37	80	807	5790	391
350	37	80	821	6080	406
477	37	80	931	7820	536
500	37	80	950	8200	560
One-Layer 5kv ACSR Tree Wire (Aluminum Conductor Steel Reinforced)					
4	6/1	80	410	1770	94
2	6/1	80	476	2710	137
1	6/1	80	514	3370	166
1/0	6/1	80	558	4160	202
2/0	6/1	80	607	5040	247
3/0	6/1	80	662	6290	303
4/0	6/1	80	723	7930	374
266.8	18/1	80	769	6540	372
266.8	26/7	80	802	10700	449
336.4	18/1	80	844	8250	458
336.4	26/7	80	880	13400	555
397.5	18/1	80	903	9440	534
397.5	26/7	80	943	15500	647
477	18/1	80	974	11200	631
477	26/7	80	1018	185000	767
One-Layer 15kv AAC Tree Wire (All-Aluminum Conductors)					
4	7	150	525	793	114
2	7	150	583	1210	150
1	19	150	622	1570	172
1/0	19	150	662	1940	--
2/0	19	150	705	2400	236

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One-Layer 5kv AAC Tree Wire (All-Aluminum Conductors)					
Size (AWG or kcmil)	Stranding	Cover Thickness (mils)	Cable O.D.+ (mils)	Rated Strenght (lbs)	Weight per 1000 ft. (lbs)
3/0	19	150	756	2980	279
4/0	19	150	812	3620	333
266.8	19	150	874	4470	397
300	37	150	911	5300	432
336.4	37	150	947	5790	473
350	37	150	961	6080	489
477	37	150	1071	7820	631
500	37	150	1090	8200	656
One-Layer 15kv ACSR Tree Wire (Aluminum Conductor Steel Reinforced)					
4	6/1	150	550	1770	139
2	6/1	150	616	2710	188
1	6/1	150	654	3370	221
1/0	6/1	150	698	4160	261
2/0	6/1	150	747	5040	--
3/0	6/1	150	802	6290	372
4/0	6/1	150	863	7930	449
266.8	18/1	150	909	6540	451
266.8	26/7	150	942	10700	531
336.4	18/1	150	984	8250	545
336.4	26/7	150	1020	13400	645
397.5	18/1	150	1043	9440	626
397.5	26/7	150	1083	15500	743
477	18/1	150	1114	11200	730
477	26/7	150	1158	18500	870

2-Layer 15kV 25kV 35kV Tree Wire

- 15 kV two-layer AAC, AAAC, and ACSR Tree Wire

2-Layer 15kV ACSR Tree Wire				
4	6/1	250	75	75
2	6/1	316	75	75
1/0	6/1	398	75	75
2/0	6/1	447	75	75
3/0	6/1	502	75	75
4/0	6/1	563	75	75
266.8	18/1	609	75	75
266.8	26/7	642	75	75
336.4	18/1	684	75	75

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2-Layer 15kV ACSR Tree Wire				
336.4	26/7	720	75	75
336.4	30/7	741	75	75
397.5	18/1	743	75	75
397.5	24/7	772	75	75
397.5	26/7	783	75	75
477	24/7	846	75	75
477	26/7	858	75	75
477	30/7	883	75	75
556.5	18/1	879	75	75
556.5	24/7	914	75	75
556.5	26/7	927	75	75
636	18/1	940	75	75
636	24/7	977	75	75
636	26/7	990	75	75
795	26/7	1108	80	80
795	45/7	1063	80	80
2-Layer 15kV AAAC Tree Wire				
48.69	4	7	250	75
77.47	2	7	316	75
123.3	1/0	7	398	75
155.4	2/0	7	447	75
195.7	3/0	7	502	75
246.9	4/0	7	563	75
312.8	266.8	19	642	75
394.5	336.4	19	720	75
465.4	397.5	19	782	75
559.5	477	19	858	75
652.4	556.5	19	927	75
740.8	636	37	990	80
2-Layer 15kV AAC Tree Wire				
1/0	7	336	75	75
2/0	7	376	75	75
3/0	7	423	75	75
4/0	7	475	75	75
266.8	19	537	75	75
336.4	19	603	75	75
397.5	19	659	75	75
477	19	722	75	75

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2-Layer 15kV ACSR Tree Wire				
556.5	37	780	75	75
636	37	835	75	75

3-Layer 15kV 25kV 35kV Tree Wire

- 15 kV three-layer AAC, AAAC, and ACSR Tree Wire
- 25 kV three-layer AAC, AAAC, and ACSR Tree Wire
- 35 kV three-layer AAC, AAAC, and ACSR Tree Wire
- 46 kV three-layer AAC, AAAC, and ACSR Tree Wire

3-Layer 15kV ACSR Tree Wire				
Size (AWG or kcmil)	Stranding	Conductor Diameter (mils)	Covering Thickness (mils)	Cable O.D. (mils)
			Conductor Shield	Inner Layer
4	6/1	250	15	75
2	6/1	316	15	75
1/0	6/1	398	15	75
2/0	6/1	447	15	75
3/0	6/1	502	15	75
4/0	6/1	563	15	75
266.8	18/1	609	15	75
266.8	26/7	642	15	75
336.4	18/1	684	15	75
336.4	26/7	720	15	75
336.4	30/7	741	15	75
397.5	18/1	743	15	75
397.5	24/7	772	15	75
397.5	26/7	783	15	75
477	24/7	846	15	75
477	26/7	858	15	75
477	30/7	883	15	75
556.5	18/1	879	20	75
556.5	24/7	914	20	75
556.5	26/7	927	20	75
636	18/1	940	20	75
636	26/7	990	20	75
3-Layer 15kV AAAC Tree Wire				
48.69	4	7	250	15
77.47	2	7	316	15
123.3	1/0	7	398	15
155.4	2/0	7	447	15
195.7	3/0	7	502	15

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3-Layer 15kV ACSR Tree Wire				
Size (AWG or kcmil)	Stranding	Conductor Diameter (mils)	Covering Thickness (mils)	Cable O.D. (mils)
246.9	4/0	7	563	15
312.8	266.8	19	642	15
394.5	336.4	19	720	15
465.4	397.5	19	783	15
559.5	477	19	858	15
652.4	556.5	19	927	20
740.8	636	37	990	20
3-Layer 15kV AAC Tree Wire				
1/0	7	336	15	75
2/0	7	376	15	75
3/0	7	423	15	75
4/0	7	475	15	75
266.8	19	537	15	75
336.4	19	603	15	75
397.5	19	659	15	75
477	19	722	15	75
556.5	37	780	20	75
636	37	835	20	80
795	37	932	20	80
3-Layer 25kV ACSR Tree Wire				
1/0	6/1	398	15	125
2/0	6/1	447	15	125
3/0	6/1	502	15	125
4/0	6/1	563	15	125
266.8	18/1	609	15	125
266.8	26/7	642	15	125
336.4	18/1	684	15	125
336.4	26/7	720	15	125
336.4	30/7	741	15	125
397.5	18/1	743	15	125
397.5	24/7	772	15	125
397.5	26/7	783	15	125
477	24/7	846	20	125
477	26/7	858	20	125
477	30/7	883	20	125
556.5	18/1	879	20	125
556.5	24/7	914	20	125

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3-Layer 15kV ACSR Tree Wire				
Size (AWG or kcmil)	Stranding	Conductor Diameter (mils)	Covering Thickness (mils)	Cable O.D. (mils)
556.5	26/7	927	20	125
3-Layer 25kV AAAC Tree Wire				
48.69	4	7	250	15
77.47	2	7	316	15
123.3	1/0	7	398	15
155.4	2/0	7	447	15
195.7	3/0	7	502	15
246.9	4/0	7	563	15
312.8	266.8	19	642	15
394.5	336.4	19	720	15
465.4	397.5	19	783	15
559.5	477	19	858	20
652.4	556.5	19	927	20
740.8	636	37	990	20
927.2	795	37	1108	20
3-Layer 25kV AAC Tree Wire				
1/0	7	336	15	125
2/0	7	376	15	125
3/0	7	423	15	125
4/0	7	475	15	125
266.8	19	537	15	125
336.4	19	603	15	125
397.5	19	659	15	125
477	19	722	20	125
556.5	37	780	20	125
636	37	835	20	125
795	37	932	20	125
3-Layer 35kV ACSR Tree Wire				
1/0	6/1	398	15	175
2/0	6/1	447	15	175
4/0	6/1	563	15	175
266.8	18/1	609	15	175
266.8	26/7	642	15	175
336.4	18/1	684	15	175
336.4	26/7	720	15	175
336.4	30/7	741	15	175
397.5	18/1	743	15	175

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3-Layer 15kV ACSR Tree Wire				
Size (AWG or kcmil)	Stranding	Conductor Diameter (mils)	Covering Thickness (mils)	Cable O.D. (mils)
397.5	24/7	772	15	175
397.5	26/7	783	15	175
477	24/7	846	20	175
477	26/7	858	20	175
477	30/7	883	20	175
556.5	18/1	879	20	175
556.5	24/7	914	20	175
556.5	26/7	927	20	175
636	18/1	940	20	175
636	26/7	990	20	175
795	26/7	1107	20	175
795	45/7	1063	20	175
3-Layer 35kV AAAC Tree Wire				
48.69	4	7	250	15
77.47	2	7	316	15
123.3	1/0	7	398	15
155.4	2/0	7	447	15
195.7	3/0	7	502	15
246.9	4/0	7	563	15
312.8	266.8	19	642	15
394.5	336.4	19	720	15
465.4	397.5	19	783	15
559.5	477	19	858	20
652.4	556.5	19	927	20
3-Layer 35kV AAC Tree Wire				
1/0	7	336	15	175
2/0	7	376	15	175
3/0	7	423	15	175
4/0	7	475	15	175
266.8	19	537	15	175
336.4	19	603	15	175
397.5	19	659	15	175
477	19	722	20	175
556.5	37	780	20	175
636	37	835	20	175
795	37	932	20	175

Detailed conductor sizes, stranding, conductor diameter, covering thickness, overall diameter, rated strength, and

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weight should be selected from the applicable product-specific technical table.

Manufacturing and Customization

QZ Cable can review project requirements for covered aerial medium-voltage conductors according to the required conductor type, voltage class, covering construction, and applicable technical specification.
For a technical quotation, please provide:

- Product type: Tree Wire or Spacer Cable
- Conductor type: AAC, AAAC, or ACSR
- Rated voltage
- Required conductor size and stranding
- Number of covering layers
- Required covering material
- Applicable standard and project specification
- Required quantity and delivery length

Frequently Asked Questions

1. What is Tree Wire?

Tree Wire is a covered overhead conductor used in distribution routes where trees and vegetation are close to the power line. Its covering helps reduce interruptions caused by incidental contact with tree branches.

2. What is Spacer Cable?

Spacer Cable is a compact overhead distribution arrangement in which covered phase conductors are supported by a messenger and separated by spacers.

3. What conductor types are available?

The supplied product range includes AAC, AAAC, and ACSR conductor designs.

4. What voltage ratings are available?

The source catalogue includes one-layer designs at 5 kV and 15 kV, two-layer designs at 15 kV, three-layer designs at 15 kV, 25 kV, and 35 kV, and a separate 46 kV three-layer range.

5. Which covering materials are used?

The source identifies XLPE, HDPE, track-resistant HDPE (TR-HDPE), and track-resistant XLPE (TK-XLPE). The actual material combination depends on the product design.

6. Is covered conductor equivalent to fully insulated cable?

Not necessarily. Covered overhead conductors are designed for specific overhead line configurations and must be installed according to the applicable system design, clearances, and safety procedures. The covering should not be treated as authorization for direct contact with an energized conductor.

7. Can the conductor be customized?

Conductor type, size, stranding, voltage class, and covering configuration can be reviewed according to project requirements and the confirmed manufacturing range.

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