

LIST OF MATERIALS
Acceptable for Use on Systems
of USDA Rural Development
Electrification Borrowers

United States Department of Agriculture
Rural Development Utilities Programs
Electric Programs

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DISCLAIMER

*Every effort has been made to ensure the accuracy of this document.
However, in case of discrepancies, records of Technical Standards
Committee "A" are the authoritative source.*

al - Staples, ground wire

Applicable Specification: ANSI C135.14, "Standards for Staples with Rolled or Slash Points"

Length x Spread (inches)	1-1/2 x 1/4	2 x 1/2	1-1/2 x 3/8	3 x 1-1/16
Diameter	9 gauge Galv. Steel	8 gauge Galv. Steel	8 gauge Copper-Coated	1/4 Moulding
Apollo	AP52I-S1672G	AP521-S1570	AP501-S6652	AP500-S6497
Copperweld Bimetallics, LLC	-	CP52	-	-
FWC	FW1672G	FW157	FW6652	FW6497
Hubbell (Chance)	C205-0247	C205-0216	9167	9161
Joslyn	J1672G	J157	J6652	J6497
Kortick	-	-	K247	K236
L & J Industrial Staples	C1525148-G	D2050162-G	C1538162-C	D3090250-C
Larson	-	350453	750233	721312
Lindsey	10248	-	-	10270
Redmore Products	SCSG1525148	SDSG2050162	SCCC1538162	SDSG3090250
MacLean (Continental)	U88	U86	U48	U46

Barbed staples, ground wire

Length x Spread (inches)	1-1/2 x 3/8	2 x 5/8	1-1/2 x 3/8	3 x 1-1/16
Diameter	.131 Galv. Steel	.165 Galv. Steel	.140 Copper-Coated	7/32 Galv. Steel
Apollo	AP520-57488HTG	AP50I-S66525	-	-
Hubbell Power Systems	C205-0460	C205-0463	C205-0464	C205-0462
Joslyn	J7656	J7672	J7682	J7664
Redmore Products	-	TDSG2063187	TCCC1538162	TDSG3090250

Staples, alumoweld

Length x Spread (inches)	2 x 1/2	1-1/2 x 3/8	3 x 1-1/16
Diameter	8 gauge	8 gauge	1/4 moulding
Apollo	AP531-S6655AL	AP531-S6652AL	AP530-S7493AL
Redmore Products	-	-	SDAA3090250

Clip, ground wire

Kearney/Cooper Power Systems	12326
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av – Conductor, ACSR

Applicable Specification: ASTM Specification B 232

Preferred Sizes:

<u>Distribution</u>	<u>Transmission</u>
4 – 6/1	1/0 – 6/1
4 – 7/1	2/0 – 6/1
2 – 6/1	3/0 – 6/1
2 – 7/1	4/0 – 6/1
1/0 – 6/1	266.8 kcmil – 26/7
2/0 – 6/1	336.4 kcmil – 26/7
3/0 – 6/1	477 kcmil – 26/7
4/0 – 6/1	556.5 kcmil – 26/7
266.8 kcmil 18/1	795 kcmil – 26/7
336.4 kcmil 18/1	954 kcmil – 54/7
477 kcmil 18/1	

NOTE: Larger sizes may be used where the engineer's study shows they are required.

The following manufacturers have shown compliance with the applicable specifications:

Alcan Cable
Conductores Monterrey S.A. de C.V.
Condumex
General Cable
Kobrex S.A. de C.V.
Marmon Utility LLC (Hendrix/Kerite)
Midal Cables Ltd.
Nehring
Nexans Canada
Nexans Korea
Noranda
Phelps Dodge
Phelps Dodge - Honduras
Prysmian
Southwire
Synergy Cables USA, Ltd.
Taihan Electric Wire

NOTES:

1. Conductors with 18/1 stranding have different sag characteristics than conductors with 6/1 or 26/7 stranding. This difference in sag characteristics must be taken into consideration in the line design.
2. 266.8 kcmil 26/7, 336.4 kcmil 26/7, and 477 kcmil 26/7 may be used for distribution underbuild on transmission lines.

av - Conductor, Copper and Copper-clad steel

Applicable Specification: ASTM Specification B 229

<u>Preferred Sizes</u>	
<u>Distribution</u>	<u>Transmission</u>
8A	1/0 F
6A	2/0 F
4A	3/0 F
2A	4/0 F

The following manufacturers have shown compliance with the applicable specification for the sizes indicated:

Copperweld Bimetallics, LLC	(All sizes)
Southwire	(2A and smaller)

av - conductor

<u>Manufacturer</u>	<u>Conditions</u>
<u>Alcan Cable</u> Duplex type, with ACSR or AAAC (6201) conductors using preferred conductor sizes.	<ol style="list-style-type: none">1. To obtain experience.2. Conductor handling and installation shall be in accordance with manufacturer's recommendations.
<u>Copperweld Bimetallics, LLC</u> Alumoweld-aluminum 6/1 ACSR/AW, 2, 1/0, 2/0, 4/0 4/3 AWAC, 4, 2, 1/0	<ol style="list-style-type: none">1. To obtain experience.
<u>General Cable</u> ACSR/TW, ACSS/TW conductors using preferred conductor sizes.	<ol style="list-style-type: none">1. To obtain experience.2. Conductor handling and installation shall be in accordance with manufacturer's recommendations.3. Indicate type of steel core wire and class (if applicable) of coating.
<u>Phelps Dodge</u> ACSR/TW, ACSS/TW conductors using preferred conductor sizes.	<ol style="list-style-type: none">1. To obtain experience.2. Conductor handling and installation shall be in accordance with manufacturer's recommendations.3. Indicate type of steel core wire and class (if applicable) of coating.
<u>Viakon Conductores Monterrey</u> ACSR/AW-TP conductors using preferred conductor sizes.	<ol style="list-style-type: none">1. To obtain experience.2. Conductor handling and installation shall be in accordance with manufacturer's recommendations.3. Indicate type of steel core wire and class (if applicable) of coating.

cj - Pole Ground Wire

Soft annealed iron, BB Grade, class C galvanizing
(For pole protection only)

Size
1.15 Ohms/1000 ft., max.

Manufacturer

Florida Wire and Cable	3-wire, 5/16 inch
Indiana Steel and Wire	3-wire, 5/16 inch
National Strand Products	3-wire, 5/16 inch
Southwire	3-wire, 5/16 inch

Copper, soft annealed solid
ASTM Specification B3

Manufacturer
(See page av-2)

Aluminum (for above ground use only)
Hard-drawn

Manufacturer
(See page av-1)

Aluminum Alloy (for above ground use only)

<u>Manufacturer</u>	<u>Type</u>
Alcan Cable	6201
American Electrical	6201
Southwire	6201

Copper-Clad Steel, Annealed 40 percent Conductivity

<u>Manufacturer</u>	<u>Size</u>
CommScope BiMetals*	No. 6
Copperweld Bimetallics, LLC*	No. 6

* Not for use on distribution when neutral is larger than #1/0 ACSR.

ea - Insulators, horizontal post type (polymer for wood and fiberglass transmission poles) (clamp end fittings and curved bases for use for round poles)							
Voltage:	34.5 kV	46 kV	69 kV	115 kV	138 kV	138 kV	
ANSI Class:	51-34	51-35	51-36	250-54	250-60	250-66	
Rated SCL (lbs.):	2400	2400	2400	2650	2300	2000	
Manufacturer							Conditions
Hubbell	80S0460100		80S0690100				To obtain experience.

* Notes :

1. Flat base for use with flat surface poles
2. Universal base for flat as well as curved poles
3. Two hole blade end fitting available.

ea - Insulators, horizontal post type (polymer for steel and concrete transmission poles)				
Voltage:	115 kV	138 kV	138 kV	
ANSI Class:	250-60	250-66	250-75	
Manufacturer				Conditions