

**Termination Procedure for D-602-0122, D-602-0123
Coaxial Contacts MIL-DTL-38999, Size 8**

1. Scope

1.1 This standard contains the termination procedure, inspection requirements, and rework procedures for the SolderTacts® contacts D-602-0122 and D-602-0123.

2. References

2.1 Raychem Specification Control Drawings

D-602-0122 Contact, Pin, Coaxial MIL-DTL-38999 Series I, II, III and IV, size 8

D-602-0123 Contact, Socket, Coaxial MIL-DTL-38999 Series I, III and IV, size 8

2.2 Raychem Instructions

AA-400 Super Heater Instructions

AD-1319 Holding Fixture Instructions

HL2010E Steinel® Instructions

3. Application Equipment and Tools

| Heating Tool | Reflector | Holding Fixture |
|--|---|---|
| AA-400 Super Heater (portable, compressed air) | No. 979663 Mini SolderSleeves® Reflector | AD-1319 Holding Fixture With AT-1319-22 Adapter |
| HL2010E Steinel® 1 (portable, electric blower)  | Steinel SolderSleeve® Reflector, No. 832011 | |

 Equivalent hot air tools may be used.

4. General Information

4.1 Description

- 4.1.1 The contacts covered by this engineering standard are designed for use in MIL-DTL-38999 connectors and fit in standard size 8 cavities. These single piece contacts solder to coaxial cable by means of preinstalled solder preforms in heat-shrinkable insulating sleeves.

4.2 Coaxial Cable Accommodation

- 4.2.1 D-602-0122 and D-602-0123 contacts will accommodate the cables listed in Table I.

TABLE I

| Cable | Strip per Figure |
|-----------|------------------|
| RG180 | 3 |
| RG58 | 4 |
| 5022AIXIX | 2 |
| 7522AIXIX | 4 |
| 7524AIXIX | 2 |

5. Termination Procedures

5.1 Coaxial Cable Preparation: Strip Dimensions

- From Table I, select the figure to strip the appropriate cable.
- 5.1.1 Conventional, center conductor fold-back.

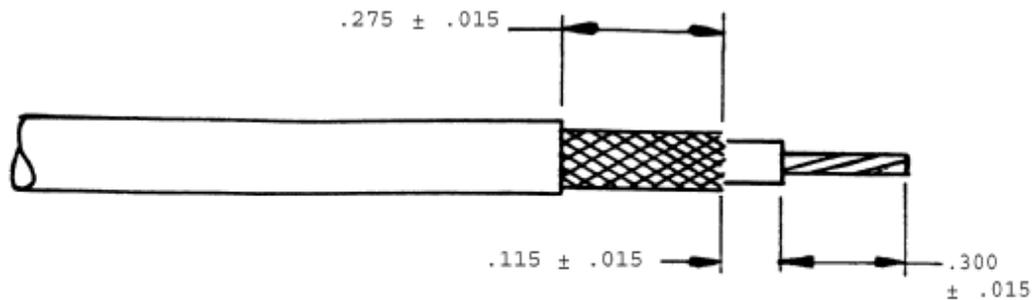


FIGURE 1A

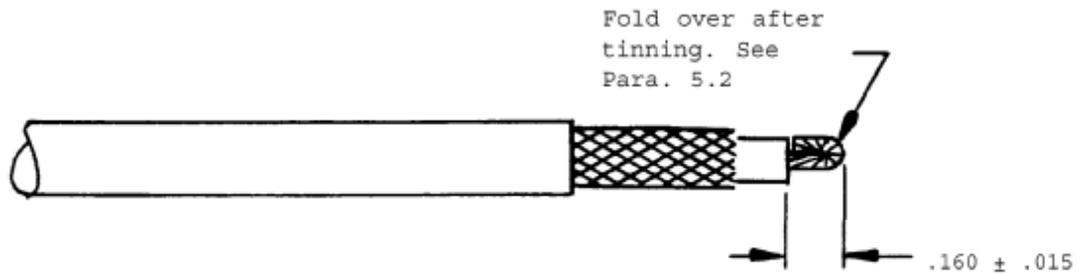


FIGURE 1B

5.1.2 Shield fold-back.

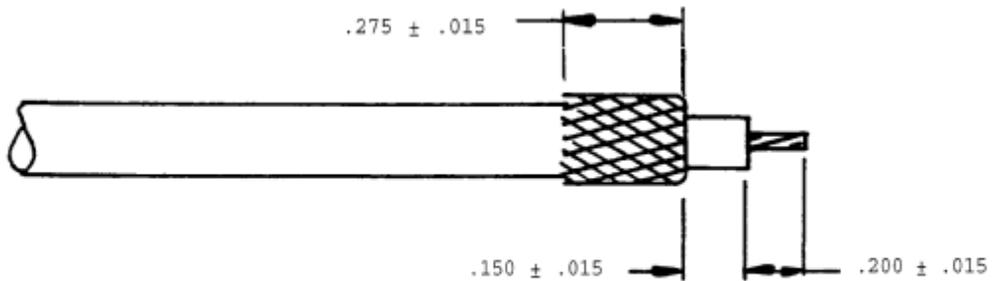


FIGURE 2

5.1.3 Shield and conductor fold-back.

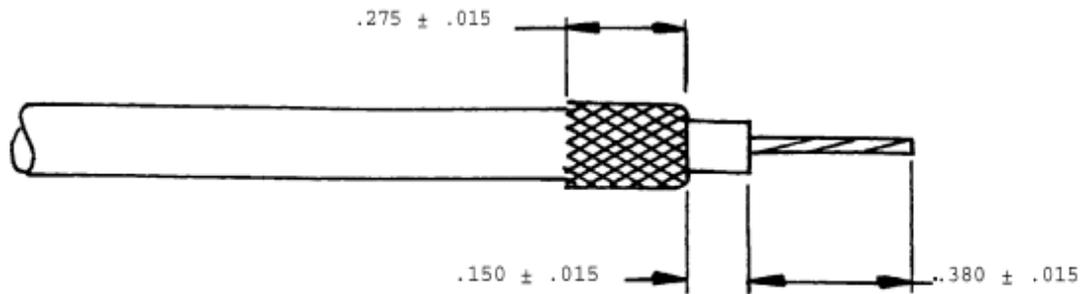


FIGURE 3A

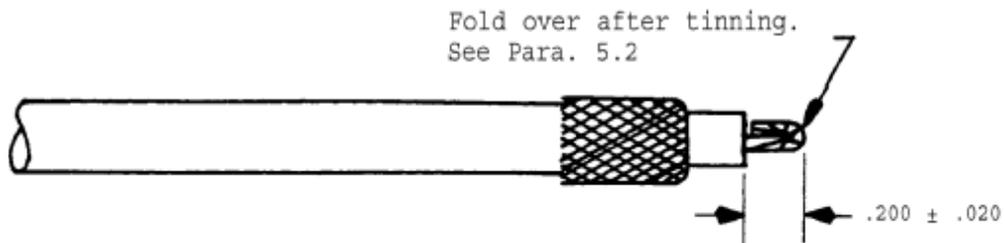


FIGURE 3B

5.1.4 Conventional.

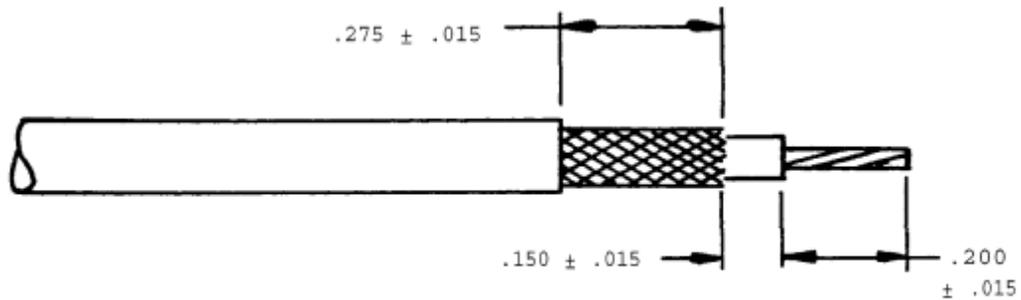


FIGURE 4

5.1.5 Straighten the center conductor, and make sure that stranded center conductor is twisted into its original lay.

5.1.6 Pre-tin stranded center conductor with Sn63 solder per ANSI-J-STD-006.

5.1.7 Smooth the braid ends flat against the cable jacket.

5.2 Inserting Cable Into Contact

5.2.1 Slip the contact carefully over the end of the prepared cable, and gently push the contact onto the cable until the shield braid leading edge is lined up with leading edge of the rear inspection window as shown in Figure 5.

NOTE

Rotating the contact slightly during cable insertion will help prevent the braid from catching.

5.2.2 Inspect for proper insertion (see Figure 5).

The center conductor must be visible through one of the forward inspection windows.

The distance from the rear of the contact body to the cable jacket insulation should be as shown on Figure 5.

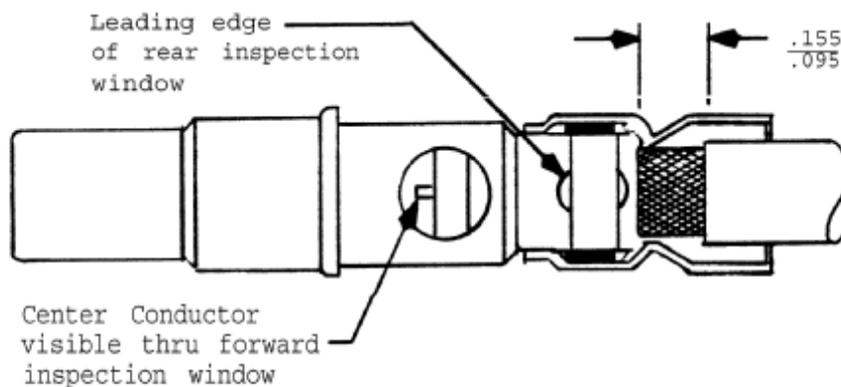


FIGURE 5

5.2.3 If the cable cannot be inserted as required, remove the contact from the cable and check for improper strip dimensions, splayed shield braid, or bent center conductor.

5.3 Heating Procedure

NOTE

The AD-1319 holding fixture with the AT-1319-22 adapter must be used to prevent damage the contacts.

5.3.1 AD-1319 Holding Fixture Setup

To use the AD-1319 holding fixture, install the AT-1319-22 adapter as shown (see Figure 6).

NOTE

Make sure that the contact is inserted in the appropriate end of the adapter--outer pin contact into the "P" end and outer socket contact into the "S" end.

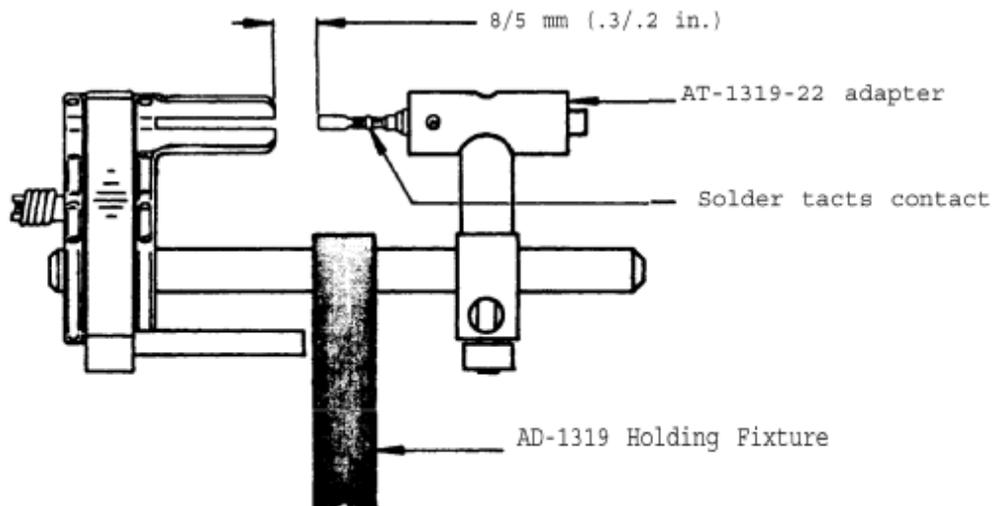


FIGURE 6

SETUP DIMENSIONS FOR AD-1319 HOLDING FIXTURE

- 5.3.2 Clamp the coaxial cable in the cable clamp.
- The cable must be fully inserted in the contact (see paragraph 5.2).
 - The contact must be fully inserted in the adapter.
 - The cable must be straight between the contact and the cable clamp.

5.3.3 Applying heat with hot air heating tool (Steinel® heater or Super Heater).

Attach the appropriate reflector to the heating tool. See Section 3 for reflector selection.

Turn the heating tool on and allow to warm up. See instructions for tool used.

Using one of the required holding fixtures, position the contact in the hot air stream within the reflector.

For optimum heating, position the contact as shown in Figure 7 or Figure 8. Center the forward inspection window in the reflector. Position the forward inspection window toward the hot air stream such that the inner solder preform is still visible during termination.

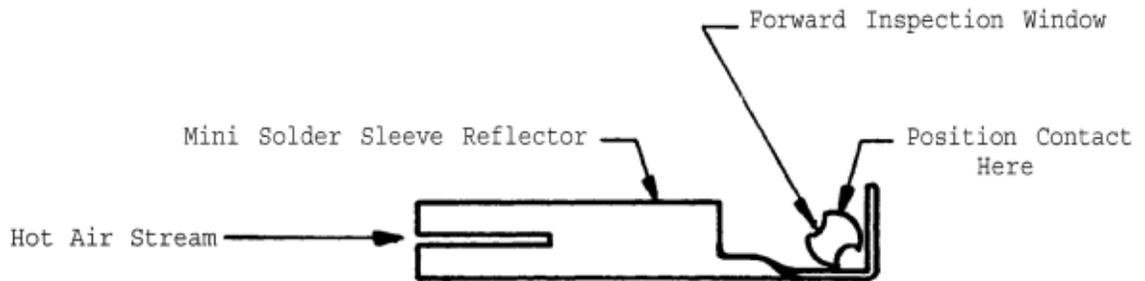


FIGURE 7

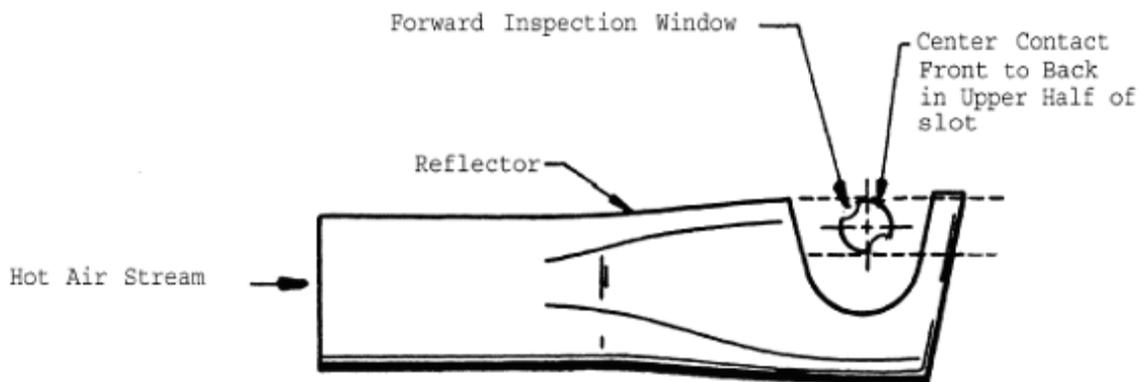


FIGURE 8

Continue to direct hot air around the contact until the inner solder preform in the forward inspection window has melted and flowed.

Now direct hot air around the rear inspection window (if required) to complete the melting of the large solder preform and recovery of the outer tubing on the cable OD. Be sure to allow the solder to solidify before removing the contact from the holding fixture.

5.3.4 After the termination has cooled at least 15 seconds, remove it from the holding fixture.

5.3.5 Inspect the completed termination according to Section 6 of this standard.

6. Inspection

6.1 Assembly Inspection

Inspect the completed termination for correct assembly according to the following criteria:

6.1.1 If the distance from the rear end of the contact body to the cable jacket does not meet the requirements of 5.2.2, improper strip lengths and/or improper cable insertion is indicated.

6.1.2 The center conductor must be visible through one of the forward inspection windows.

6.1.3 The shield braid must be visible through the rear inspection windows.

6.2 Heating Inspection

Visually inspect the completed termination for proper heating according to the following criteria:

6.2.1 The small solder preform in the forward inspection windows must be melted and flowed so that:
preform shows no trace of its original form (underheated condition). A band of solder trace which is wetted to the substrate is acceptable. Solder fillet is visible between center conductor and inner contact soldering interface.

NOTE

Insufficient visible solder indicates overheated condition.

6.2.2 The large solder preform in the rear inspection window must be melted and flowed so that:

Preform shows no trace of its original form (underheated condition). Band of solder trace which is wetted to the substrate is acceptable.

Solder fillet is visible between braid and contact body.

NOTE

Insufficient visible solder indicates overheated condition

6.2.3 The insulating sleeve must be shrunk over the area of braid visible between the cable jacket and the contact.

NOTE

Insulating sleeve may remain flared at end.

6.2.4 The insulating sleeve must not be darkened so as to obscure the solder joints or hinder inspection (overheated condition).

6.2.5 The coaxial cable jacket must not show signs of damage or overheating outside of the insulating sleeve.

6.3 Visual inspection standards, (“Verification Photos”) are available from Raychem.

7. **Repair and Rework**

7.1 Underheated Terminations

Reheat underheated areas as directed in Section 5.3, and reinspect per Section 6. Avoid reheating areas that have been properly heated.

7.2 Overheated or Improperly Assembled Terminations

7.2.1 Remove the contact from the cable as directed in Section 7.3.

7.2.2 Check the cable for damage and incorrect stripping.

NOTE

If the cable is damaged, cut off the damaged portion and restrip per Section 5. 1.

If stripping is incorrect, restrip as required (Section 5.1).

7.2.2 Install a new contact (Sections 5.2 and 5.3).

7.3 Removing Contacts From Cable

CAUTION

Safety glasses must be used during this operation.

7.3.1 Use a sharp knife or razor blade to score the insulating sleeve full length on opposite sides of the contact.

CAUTION

Avoid cutting into wire insulation.

7.3.2 Hot Air Heating Tools

Holding the contact with pliers, heat the contact until the solder melts, and quickly pull the heated contact off the cable.