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REV.  
A

AS81824™/12

FEDERAL SUPPLY CLASS  
5940

## RATIONALE

REMOVE INSTALLATION TOOLING DETAILS WITH THE PUBLICATION OF AS22520/44. HEAT AGING TEMPERATURE REVISED TO BE COMPATIBLE WITH THE NOT TO EXCEED HEATING STATEMENT IN THE APPLICATION NOTE.

## NOTICE

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

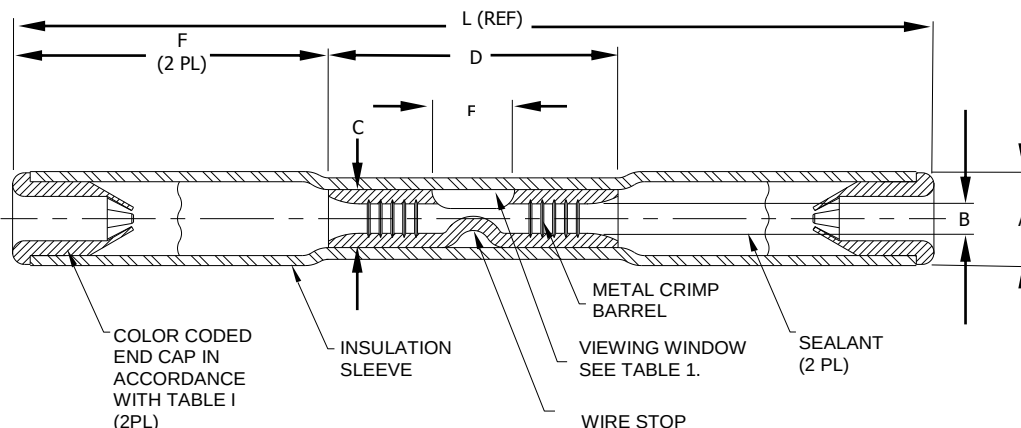


FIGURE 1 - HEATLESS SEALED SPLICE

TABLE 1 - CONSTRUCTION DETAILS – INCHES (MM)

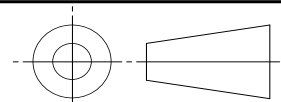
| PART NUMBER | WIRE SIZE RANGE | WIRE O.D. RANGE   | A MAX      | B ±.005 (0.1) | C ±.008 (0.2) | D ±.020 (0.5) | E ±.010 (0.3) | F ±.020 (0.5) | (L)          | END CAP COLOR CODE (2 PL) |
|-------------|-----------------|-------------------|------------|---------------|---------------|---------------|---------------|---------------|--------------|---------------------------|
| M81824/12-1 | 26-24-22-20     | .04-.07 (1.0-1.8) | .170 (4.3) | .048 (1.2)    | .097 (2.5)    | .475 (12.1)   | .140 (3.6)    | .500 (12.7)   | 1.475 (37.5) | RED                       |
| M81824/12-2 | 18-16           | .06-.10 (1.5-2.5) | .205 (5.2) | .070 (1.8)    | .133 (3.4)    | .575 (14.6)   | .120 (3.0)    | .465 (11.8)   | 1.505 (38.1) | BLUE                      |
| M81824/12-3 | 14-12           | .08-.14 (2.0-3.6) | .240 (6.1) | .095 (2.4)    | .157 (4.0)    | .575 (14.6)   | .120 (3.0)    | .465 (11.8)   | 1.505 (38.1) | YELLOW                    |

## NOTES:

- CONDUCTOR VIEWING WINDOW AND WIRE STOP CONFIGURATION MAY VARY FROM THAT SHOWN.
- CONTOURS MAY VARY FROM THAT SHOWN.
- UNLESS OTHERWISE INDICATED, DIMENSIONS ARE IN INCHES (MM).
- METRIC EQUIVALENTS TO THE NEAREST 0.1 MM ARE GIVEN FOR GENERAL INFORMATION AND REFERENCE ONLY. VALUES ARE CALCULATED AND ROUNDED ON 1 INCH = 25.4 MM

SAE values your input. To provide feedback on this Technical Report, please visit <http://www.sae.org/technical/standards/AS81824/12A>

THIRD ANGLE PROJECTION



CUSTODIAN: AE-8/AE-8C2

PROCUREMENT SPECIFICATION: AS81824



## AEROSPACE STANDARD

SPLICE, ELECTRIC, PERMANENT, CRIMP STYLE, TIN-COATED COPPER, INSULATED, ENVIRONMENT RESISTANT, CLASS 1, 150 °C, HEATLESS SEALING

AS81824™/12  
SHEET 1 OF 4

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Documents

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**MATERIALS:**

1. CRIMP BARREL: COPPER PER ASTM B280, ASTM B75, ASTM F68, OR ASTM B187.
2. METAL FINISH: TIN PLATED.
3. INSULATION SLEEVE: TRANSPARENT POLYVINYLIDENE FLUORIDE PER AMS-DTL-23053/8.
4. SEALANT MATERIAL: TRANSPARENT CROSSLINKED GEL.
5. END CAPS: THERMOPLASTIC. COLOR CODED PER TABLE 1.

**REQUIREMENTS:**

1. CONSTRUCTION: THE SPLICE ASSEMBLY SHALL CONSIST OF A ONE-PIECE-ASSEMBLY WHICH INCLUDES THE SEALING SLEEVE WITH SELF-CONTAINED GEL SEALANT, METAL CRIMP BARREL, AND COLOR CODED END CAPS.
2. SPLICE ASSEMBLY (TRANSPARENT - SLEEVE AND GEL) SHALL PERMIT VISUAL EXAMINATION OF THE WIRE AS IT IS INSTALLED IN THE SPLICE ASSEMBLY. THE WIRE CONDUCTOR ENDS SHALL BE VISIBLE AGAINST THE WIRE STOP PRE AND POST CRIMPING OPERATION.
3. CONTINUOUS OPERATING TEMPERATURE SHALL BE -55 TO +150 °C.
4. QUALIFICATION TESTS SHALL BE IN ACCORDANCE WITH AS81824 QUALIFICATION INSPECTION TABLE EXCEPT AS FOLLOWS:
  - a. TWENTY-FOUR SAMPLES SHALL BE TESTED FOR EACH DASH NUMBER AND DISTRIBUTED IN ACCORDANCE WITH AS81824 QUALIFICATION INSPECTION TABLE EXCEPT GROUP VIII SHALL BE 8 SAMPLES.
  - b. SPLICE ASSEMBLIES SHALL BE MADE IN ACCORDANCE WITH THE SUPPLIER ASSEMBLY INSTRUCTIONS WITH AS22752/82 WIRE FOR AS81824/12-1, AND AS22759/92 WIRE FOR AS81824/12-2 AND -3. NO ETCHING OR SOLVENT TREATING OF THE ASSOCIATED WIRE INSULATION SHALL BE PERMITTED. THE SAMPLES SHALL BE CRIMPED USING THE CRIMP TOOL SPECIFIED IN TABLE 2. GROUPS II AND III ARE NOT APPLICABLE.
  - c. UNRESTRICTED RECOVERY AND LONGITUDINAL CHANGE: TESTS ARE NOT APPLICABLE.
  - d. GROUP V. MODIFIED TEMPERATURE CYCLING AND HEAT AGING TEST: THE HEAT AGING TEST SHALL BE PERFORMED AT THE MAXIMUM RATED TEMPERATURE (SEE REQUIREMENT PARAGRAPH 3) FOR THE DURATION OF 2250 HOURS. THE SPLICE ASSEMBLY SHALL BE MOUNTED VERTICALLY WITH A FILTER PAPER POSITIONED BELOW THE SPLICE ASSEMBLY (SEE FIGURE 2). ANY LEAKAGE OF THE SEALANT MIGRATED ONTO THE FILTER PAPER AROUND THE WIRE SHALL BE CONSIDERED AS A FAILURE OF THE SPLICE ASSEMBLY. IN THE TEST SET UP, WIRE SHALL PENETRATE THE FILTER PAPER BY THE OPENING MADE BY A CROSS CUT. LEGS OF THE CROSS SHALL BE APPROXIMATELY EQUAL TO THE OUTER DIAMETER OF THE WIRE SUCH THAT THE PAPER IS IN CONTACT WITH THE WIRE JACKET DURING THE TEST. THE FILTER PAPER SHALL BE LOCATED AT A DISTANCE EQUAL TO THE OUTER DIAMETER OF THE SPLICE (SEE "A" IN TABLE 1).
5. GROUP VI. VIBRATION: VIBRATIONS SHALL INCLUDE AN 18 HOUR THIRD AXIS (VERTICAL). ANY LEAKAGE OF THE SEALING GEL DURING VIBRATION IN ANY OF THE THREE AXES OF VIBRATION SHALL BE CONSIDERED AS A FAILURE OF THE SPLICE ASSEMBLY. SAMPLES SHALL PASS ALL REMAINING TESTS IN GROUP V.

|                                                                                     |                                                                                                                                  |                                    |                         |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------------------------|
|  | <b>AEROSPACE STANDARD</b>                                                                                                        | <b>AS81824™/12</b><br>SHEET 2 OF 4 | <b>REV.</b><br><b>A</b> |
|                                                                                     | SPLICE, ELECTRIC, PERMANENT, CRIMP STYLE, TIN-COATED COPPER, INSULATED, ENVIRONMENT RESISTANT, CLASS 1, 150 °C, HEATLESS SEALING |                                    |                         |



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