



Bonding Hardware for AccuRibbon® DC Toneable Cable

Contents	Section
General	1
Precautions	2
Bonding Hardware Installation	3

1. General

- 1.1 This document describes the bonding hardware that is recommended for use on AccuRibbon® DC toneable cable.
- 1.2 AccuRibbon® DC toneable cable contains two 15 AWG bare copper wires which are located in the cable jacket adjacent to the strength members. The copper wires are provided for cable locating purposes.
- 1.3 The bonding hardware can be ordered through OFS using the following product description.

FAP KIT, D182212 PARTS 1 EA (GROUND HARDWARE), Comcode 105694038

1.4 The bonding hardware is used to terminate the 15 AWG bare copper wires in splice closures or on fiber distribution frames. Alternatively, the copper wires can be spliced to the locate wires of other cables or equipment conductors using crimp-on splice connectors as described in OFS IP-032, *Splicing Procedure for Copper Conductors in Optical Fiber Cable*. Local practices may dictate other termination and splicing methods and are left to the discretion of the end-user.

2. Precautions

- 2.1 AccuRibbon® DC toneable cable is designed to meet the rigors of aerial, direct buried, and underground conduit installations. However, care must be exercised during installation to ensure that the maximum rated cable load (MRCL) is not exceeded and the minimum bend diameter is not violated.
- 2.2 The MRCL for AccuRibbon® DC toneable cable is 600 pounds (2700 N). This is the maximum tensile force that may be applied to the cable during short-term installation conditions, e.g., during an underground installation in conduit or innerduct. For long term conditions, the maximum recommended cable load is 180 pounds (800 N).
- 2.3 Cable minimum bend diameters are defined for both dynamic and static conditions. The dynamic condition applies to a cable that may be exposed to the MRCL, e.g., pulling the cable around a sheave or capstan. The static condition applies to a cable that is exposed only to low tension, e.g., an installed cable that is racked in a handhole or manhole. The maximum recommended cable tension under static conditions is 180 pounds (800 N).
- 2.4 Cable minimum bend diameters¹ are dependent on the cable diameter and fiber count and are expressed as a multiple of the cable diameter. For static conditions, the minimum recommended bend diameter for cables containing up to 216 fibers is 20 × cable outside diameter (OD). For dynamic conditions, the minimum recommended bend diameter is 40 × OD. For cables containing 240 – 432 fibers, the minimum recommended bend diameter is 30 × OD for static

¹ Some cable manufacturers specify minimum bend-radius rather than minimum bend-diameter. Minimum bend-diameter can be converted to minimum bend-radius by dividing the minimum bend-diameter by 2. For example, the minimum recommended bend-radii for cables containing up to 216 fibers are 10 × OD and 20 × OD, respectively, for static and dynamic conditions.

conditions and $40 \times OD$ for dynamic conditions. The minimum bend diameters for AccuRibbon® DC toneable cables are summarized in Table 1.

2.5 The minimum recommended storage-coil diameter for cables containing up to 216 fibers is 18 inches. For cables containing 240 – 432 fibers, the minimum recommended storage-coil diameter is $40 \times OD$. Minimum recommended storage-coil diameters are summarized in Table 1.

Table 1 – Minimum Recommended Bend Diameters and Storage Coil Diameters for AccuRibbon® DC Toneable Cable

Fiber Count	Cable Diameter	Minimum Bend Diameter		Minimum Storage Coil Diameter
		Unloaded $20 \times OD$	Loaded $40 \times OD$	
12-fiber AccuRibbon®				
12 - 48	0.51" (13.0 mm)	11" (26 cm)	21" (52 cm)	18" (46 cm)
60 - 144	0.61" (15.5 mm)	13" (31 cm)	25" (62 cm)	18" (46 cm)
156 - 216	0.71" (18.0 mm)	15" (36 cm)	29" (72 cm)	18" (46 cm)
24-fiber AccuRibbon®				
		Unloaded $30 \times OD$	Loaded $40 \times OD$	Coil Diameter $40 \times OD$
264 - 432	0.84" (21.3 mm)	26" (64 cm)	34" (86 cm)	34" (86 cm)

3 Bonding Hardware Installation

3.1 The bonding hardware kit may contain parts that are used only with armored cables. These pieces are not required for AccuRibbon® DC toneable cable and may be discarded.

3.2 Prep the cable sheath as required for splicing or termination. Leave several inches of the exposed copper conductors for attachment to the bonding hardware. See IP-063, *Sheath Removal for AccuRibbon® DC Toneable Cable*, for detailed sheath prep instructions.

3.3 Place the hose clamp on cable.

3.4 Bend up the two copper conductors 90 degrees relative to cable.

3.5 Position the base of the wire retainer over the cable and between the two copper conductors. Position the copper wires into the notches of the wire retainer (Figure 1).



Figure 1 – Position copper wires in wire retainer.

3.6 Slide the hose clamp over the wire retainer with the screw located at the side of wire retainer base. Tighten the hose clamp to secure the wire retainer to cable (Figure 1).

3.7 Position the bonding block (set screws facing away from cable) so that the copper wires are between the bonding block and the upright leg of the wire retainer.

3.8 Insert the 10-24 screw through the upright leg of wire retainer and fasten to the side of the bonding block (Figure 2). Trim the copper wires extending above the upright leg of wire retainer.



Figure 2 – Insert 10-24 screw through wire retainer and fasten to bonding block.

3.9 Insert connecting wires from the locating equipment into bonding block and tighten with set screws.



Figure 3 – Attach locating equipment wires using the set screws.

3.10 Alternatively, conductors with ring connectors can be connected to the bonding block using the 10-24 screw as shown in Figure 3.



Figure 3 – Alternative method for attaching equipment conductors.

If you have any questions or need additional information, please contact OFS at 888-FIBER-HELP (888-342-3743).