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GUIDELINES

Termination Instructions for ARACON® Braided EMI Shielding

The following instructions provide details on the steps required to terminate and finish harness assemblies covered with ARACON Braided EMI Shielding. The instructions are intended to supplement existing harness assembly instructions and specifications such as IPC/WHMA-620, Requirements and Acceptance for Cable and Wire Harness Assemblies, as well as any OEM work instructions. As such, detail is provided for the assembly steps which involve terminating ARACON to backshells, connectors or split-rings independent of the steps required to complete assembly of connectors on a given harness.

Steps are summarized and then detailed in a generalized order that should be adjusted as required to meet the requirements of your application.

SUMMARY

- Terminate the first connector end
- Install the backshell (if any); ensure that it is oriented correctly
- Slide ARACON braid over the harness and terminate it using a banding strap, compression clamp or solder termination as required by chosen backshell or connector
- Pull ARACON braid down to closely cover the harness from end-to-end; slide ARACON braid away from the other end; it will not deform like metal braid
- Slide the other end's backshell (if any) onto the harness; ensure that it is oriented correctly
- Terminate the connector at the other end of the harness
- Install the backshell (if any)
- Terminate the ARACON braid using a banding strap, compression clamp or solder termination as required by chosen backshell or connector
- Install an abrasion protective layer over the harness and ARACON braid (if any)
- Install shrink boots (if any)

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1 Terminate the first connector in accordance with the manufacturer's instructions or applicable industry standard, e.g. IPC/WHMA-620. The standard includes an addendum applicable to spaceflight applications.

2 Install the first connector's strain relief in the proper orientation and secure it to the connector per the manufacturer's instructions.

3 Slide ARACON braid over the harness ensuring that its length is sufficient to allow proper installation. ARACON may be cut easily with titanium-bonded or ceramic scissors; plated steel or stainless steel scissors will wear quickly cutting ARACON and are not recommended. When accounting for the required length of ARACON braided sleeving ensure that the braid closely conforms to the harness and that each end may be bell-mouthed (cut end rolled inwards) while establishing the proper length. Note that variations in harness length and diameter will affect required ARACON length. **Figure 1** illustrates typical titanium-bonded scissors (Westcott® Model 13529 shown) that may be used for cutting ARACON.

4 Cutting ARACON is best accomplished by applying polyimide tape prior to cutting the braid. Tape protects the end of the braid and prevents against flaring of the braid until such time as opening up the end of the braid is desired. **Figure 2** illustrates cutting the braid with tape applied. ARACON should be cut using the inside edge of the scissors to prevent any tendency to "saw" while cutting. **Figure 3** illustrates proper ARACON position for cutting where no tape is shown for clarity.

FIGURE 1

FIGURE 2

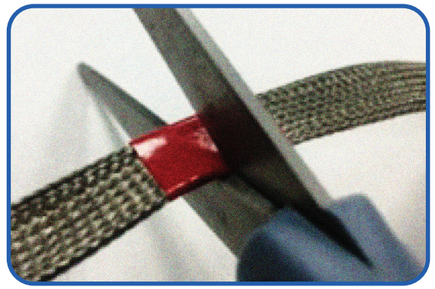


FIGURE 3

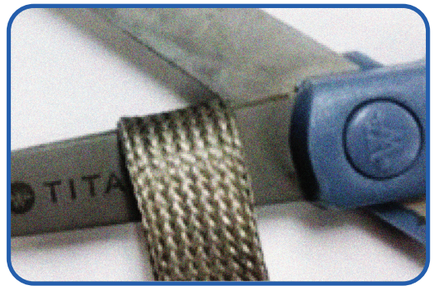
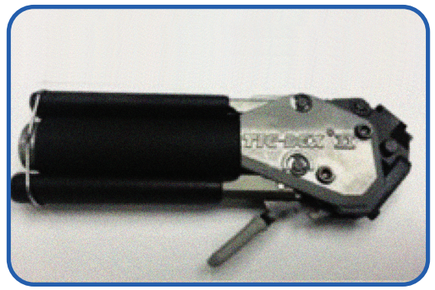


FIGURE 4



5 Terminate the ARACON to the first backshell or connector. Banding straps are typically used to terminate ARACON; M85049/128 straps are common and may be installed using tools from BAND-IT-IDEX or Daniels Manufacturing Corporation (DMC) Tool# DBS-2100 or DBS-2200 (for 0.250" or 0.125" wide bands, respectively). **Figure 4** shows the typical tool.

6 Bell-mouth the first end of ARACON braid and bring it up to the backshell as shown in **Figure 5**. Slide the ARACON braid over the termination area of the backshell or connector. Secure the braid in place with a banding strap as shown in **Figure 6.** Note that any internal wire shield pig-tails or drain wires should be terminated in a single layer beneath the ARACON braid with any excess length of pig-tail or wire trimmed after band strap installation.

7 **Figure 7** illustrates a typical terminated end.

8 Pull the ARACON braid down to conform closely to the harness over its length. "Milking" the braid down onto the harness pulls the braid tight providing highest degree of coverage and lowest profile. **Figure 8** illustrates the process showing tight braid to the left of the picture and loose braid that has yet to be pulled tight to the right of the picture.

FIGURE 5

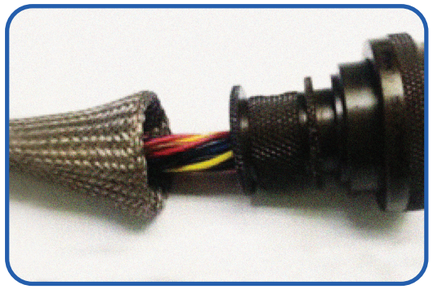


FIGURE 6

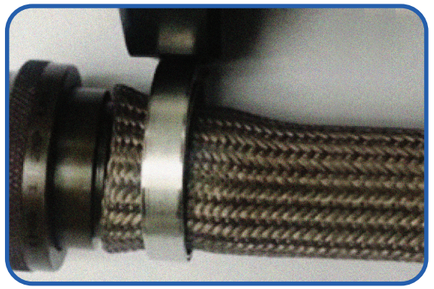


FIGURE 7

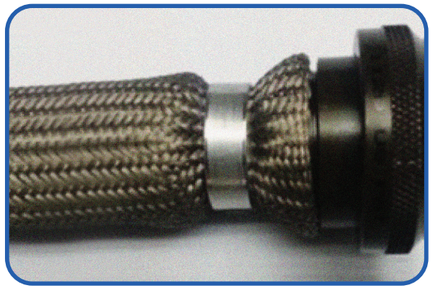
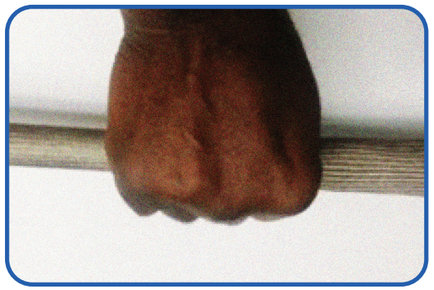


FIGURE 8



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9 At the other end of the harness, slide the ARACON out of the way. It will not deform like metal braid, so you may easily give yourself plenty of room to terminate the other connector.

10 It is recommended that an abrasion protective layer be installed over ARACON braid. Braided sleeving or wrap, heat shrink and polyimide tape are commonly used for this purpose. If the chosen method will fit over the connectors, skip installing the layer for now; otherwise, slide the protective layer on to the harness and out of the way of the open end of the harness.

11 Install shrink boots (if any) and slide them out of the way of the open end of the harness.

12 Terminate the other connector in accordance with the manufacturer's instructions and install the back shell in the proper orientation and secure it to the connector per the manufacturer's instructions.

13 Terminate the ARACON to the backshell or connector (Figures 5 through 7). Again, note that any internal wire shield pig-tails or drain wires should be terminated in a single layer beneath the ARACON braid with any excess length of pig-tail or wire trimmed after band strap installation.

14 Complete installation of outer abrasion protective layer in accordance with manufacturer's recommendations.

15 Install shrink boots (if any) in accordance with manufacturer's recommendations.

16 Note that if more than a single layer of ARACON braid will be used, it is recommended that a layer of PTFE or polyimide tape be placed between the layers to prevent self-induced wear.

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