

RATIONALE

THIS DOCUMENT PROVIDES THE REQUIREMENTS FOR A NEW ENVIRONMENT RESISTANT SPLICE WITH NICKEL PLATED CRIMP BARREL AND SELF SEALING INSULATOR ASSEMBLY, WHICH DOES NOT REQUIRE HEAT SHRINK OF THE OUTER SLEEVE. THE SPLICE TEMPERATURE RATING IS 175 °C.

NOTICE

THE COMPLETE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS81824.

AS81824/14

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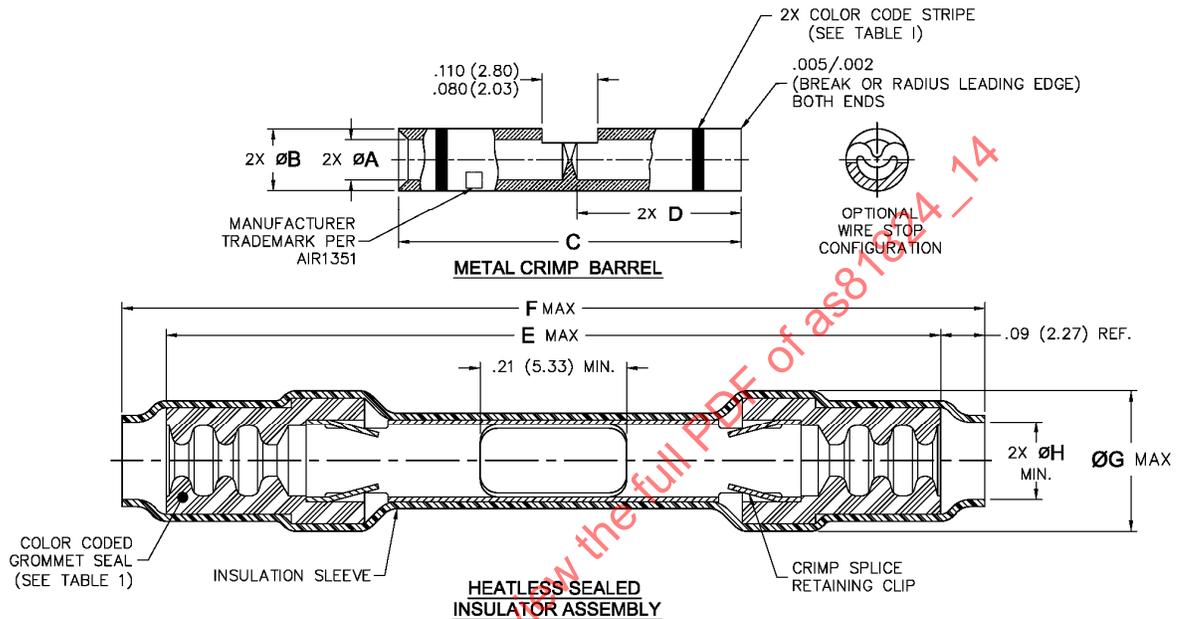
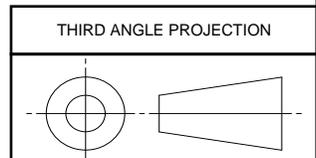


FIGURE 1 - HEATLESS SPLICE ASSEMBLY

NOTES:

1. CONTOURS MAY VARY FROM THAT SHOWN.

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CUSTODIAN: AE-8/AE-8C2		PROCUREMENT SPECIFICATION: AS81824	
	<b>AEROSPACE STANDARD</b>		<b>AS81824/14</b> SHEET 1 OF 4
	SPLICE, ELECTRIC, PERMANENT, CRIMP STYLE, NICKEL-COATED COPPER, INSULATED, ENVIRONMENT RESISTANT, CLASS 1, 175 °C, HEATLESS SEALING		

TABLE 1 - FIGURE 1 CONFIGURATION AND DIMENSIONS

PART NUMBER	WIRE RANGE 1/	ØA	ØB 2/	C	D	E MAX.	F MAX.	ØG MAX.	ØH MIN.	COLOR CODE 3/	WEIGHT LB (KG) PER 1000 PCS. MAX
M81824/14-1	20, 22, 24, 26	.050 (1.27) .045 (1.14)	.080 (2.03) .075 (1.91)	.510 (12.95) .490 (12.45)	.245 (6.22) .225 (5.71)	1.230 (31.24)	1.450 (36.83)	.22 (5.59)	.085 (2.16)	RED	1.9 (0.9)
M81824/14-2	16, 18	.069 (1.75) .064 (1.63)	.106 (2.70) .101 (2.57)	.585 (14.86)	.280 (7.11)	1.400 (35.56)	1.622 (41.20)	.26 (6.60)	.116 (2.95)	BLUE	3.3 (1.5)
M81824/14-3	12, 14	.102 (2.59) .097(2.46)	.153 (3.89) .147 (3.73)	.565 (14.35)	.260 (6.60)	1.535 (38.99)	1.750 (44.45)	.32 (8.13)	.164 (4.17)	YELLOW	5.6 (2.5)

1/ ONLY ONE WIRE IS PERMITTED ON EACH END OF THE SPLICE. THE USE OF TWO OR MORE WIRES ON EITHER END OF THE SPLICE WILL RESULT IN LOSS OF ENVIRONMENT RESISTANCE OF THE SPLICE SEALING SYSTEM.

2/ "B" DIAMETER SHALL NOT INCLUDE COLOR STRIPES.

3/ THE METAL CRIMP BARREL SHALL BE MARKED WITH ONE COLOR STRIPE ON EACH END OF THE BARREL OR OPTIONALLY WITH TWO COLOR STRIPES ON ONE END OF THE BARREL.

REQUIREMENTS: ALL COMPLETE REQUIREMENTS SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS81824.

1. DESIGN:

THE SPLICE SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE 1 AND TABLE 1. UNLESS OTHERWISE INDICATED, DIMENSIONS ARE IN INCHES. METRIC EQUIVALENTS (MM) TO THE NEAREST 0.01 MM ARE GIVEN FOR GENERAL INFORMATION AND REFERENCE ONLY. VALUES ARE CALCULATED AND ROUNDED ON 1 INCH = 25.4 MM. THE SPLICE ASSEMBLY SHALL CONSIST OF A TWO-PIECE DESIGN WHICH INCLUDES THE METAL CRIMP BARREL AND INSULATOR ASSEMBLY. CONTINUOUS OPERATING TEMPERATURE SHALL BE -65 TO +175 °C.

THE INSULATOR ASSEMBLY IS SELF SEALING AND DOES NOT REQUIRE THE APPLICATION OF HEAT TO CREATE A SEAL. THE APPLICATION OF HEAT WILL HAVE NO IMPACT ON THE PERFORMANCE OF THE DEVICE.

2. MATERIALS:

METAL CRIMP BARREL: COPPER ALLOY PER ASTM B1, B2, B3, B75/B75M, B187/187M, B280, B301/B301M, F68; OR SAE J461, J463. FINISH WILL BE NICKEL PER SAE-AMS-QQ-N-290, CLASS 2.

INSULATION SLEEVE: MODIFIED FLUOROPOLYMER PER SAE-AMS-DTL-23053/18. ALTERNATE MATERIAL: POLYVINYLIDENE FLUORIDE PER SAE-AMS-DTL-23053/8.

SEAL GROMMETS: FLUOROSILICONE RUBBER.

RETAINING CLIP: BERYLLIUM COPPER PER ASTM B194, SAE J463 OR COPPER NICKEL UNS C70250.

3. QUALIFICATION:

QUALIFICATION TESTS SHALL BE IN ACCORDANCE WITH AS81824 QUALIFICATION INSPECTION TABLE EXCEPT AS FOLLOWS:

- a. TWENTY-TWO (22) SAMPLES SHALL BE TESTED FOR EACH DASH NUMBER AND DISTRIBUTED IN ACCORDANCE WITH AS81824 QUALIFICATION INSPECTION TABLE.
- b. TWO SAMPLE SETS SHALL BE PROVIDED. EIGHTEEN (18) SPLICE ASSEMBLIES SHALL BE TERMINATED IN ACCORDANCE WITH THE SUPPLIER ASSEMBLY INSTRUCTIONS WITH M22759/11 WIRE. FOUR (4) SPLICE ASSEMBLIES SHALL BE TERMINATED IN ACCORDANCE WITH THE SUPPLIER ASSEMBLY INSTRUCTIONS WITH M22759/44, /91 OR /191 WIRE FOR SIZES 26, 18, 14. THESE FOUR SPLICE ASSEMBLIES SHALL BE SUBJECTED TO GROUP V TESTING ONLY. NO ETCHING OR SOLVENT TREATING OF THE ASSOCIATED WIRE INSULATION SHALL BE PERMITTED.
- c. GROUPS II, III, AND VIII ARE NOT APPLICABLE
- d. GROUP V. MODIFIED TEMPERATURE CYCLING AND HEAT AGING TEST: BOTH TESTS SHALL BE PERFORMED AS SPECIFIED IN AS81824 EXCEPT TEMPERATURE CYCLING SHALL BE THE MAXIMUM RATED TEMPERATURE OF 175 °C AND TEMPERATURE AGING SHALL BE 200 °C.
- e. ADD: GROUP IX: INSULATION SLIP RESISTANCE TEST: TWO (2) SPLICE ASSEMBLIES SHALL BE TERMINATED IN ACCORDANCE WITH THE SUPPLIER ASSEMBLY INSTRUCTIONS TO MAXIMUM WIRE SIZE (20, 16, AND 12). TERMINATED SPLICE ASSEMBLY SHALL WITHSTAND 10 POUNDS TENSILE LOAD APPLIED AT THE RATE OF 1 INCH PER MINUTE. FOLLOWING THE INSULATION RESISTANCE TEST SAMPLES SHALL BE SUBJECTED TO INSULATION RESISTANCE TEST AS SPECIFIED IN AS81824, TEST TIME OF 60 SECONDS (SEE FIGURE 2).

	<b>AEROSPACE STANDARD</b>	<b>AS81824/14</b> SHEET 2 OF 4
	SPLICE, ELECTRIC, PERMANENT, CRIMP STYLE, NICKEL-COATED COPPER, INSULATED, ENVIRONMENT RESISTANT, CLASS 1, 175 °C, HEATLESS SEALING	

HOLE SIZED TO PERMIT WIRE  
MOVEMENT AND PREVENT  
INSULATOR ASSEMBLY MOVEMENT

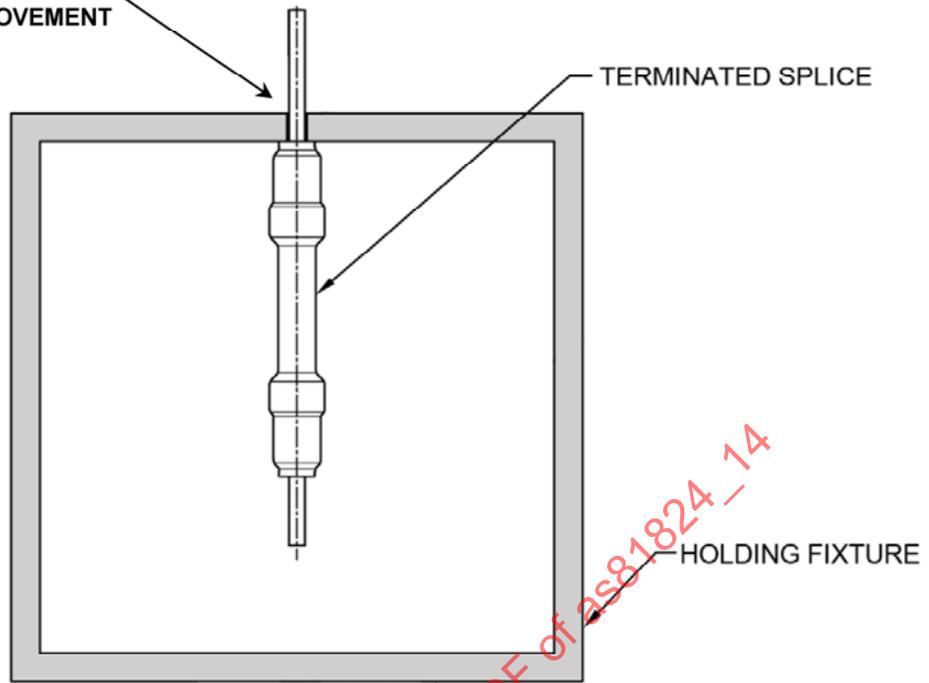


FIGURE 2 - FIXTURE FOR INSULATION SLIP RESISTANCE TEST

4. TOOLING:

SEE TABLE 2.

TABLE 2 - CRIMP TOOLS

PART NUMBER	CRIMP TOOL NUMBER	DIE TYPE CRIMP TOOLS	
		TOOL NUMBER	DIE NUMBER
M81824/14-1	M22520/37-01	M22520/5-01	M22520/5-103
M81824/14-2	M22520/37-01	M22520/5-01	M22520/5-103
M81824/14-3	M22520/37-01	M22520/5-01	M22520/5-102

5. ASSEMBLY INSTRUCTIONS:

REFER TO SUPPLIER'S ASSEMBLY INSTRUCTIONS FOR INSTALLING DETAILS.

APPLICATION NOTES:

1. INTENDED USE:

- a. THIS SPLICE IS INTENDED FOR USE IN MAKING ENVIRONMENTALLY PROTECTED PERMANENT JOINTS CONNECTING ONE TO ONE WIRES FOR WIRES FALLING WITHIN THE DIAMETER RANGE SPECIFIED IN THIS SPECIFICATION WITHOUT THE APPLICATION OF HEAT (HEATLESS INSTALLATION).
- b. THE CRIMPING OF THE METAL CRIMP BARREL IS INTENDED TO BE PERFORMED PRIOR TO INSERTION OF THE METAL CRIMP BARREL INTO THE INSULATOR ASSEMBLY.

2. THIS SPLICE MAY BE USED WITH TIN, NICKEL AND SILVER COATED CONDUCTORS, WHICH FALL WITHIN THE WIRE JACKET RANGE AS INDICATED PER TABLE 3. THE APPLICATION SHALL NOT EXCEED THE 175 °C RATING OF THE SPLICE.



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NICKEL-COATED COPPER, INSULATED, ENVIRONMENT  
RESISTANT, CLASS 1, 175 °C, HEATLESS SEALING

**AS81824/14**  
SHEET 3 OF 4