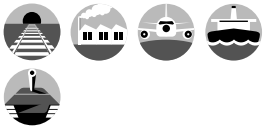
SolderShield Shielded and Coaxial Cable Splices

Product Facts

- **Flux-coated, solder-impregnated copper shield braid encased in a transparent heat-shrinkable insulation sleeve provides a controlled soldering process, encapsulation, inspectability, strain relief, and insulation**
- **One-piece design provides easy installation and lower installed cost**
- **Circumferential (360°) shielding results in EMI protection and shield continuity equal to or better than the original cable**
- **Conductor splices are made using Raychem MiniSeal crimp products, which are recognized by MIL-S-81824 and MIL-W-5088**



Applications

Used for splicing a wide range of cables, including coaxial and multiconductor cables.

SolderShield devices can be used to repair or splice shielded or coaxial cables. These products consist of a MiniSeal crimp splice plus a flux-coated, solder-impregnated copper shield encased in a heat-shrinkable sealing sleeve, for splicing the shields. SolderShield kits terminate single- or multiple-conductor cables, eliminate EMI problems at the splice, and provide strain relief for the cable.

Product Selection Process

For splicing multiconductor cables refer to Table A.

For splicing coaxial cables refer to Table B.

Installation

For proper installation of these devices, the correct heating tool and reflector attachment must be used. Any one of the following Raychem heating tools is recommended:

- HL1802E
- IR-1759 MiniRay
- CV-1981

Refer to Raychem installation procedure RCPS 150-02 (D-150 series) and RPIP 699-00 (B-202 series) for detailed instructions and recommended reflector attachment.

You will find ordering information for most of these tools in Section 10.

Specifications/Approvals

Series	Military	Raychem
D-150	US: M81824 (conductor splice only) UK: RAF AP 1130-2008-1	RT-1404

Available in:	
Americas	■
Europe	■
Asia Pacific	■

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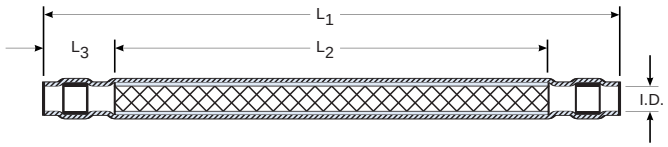
SolderShield Shielded and Coaxial Cable Splices (Continued)

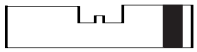
Table A. Multiconductor Cable Splices

Each SolderShield part consists of a SolderShield splice and one or more conductor splices. Refer to information below for description and numbers of conductor splices.

SolderShield Splice



Crimp Splice



SolderShield Product Dimensions

Part No.		Dimensions				Conductor Splice Size Range CMA [mm²] Min.–Max.	Color Code	Quantity Per Kit
Tin Plated	Nickel Plated	L1 Max.	L2 Nom.	L3 Min.	ID Min.			
D-150-0168	D-150-0228	80.50 [3.17]	50.00 [1.97]	10.20 [.400]	3.00 [.118]	304–1510 [0.15–0.75]	Red	1
D-150-0169	D-150-0229	80.50 [3.17]	50.00 [1.97]	10.20 [.400]	4.00 [.157]	779–2680 [0.39–1.34]	Blue	1
D-150-0170	D-150-0230	80.50 [3.17]	50.00 [1.97]	10.20 [.400]	5.00 [.197]	1900–6755 [0.95–3.37]	Yellow	1
D-150-0174	D-150-0231	10.60 [4.17]	75.00 [2.95]	10.20 [.400]	4.00 [.157]	304–1510 [0.15–0.75]	Red	2
D-150-0175	D-150-0232	10.60 [4.17]	75.00 [2.95]	10.20 [.400]	5.00 [.197]	779–2680 [0.39–1.34]	Blue	2
D-150-0176	D-150-0233	10.60 [4.17]	75.00 [2.95]	10.20 [.400]	6.00 [.236]	1900–6755 [0.95–3.37]	Yellow	2
D-150-0177	D-150-0234	10.60 [4.17]	75.00 [2.95]	10.20 [.400]	9.00 [.356]	304–1510 [0.15–0.75]	Yellow	2
D-150-0178	D-150-0235	10.60 [4.17]	75.00 [2.95]	10.20 [.400]	4.00 [.157]	304–1510 [0.15–0.75]	Red	4
D-150-0179	D-150-0236	10.60 [4.17]	75.00 [2.95]	10.20 [.400]	5.00 [.197]	779–2680 [0.39–1.34]	Red	4
D-150-0180	D-150-0237	10.60 [4.17]	75.00 [2.95]	10.20 [.400]	6.00 [.236]	1900–6755 [0.95–3.37]	Blue	4
D-150-0181	D-150-0238	10.60 [4.17]	75.00 [2.95]	10.20 [.400]	9.00 [.353]	1900–6755 [0.95–3.37]	Yellow	4

Note: The SolderShield splice kits listed in this table are for 1:1 cable splices. The kits can be used on cables with tin-, silver-, and nickel-plated copper conductors. All the kits have environmental-sealing capability. The cable temperature rating must be 125°C minimum.

To find the splice kit part number for your application:
1. Determine the number of conductors in the cable to be spliced.
2. Determine the gauge of each conductor or the maximum jacket OD.
3. Determine the conductor plating.
4. Select the appropriate part number from the table above.

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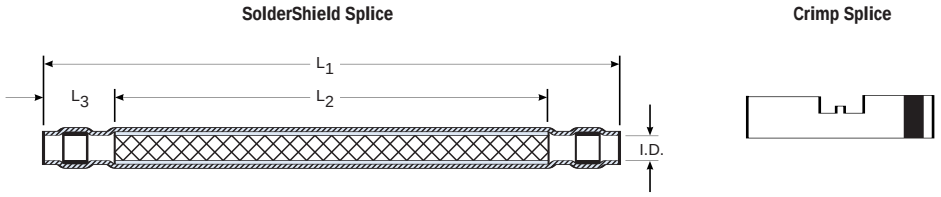
SolderShield Shielded and Coaxial Cable Splices (Continued)

Table B. Coaxial Cable Splices

Each SolderShield part consists of a SolderShield splice and one or more conductor splices. Refer to information below for description and numbers of conductor splices.



RG Cable No.	Raychem Cable Description	Conductor Splice Qty/Kit	Part No.	SolderShield Dimensions		
				L1 Max	L2 Min	ID Min
8A, 9B, 11	5012A3311	1	D-150-0214	80.50 [3.170]	50.00 [1.970]	12.00 [.472]
13, 26, 31	5012E1339					
115, 144, 149	7518A1311					
165, 213, 214	—					
216, 235, 391	—					
393, 397	—					
178, 196,	5028A1317	1	D-150-0094	80.50 [3.170]	50.00 [1.970]	3.00 [.118]
179, 187, 188,	7528A1317					
316, 404, M17/138-00001,	5030A1317					
M17/136-00001	7530A1317					
180, 195	5024A1311	1	D-150-0095	80.50 [3.170]	50.00 [1.970]	4.00 [.157]
M17/137-00001	7526A1311					
M17/139-00001	9527A1318					
—	9530E1014					
124, 140, 141	5020A1311	1	D-150-0096	80.50 [3.170]	50.00 [1.970]	5.00 [.236]
159, 302, 303	5022A1311					
—	7522A1311					
—	7523D1331					
—	7524A1311					
29, 30, 55B	5019D3318	1	B-202-81*	56.00 [2.200]	23.00 [.900]	7.00 [.275]
58, 223	5021D1331					
—	5022A1311					
59, 62, 71	7523D1331	1	B-202-82*	56.00 [2.200]	23.00 [.900]	7.00 [.275]
—	7524A1311					
—	9524A1311					

*These kits use solder to terminate the center conductors. All other kits use crimp.
All kits are for one-to-one coaxial cable splices, and all kits have environmental sealing capability. Each kit contains products to splice conductors, build up dielectric, splice the shield, and provide insulation.

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Product Characteristics

Materials		
Insulation sleeve	Radiation-crosslinked polyvinylidene fluoride	
Meltable inserts	Fluorocarbon-based thermoplastic	
MiniSeal crimp splice	Base metal: Copper alloy C10200 per ASTM B75 Plating: Tin per MIL-T-10727 or nickel per QQ-N-290	
SolderShield shield splice	Base metal: Tin-plated copper wire braid per ASTM B3 Solder and flux coating: Type Sn63 Pb37. Flux: ROM1 per ANSI - J - STD - 004 (RA flux)	
Parameter	**Test Method**	**Requirement**
Electromechanical Performance		
Dielectric strength (shield connection)	—	No breakdown or arcing at 1000 Vac (RMS)
Dielectric strength (conductor connection)	—	2.5 kV
Voltage drop	MIL-S-81824	Less than 2.0-millivolt increase
Insulation resistance (shield connection)	—	1000 megohms minimum at 500 Vdc
Insulation resistance (conductor connection)	—	5000 megohms
Tensile strength for MiniSeal	MIL-S-81824	Exceed yield strength (pounds) of wire.
Tensile strength for SolderShield	MIL-S-81824	75% of strength (pounds) of unspliced cable
Temperature rating	—	-55°C to 150°C [-67°F to 302°F]
Environmental Resistance		
Salt spray	MIL-STD-202 M101	Meet voltage drop requirement.
Heat aging	750 hours at 150°C [302°F]	Meet all electromechanical requirements.
Temperature cycling	MIL-STD-202 M107C	Meet all electromechanical requirements.
Altitude immersion	Immersion at 22,860m [75,000 ft]	Meet insulation-resistance requirement.
Corrosion resistance	—	No evidence of corrosion after testing in accordance with MIL-STD-202, Method 101, Test Condition A

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