## 1.0 Scope

This standard contains the procedures for making environment resistant 1 to 1 in-line splices in shielded and jacketed cables listed in Table I using TE Connectivity D-150-ZXXX Series shielded cable splice kits.

## 2.0 References

TE Connectivity Customer Drawing (TECD) D-150-ZXXX. Connectivity parts.

## 3.0 Application Equipment

3.1 Wire Handling Tools

a. Wire stripper for primary.

b. Wire stripper for cable jacket.

c. Small sharp scissors or diagonal cutters for braid.

d. Ruler readable to 0.50 (0.025).

e. DMC crimp tool HX4 (M22520/5-01).

f. Die set Y1535 for D-150-Z393

3.2 Heating Tools

Use one of the following, or TE Connectivity approved alternative.

a. CV1981 AT Digital with p/n reflector PR13C. Temperature setting 750-800°F

b. CV2014 HOT JET S with wrap-around reflector PR-38-REFLECTOR

## 4.0 General Information

4.1 Splice Kit Description

The TE Connectivity D-150-ZXXX Series shielded cable splice kits consists of:

a. SolderSleeve.

b. Crimp barrels for splicing the primary conductors.

c. Sealing insert for encapsulating the primary conductor splices.

4.2 Consumable Materials

a. PTFE tape P-422 (A-A-59474, Type 1, Class 4)

## 5.0 Installation Procedure

**⚠WARNING**

- Overheating the product to charring or burning may produce vapors that may cause eyes, skin, nose, or throat irritation. Persons with pre-existing eye, skin or respiratory disorders (e.g., asthma conditions) may be more susceptible to the effects of these vapors.
- Shrink products in a well-ventilated area.
- Wear eye protection.

### 5.1 Part Selection

**Table I**

| Parts Description | RG Cables |
|---|---|
| D-150-Z393 | RG-393 |

### 5.2 Cable Preparation

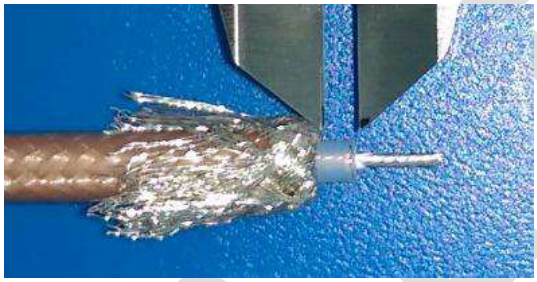
#### 5.2.1 Single Conductor Shielded Cable

Tolerances: All lengths ± 0.50 mm (0.025”)

a. Remove cable jacket: 15 mm (0.600’’)

b. Fold back the braid.

c. Remove cable dielectric leaving 2.5 mm (0.100’’) exposed dielectric.



d. Ensure exposed center conductor is 6.35 mm (0.250’’). Trim excess.

e. Place the SolderSleeve onto the left cable end, with the small opening to the left.

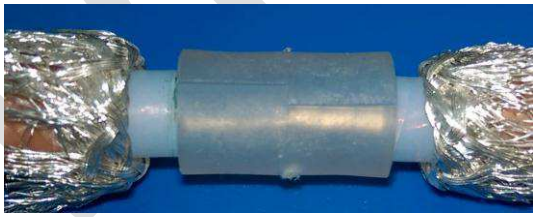
f. Slide crimp barrel onto exposed center conductor. Ensure it is flush against the cable dielectric. Crimp the metal barrel using the HX4 (M22520/5-01) crimp frame with the Y1535 crimp die.


g. Perform steps a thru d above to the right end of the cable to be spliced.

h. Insert exposed center conductor into the crimp barrel. Ensure it is fully inserted and flush with the cable dielectric. Trim excess conductor as needed.

i. Crimp the center and then the right side of the crimp barrel so that it has a continuous, hexagonal appearance.

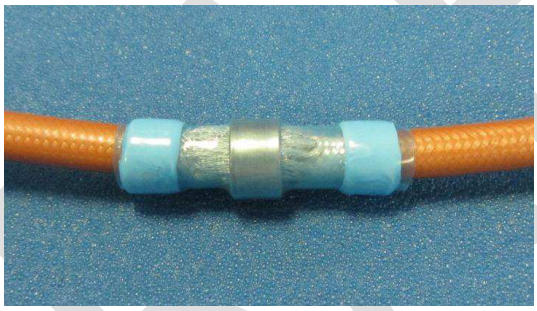
j. Insert the dielectric insert over the crimp barrel. If needed, trim the minimum amount form the length of the insert for a snug fit. Limiting air gaps improves splice performance.



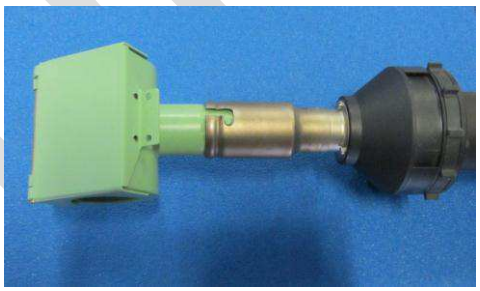
k. Apply pressure on the two halves of the dielectric insert and apply one revolution and one quarter of PTFE tape P-422 (A-A-59474, Type 1, Class 4) over the insert to hold in place. Smooth out edges to remove any air voids.

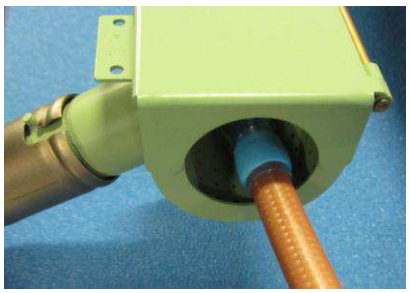
l. Fold back the right side of the cable braid first, then the left side over it. .

m. Slide the SolderSleeve and center where the cable shields overlap.



n. Use approved heating tools, reflectors, and setting. The air gun is shown with the wrap-around reflector (PR-38-REFLECTOR).





o. Apply heat to the Solder Sleeve until the solder melts and the heat shrink tubing recovers. SolderSleeve is recovered when the solder ring has fully melted and the blue thermoplastic seals melt and seep past the edge of the sleeve. Note that slight flux residue may be visible after the solder melts.

## 6.0 Recommendation

To confirm the cable performance after installation of the splice the characteristic impedance shall be tested as per MIL-PRF-32517. The specimen shall be prepared for testing by assembling appropriate connections to the cable ends. The rise time of Time Domain Reflectometer (TDR) shall be 150 picoseconds or less, and the vertical sensitivity of the system shall provide for minimum resolution of one major scale division. The measurement shall be taken by gating within 1 nanosecond on each side of the matched impedance splice.

The characteristic impedance shall not exceed the impedance limits shown in Table I.

**Table II. Characteristic Impedance limits**

| Matched impedance splice part number | Impedance (Ohms) |
|---|---|
| D-150-Z393 | 46 – 57.5 |

**IMPORTANT**

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