

Transmission & Distribution
Material & Installation Specification

Overhead Conductor, ACSR and Aluminum

I. Quantity

The base bid shall include the indicated quantity of overhead conductor, ACSR and aluminum furnished and installed as hereinafter specified.

II. Material

A. Aluminum cable XLP - Conductor shall be designed for use in the overhead distribution of power from pole to building weather-head. Wire shall be concentrically stranded, uncoated, aluminum ACSR conductor covered with cross-linked polyethylene (XLP) insulation. Wire shall be sized per schedule in TDMIS-1501, sheet 3 and shall meet and/or exceed all requirements of the latest edition of the standards listed below.

ASTM B-230	Aluminum 1350-H19 Wire for Electrical Purposes
ASTM B-232	Concentric-Lay-Stranded Aluminum Conductors, Coated Steel Reinforced (ACSR)
ASTM B-1248	Polyethylene Plastics molding and Extrusion Materials
ICEA S-61-402 / NEMA WC 5-1973	Thermoplastic Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy

B. ACSR - This shall be designed for use in overhead electrical distribution and transmission lines for distributing power. Wire shall be bare, EC grade, hard drawn aluminum conductors, concentrically stranded around an inner core of a galvanized steel core. Wire shall be sized per schedule in TDMIS-1501, sheet 3 and shall meet and/or exceeds all requirements of the latest edition of the standards listed below.

ASTM B-230	Aluminum 1350-H19 Wire for Electrical Purposes
ASTM B-231	Concentric-Lay-Stranded Aluminum Conductors

ASTM B-232 Concentric-Lay-Stranded Aluminum Conductors, Coated Steel Reinforced (ACSR).

ASTM B-498 Zinc-Coated Steel Core Wire for Aluminum Conductors, Steel Reinforced (ACSR)

C. Aluminum service drop cable 600V XLP - Cable shall be designed for use in 600-volts phase-to-phase or less and at conductor temperatures not to exceed 90 degree C for normal operation. The cable conductor shall be concentrically stranded, compressed aluminum with a cross-linked polyethylene (XLP) insulated jacket, while the cable neutral messenger shall be a concentrically stranded ACSR bare cable. The conductors are to be manufactured with ridges for phase identification. Wire shall be sized per schedule in TDMIS-1501, sheet 3 and shall meet and/or exceed all requirements of the latest edition of the standards listed below.

ASTM B-230	Aluminum 1350-H19 Wire for Electrical Purposes
ASTM B-231	Concentric-Lay-Stranded Aluminum Conductors
ASTM B-232	Concentric-Lay-Stranded Aluminum Conductors, Coated Steel Reinforced (ACSR).

D. Aluminum tie wire - This is designed for use in overhead transmission and distribution line construction to mechanically secure components to pin insulators. Wire shall be a solid soft drawn, uncoated aluminum. Wire shall be sized per schedule in TDMIS-1501, sheet 3 and shall meet and/or exceed all requirements of the latest edition of the standards listed below.

ASTM B-609 Soft Aluminum Wire for Electrical Purposes

III. Installation

A. The installation shall be as required by the manufacturers recommendations. Use recommended rollers and pulling grips. Sag shall be according to the manufacturer provided charts and the initial tension documented along with temperature read on a certified thermometer. This data shall be provided to DOP for approval before energizing conductors.

CITY OF COLUMBUS DEPT. OF PUBLIC UTILITIES – DIVISION OF POWER OVERHEAD CONDUCTOR, ACSR AND ALUMINUM		
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- B. Conductors shall be payed out from reels or hand coils. Dragging conductors shall not be permitted.
- C. Conductors must be handled with care. Conductors shall neither be trampled on nor run over by vehicles. Each reel shall be examined and the conductor shall be inspected for cuts, kinks, or other injuries. Injured portions shall be cut out.
- D. Conductors shall be pulled over suitable rollers or stringing blocks designed for the purpose, properly mounted on poles or crossarm as necessary to prevent binding while stringing.
- E. All conductors shall be cleaned thoroughly by wire brushing before splicing or installing connectors or clamps. A suitable oxide inhibitor shall be used before splicing or applying connectors over conductors.
- F. Connectors - Aluminum H-Tap compression type sized as appropriate for line and tap conductors.
- G. Tape Insulation: shall be 1.5% insulation thickness 3M #130C high voltage rubber tape with 5 minimum wraps of 3M 88 vinyl outer tape seal.
- H. Finished installation shall not include more than one splice in any one span and splices shall not be located within 20 feet of a conductor support. No splices shall be permitted over road or highway crossings, rail road crossings, or water crossings.

V. Basis of payment

Items	Unit	Description
TDMIS-1501	1000 linear foot	Overhead conductor, ACSR and aluminum
Example: 1,248 LF = 1.284 * unit price per thousand LF		

IV. Method of measurement

Shall be based on a completed conductor installation including sag, tension, guy adjustments, spacers, ties, dead end grips, connections, labor, equipment, tools, testing, and supervision required for a complete and operational system.

Measurement shall be from pole to pole, or pole to structure with no additional adders for sag or jumpers.

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ALUMINUM XLP

DOP PART #	CONDUCTOR SIZE (AWG)	STRANDS	INDUSTRY CODE WORD
20094	2	6/1	PIGNUT
19953	2/0	6/1	PECAN
19957	4/0	6/1	BUCKEYE

ACSR

PART #	CONDUCTOR SIZE (AWG)	STRANDS	INDUSTRY CODE WORD
19963	336	18/1	MERLIN
19964	336	26/7	LINNET
19975	556	26/7	DOVE
19981	795	26/7	DRAKE

ALUMINUM SERVICE DROP 600V XLP

DOP PART #	CONDUCTOR SIZE (AWG)/STRANDING	NEUTRAL SIZE (AWG)/STANDING	TYPE	INDUSTRY CODE WORD
20085	6-7	6-6/1	DUPLEX	SHEPHERD
20086	6-7	6-6/1	TRIPLEX	VOLUTA
20098	2-7	2-6/1	TRIPLEX	CONCH
19954	2/0-7	2/0-6/1	TRIPLEX	RUNCINA
19960	4/0-7	4/0-6/1	TRIPLEX	RAZOR
19944	2-7	2-6/1	QUADRUPLEX	PALOMINO
19956	2/0-19	2/0-6/1	QUADRUPLEX	GRULLO
19961	4/0-19	4/0-6/1	QUADRUPLEX	APPALOOSA

ALUMINUM TIE WIRE

DOP PART #	CONDUCTOR SIZE (AWG)	TEMPER
20081	6	SOFT-DRAWN

CITY OF COLUMBUS, OHIO
DEPT. OF PUBLIC UTILITIES - DIVISION OF POWER

**OVERHEAD CONDUCTOR,
ACSR AND ALUMINUM
MCA**

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SCALE: NONE SHEET: 3 OF 3

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