

■ CONDUCTOR & CABLE GUIDE

Utilities & Infrastructure

Bare conductors and copper medium-voltage cable for utility and infrastructure projects.



■ 01

Bare conductors

ACSR, AAC, AAAC and bare copper. Materials, standards, code names and stranding.

■ 02

Copper MV cable

TR-XLPE construction, voltage classes, insulation levels and concentric neutrals.

■ 03

Project supply

Technical documentation, reel preparation, traceability and scheduled delivery.

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■ ALUMINUM CONDUCTOR, STEEL REINFORCED

ACSR

Our ACSR combines 1350-H19 aluminum strands with a galvanized steel core for overhead transmission and distribution. Conductor area and stranding follow the approved construction.



1350-H19 aluminum

Galvanized steel core

ASTM B230 / B232

Selected North American code names

CODE NAME	SIZE ¹	AL / STEEL ²
Sparrow	2 AWG	6/1
Raven	1/0 AWG	6/1
Penguin	4/0 AWG	6/1
Waxwing	266.8	18/1
Partridge	266.8	26/7
Merlin	336.4	18/1
Linnet	336.4	26/7
Ibis	397.5	26/7
Hawk	477	26/7
Dove	556.5	26/7
Grosbeak	636	26/7
Drake	795	26/7

Steel core

The specified steel grade, coating and strand arrangement establish the reinforcement construction. Sag and tension are assessed for the line loading conditions.

Stranding comparison

Waxwing and Partridge both have 266.8 kcmil of aluminum, with 18/1 and 26/7 stranding respectively. Their diameters, weights and strength differ.

Construction-specific hardware

Splices, dead-ends and suspension hardware must match the conductor diameter, material and strand arrangement.

¹ Sizes in kcmil unless AWG is stated; ACSR size denotes aluminum area. ² Aluminum / steel strand counts. Code names identify industry constructions; we confirm the construction and availability for each order.

■ ALL-ALUMINUM CONDUCTOR

AAC

Our AAC conductors use concentric-lay-stranded 1350-H19 aluminum for overhead distribution and station connections. Conductor class and stranding follow project requirements.



1350-H19 aluminum

ASTM B230 / B231

Selected North American code names

CODE NAME	SIZE ¹	STRANDS
Iris	2 AWG	7
Poppy	1/0 AWG	7
Aster	2/0 AWG	7
Oxlip	4/0 AWG	7
Laurel	266.8	19
Tulip	336.4	19
Canna	397.5	19
Cosmos	477	19
Dahlia	556.5	19
Mistletoe	556.5	37
Orchid	636	37
Arbutus	795	37

Application

Used where the span and loading requirements suit an unreinforced aluminum conductor. Wind, ice and sag-tension requirements govern mechanical selection.

Stranding comparison

Dahlia and Mistletoe both provide 556.5 kcmil, using 19 and 37 strands. Strand count and class affect flexibility and connection selection.

Station connections

Flexible jumpers and apparatus connections may require a different stranding class from the overhead line conductor.

¹ Sizes in kcmil unless AWG is stated. Table shows selected conventional round-wire constructions. Code names are industry references; conductor class, lay and final dimensions follow the approved specification.

■ ALL-ALUMINUM-ALLOY CONDUCTOR

AAAC

AAAC uses concentric-lay-stranded 6201-T81 aluminum alloy for overhead primary and secondary distribution. These all-alloy constructions contain no steel core.



6201-T81 aluminum alloy

Concentric-lay, round-wire construction

ASTM B398 / B399

Selected North American code names

CODE NAME	KCMIL	STRANDS
Akron	30.58	7
Alton	48.69	7
Ames	77.47	7
Azusa	123.3	7
Anaheim	155.4	7
Amherst	195.7	7
Alliance	246.9	7
Butte	312.8	19
Canton	394.5	19
Cairo	465.4	19
Darien	559.5	19
Elgin	652.4	19
Flint	740.8	37
Greeley	927.2	37

Mechanical characteristics

The alloy provides mechanical strength without a steel reinforcement layer. Final sag and tension depend on the selected construction and line conditions.

Conductor area

AAAC areas may differ from familiar AAC or ACSR sizes. Similar outside diameters do not establish electrical or mechanical equivalence.

Construction review

We review AAAC size, alloy, temper, stranding and standard, and confirm construction and production availability for each project.

Code names and dimensions are industry references. We confirm AAAC availability, construction and documentation for each project. Schematic shows a generic strand arrangement, not a dimensional product drawing.

Bare & overhead conductor families +

■ GROUNDING & BONDING CONDUCTORS

Bare copper

Our bare copper conductors are available in solid and stranded constructions for ground grids, equipment bonding and station grounding systems. Size, temper and stranding follow the approved project specification.



Solid or stranded

Soft / medium-hard / hard

Uninsulated copper

Copper tempers & wire standards

TEMPER	TYPICAL SELECTION FOCUS	WIRE STANDARD
Soft / annealed	Ground grids and bonds where bendability is important.	ASTM B3
Medium-hard	Specified balance of strength and formability.	ASTM B2
Hard-drawn	Specified applications with greater tensile demands.	ASTM B1

Stranding & size

Our concentric-lay-stranded copper conductors are specified to ASTM B8. Order documentation identifies the conductor size, temper and strand construction.

Ground-grid design

Fault duty and clearing time, soil conditions, corrosion and connection design establish the required conductor. Grid performance also depends on layout and touch/step-voltage assessment.

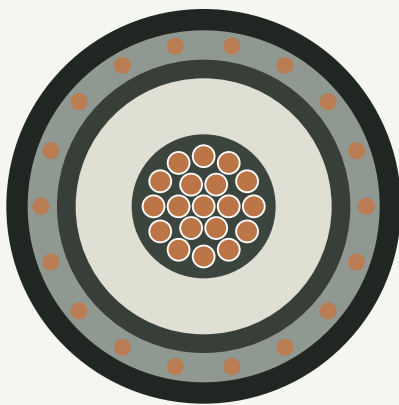
We document conductor size, temper, stranding and the applicable standard for the selected copper construction.

Bare copper product information +

■ CONSTRUCTION & RATINGS

Copper MV TR-XLPE

Our copper MV TR-XLPE cable combines copper conductors, concentric neutrals and an LLDPE outer jacket in a single-conductor construction for utility feeders and underground distribution.



Construction schematic; not to scale.

- 01 Copper conductor**
Current-carrying phase conductor
- 02 Conductor shield**
Semiconducting interface
- 03 TR-XLPE insulation**
Tree-retardant cross-linked polyethylene
- 04 Insulation shield**
Semiconducting outer screen
- 05 Metallic neutral / shield**
Copper wires, sized for the circuit
- 06 Outer jacket**
Linear low-density polyethylene (LLDPE)

5-46 kV

Voltage range

2 AWG-1500 kcmil

Copper conductor sizes

90°C

Operating temperature

Cable construction

Our cable specifications define the conductor, insulation, concentric neutral and jacket dimensions for each construction.

Standard & certification

Our MV cable family is covered by CSA C68.5 certification 80222535. Ratings and certification scope are specific to the approved cable construction.

Insulation levels: 100% / 133% / 173%

Level selection follows the system grounding and ground-fault clearing requirements.

Voltage, conductor size and insulation level combinations depend on the construction. We confirm ratings and documentation for the approved cable.

MV TR-XLPE product information +

■ APPLICATIONS & CONFIGURATIONS

Copper MV applications

Our copper MV TR-XLPE constructions serve utility feeders, underground distribution and substation connections, with LLDPE jackets and project-specific concentric neutrals.

Typical utility applications

APPLICATION	CABLE USE
Utility feeders	Primary circuits between substations, switching points and distribution transformers.
Underground distribution	Cable circuits serving utility distribution networks, with construction suited to the specified duct or burial installation.
Substation connections	MV connections between switchgear, transformers and incoming or outgoing feeder circuits.

Concentric-neutral configurations

CONFIGURATION	CONSTRUCTION
Full neutral	Copper neutral wires are applied around the insulation shield. Wire count and size follow the approved full-neutral construction.
Reduced neutral	Configurations such as 1/3 or 1/6 neutral, where specified by the utility. Wire count and size reflect the required neutral-current and earth-fault duty.

LLDPE outer jacket

Linear low-density polyethylene (LLDPE) outer jacket, with dimensions defined by the cable specification.

Joints & terminations

Our construction data provides conductor and cable dimensions for matching joints, elbows and terminations to the selected cable.

We confirm conductor size, voltage, insulation level and neutral construction for each cable. Neutral fractions describe an electrical relationship, not a fraction of the phase strand count.

MV TR-XLPE product information +

■ MANUFACTURING, PREPARATION & DELIVERY

Project supply & documentation

We work with you to align conductor and cable requirements, reel preparation and delivery with the project schedule.



■ ORDER SPECIFICATION

Bare conductors: family, code name, size, stranding, material, temper and standard.

Copper MV: conductor size, voltage, insulation level, neutral construction and jacket.

Delivery: quantities, reel lengths, destinations and required dates.

Reel preparation & protection

Reel lengths aligned with stringing sections or underground pulls. MV cable-end protection and handling arrangements follow the selected cable and preparation requirements.

Technical documentation

Construction details, applicable certification records and dimensional and electrical checks support product review and conformity.

Identification & delivery

Reel and batch identification support traceability. Project labels identify feeder, pull section or destination; grouped releases follow the installation sequence.

Responsible manufacturing

We embed responsible raw material sourcing, ethical labour practices and rigorous production controls into our cable manufacturing.

Contact EdisonFlex

sales@edisonflex.com

1-800-585-3029

Available exclusively through authorized distributors.

