Revision 5
Apr 6, 2020

1. Scope

1.1 Description

This specification covers the technical requirements for single bare copper conductors as specified in the Special Provision Sheet.

1.2 Conductor Size and Temper

Bare copper conductors, as specified in the Special Provision Sheet, shall be the size and temper indicated below in Table 1. The following temper abbreviations are used in this material standard:

DSA Dead Soft Annealed
MHD Medium-Hard-Drawn
HD Hard-Drawn

MID	Size	Strand(s)	Temper	Weight (lb/ft)
848517	14 AWG	1	DSA	0.0124
848484	6 AWG	1	DSA	0.0794
848088	6 AWG	1	MHD	0.0794
848476	4 AWG	1	DSA	0.1264
848070	4 AWG	1	MHD	0.1264
1000027	2 AWG	1	DSA	0.2009
848054	2 AWG	1	MHD	0.2009
847923	1/0 AWG	7	MHD	0.3257
847915	2/0 AWG	7	MHD	0.4109
847890	4/0 AWG	7	MHD	0.6533
847907	4/0 AWG	19	DSA	0.6533
847866	500 kcmil	37	DSA	1.5440

2. Reference Standards

Unless otherwise stated in this specification, bare copper conductors shall comply with the latest revisions of the following standards:

ASTM B2 Standard Specification for Medium-Hard-Drawn Copper Wire
ASTM B3 Standard Specification for Soft or Annealed Copper Wire
ASTM B8 Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft
NEMA WC 26 Binational Wire and Cable Packaging Standard

3. Conductor Identification

Bare copper conductors, with the exception of #14 AWG DSA (Cat. ID 848517), #2 AWG MHD (Cat. ID 848054) and 500 kcmil DSA (Cat. ID 847866) shall be clearly and neatly indent-printed with the word "SNOPUD" a minimum of every 2 feet. Stranded conductors shall be indent-printed on the center strand.

4. Reel Marking

The following information shall be legibly marked or tagged on the outside of each wooden or plastic reel or hand coil:

4.1 Net weight, tare weight, gross weight (not applicable to AWG sizes 14, 6, 4 and 2)
4.2 District's purchase order number
4.3 Manufacturer's serial or reel number (not applicable to AWG sizes 14, 6, 4 and 2)
4.4 Length of conductor in feet
4.5 Conductor description

5. Bar Coding

5.1 Each reel or hand coil of conductor shall be bar coded. The exception is that for those conductors that are put-up on plastic reels, which are then bulk-packaged, manufacturers may provide a single bar code label on the outside of the bulk-package. Bar codes shall be formatted similar to Figure 1, shown below. The District and the supplier that will be providing the conductors shall reach agreement on the details of a bar code label that satisfies the District's needs after the contract is awarded and before the conductor is shipped.

5.2 Bar codes shall conform to ANSI/AIM BC2-1995 Code 39 bar code standard.

5.3 The bar code label shall be a minimum of 4" wide x 3" high. It shall be made of durable, weather resistant, premium poly-ethylene stock. The reel marking information required in Section 4., above, may be included on the bar code label.

5.4 Bar code labels shall be placed on the conductor reels as described above in Section 4.

5.5 As a minimum, bar code labels shall include the following information:

Line	Type	Data	Example
1	Bar Code	District's Material ID Number (13 characters including spaces) Note: When programming the barcode the Number "0" must accompany the end of the Material ID Number. For example, 831108 must be bar-coded as P 00008311080	See Figure 3.
2	Text	District's Material ID Number (12 characters including spaces) Quantity (feet per reel)	0000831108 0 5,000 FT
3	Text	District's Material Description (max. 50 characters including spaces)	WIRE OH BARE #4 ACSR 6/1 STR - SWAN
4	Text	PO Number/Release Number/Line Number Ship Date (8 characters)	PO/REL/LN 00047323 0004 09/13/11

Line	Type	Data	Example
5	Bar Code	PO Number Release Number	See Figure 3.
6	Bar Code	QP (2 characters)	See Figure 3.
7	Text	QP (2 characters)	QP

FIGURE 3

6. Packaging

Bare copper conductors shall be packaged according to Table 2 and the requirements below:

Material ID	Size	Reel Type	Flange or Hand Coil Dia. Max (in)	Drum Dia. Min (in)	Overall Width Max. (in)	Length per Reel or Hand Coil (ft)	Nominal Weight per Reel (lb)
848517	14 AWG	Plastic	6.5	5.5	N/A	500	6
848484	6 AWG	Plastic	11.75	8.0	3.9	315	25
848088	6 AWG	Hand Coil	24.0	N/A	N/A	300	25
848476	4 AWG	Plastic	11.75	8.0	3.9	200	25
848070	4 AWG	Hand Coil	24.0	N/A	N/A	200	25
1000027	2 AWG	Plastic	11.75	8.0	3.9	125	25
848054	2 AWG	Hand Coil	24.0	N/A	N/A	125	25
847923	1/0 AWG	Wood	30.0	16.0	21.5	2,910	950
847915	2/0 AWG	Wood	30.0	16.0	21.5	2,280	940
847890	4/0 AWG	Wood	30.0	16.0	21.5	1,450	950
847907	4/0 AWG	Wood	30.0	16.0	21.5	1,450	950
847866	500 kvmil	Wood	24.0	10.0	21.0	260	400

Table 2

6.1 Conductors shall have a length (+/- 10%) per reel or hand coil as specified in Table 2.

6.2 Wooden reels shall be nonreturnable, shall be fabricated of wood per NEMA WC 26 and shall satisfy the dimensions given in the above table unless otherwise specified by the District. Wooden reels shall have Level 2 type protection over the outer layer of conductor in accordance with NEMA WC 26, Section 4.1.

6.3 Plastic reels for AWG conductor sizes 6, 4 and 2 shall have dimensions conforming to those shown in Figure 2.

6.4 Hand coils shall have a nominal thickness in the range of 2 - 3 inches.

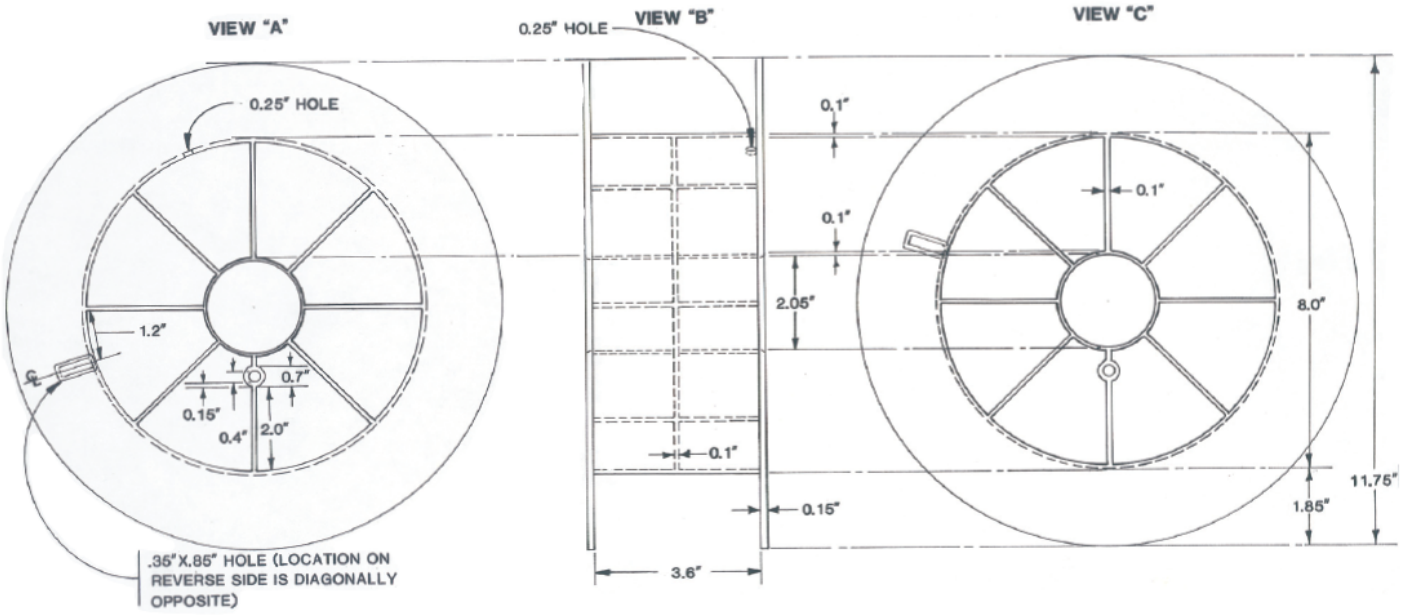

Figure 2

7. Shipping

7.1 Reels of bare copper conductor shall be shipped in enclosed vans or trailers.

7.2 It is preferred that wooden reels be shipped upright on their flanges and positioned for unloading by forklift.

7.3 Wooden reels may be shipped flat on their flanges only if the reels are tightly machine shrink wrapped in such a way as to prevent "birdcaging" in transit.

8. Warranty

8.1 The Supplier warrants that the conductor furnished under this specification is of first class material and workmanship throughout, that it has been tested in accordance with the applicable requirements of this material standard, and that the results of the tests comply with the requirements of this material standard.

8.2 The Supplier agrees to replace (supply new conductor) all conductor that is unsuitable for operation or fails in operation due to defective design, material or workmanship during normal and proper use, within 12 months after being energized or 18 months after delivery to the District.

8.3 All replacements by the Supplier under the provisions of this material standard shall be provided free of charge to the District, including delivery expenses.

9. Inspection

The District reserves the right to inspect all conductor either at the Manufacturer's plant, upon receipt or at the time of installation. Conductor not meeting specification, or conductor that is damaged, will be rejected and returned at the Supplier's expense. Acceptance of delivery does not relieve the Supplier from meeting all of the requirements of this material standard.

10. Bidders' Data

Bidders shall submit a list of any and all deviations from this material standard.

11. Evaluation of Bids

The following factors will be considered in analysis and subsequent bid award:

11.1 Base price
11.2 Escalation
11.3 Past experience with Bidder
11.4 Adherence to material standard
11.5 Delivery schedule