FEDERAL SUPPLY CLASS
5940

RATIONALE

AS6224/1A FOR WRAP-AROUND INSULATION REPAIR AND PROTECTION SLEEVES IS CONSIDERED MATURE AND THE COMMITTEE DOES NOT ANTICIPATE FUTURE TECHNICAL CHANGES. STABILIZATION DOES NOT IMPLY THE PROCESS OR PRODUCT IS UNACCEPTABLE FOR APPLICATIONS FOR WHICH IT IS DESIGNED. ANY TECHNICAL CHANGES NOTED BY A SUPPLIER OR USER WHICH RESULTS IN A PRODUCT OR REQUIREMENT CHANGE WILL BE ADDRESSED BY A NEW REVISION. NO QUALIFIED SOURCE IS CURRENTLY AVAILABLE AND USAGE IS ESTIMATED TO BE LOW.

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ISSUED 2015-12 REAFFIRMED 2020-08 STABILIZED 2025-02

For more information on this standard, visit
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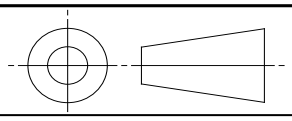
THIRD ANGLE PROJECTION



CUSTODIAN: AE-8C2

PROCUREMENT SPECIFICATION: AS6224

SAE INTERNATIONAL

AEROSPACE STANDARD

REPAIR SLEEVE, PRIMARY WIRE INSULATION DAMAGE, ELECTRIC, PERMANENT, ENVIRONMENT RESISTANT, 150 °C MAXIMUM OPERATING TEMPERATURE

AS6224™/1

REV. A

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NOTICE

THE COMPLETE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS6224.

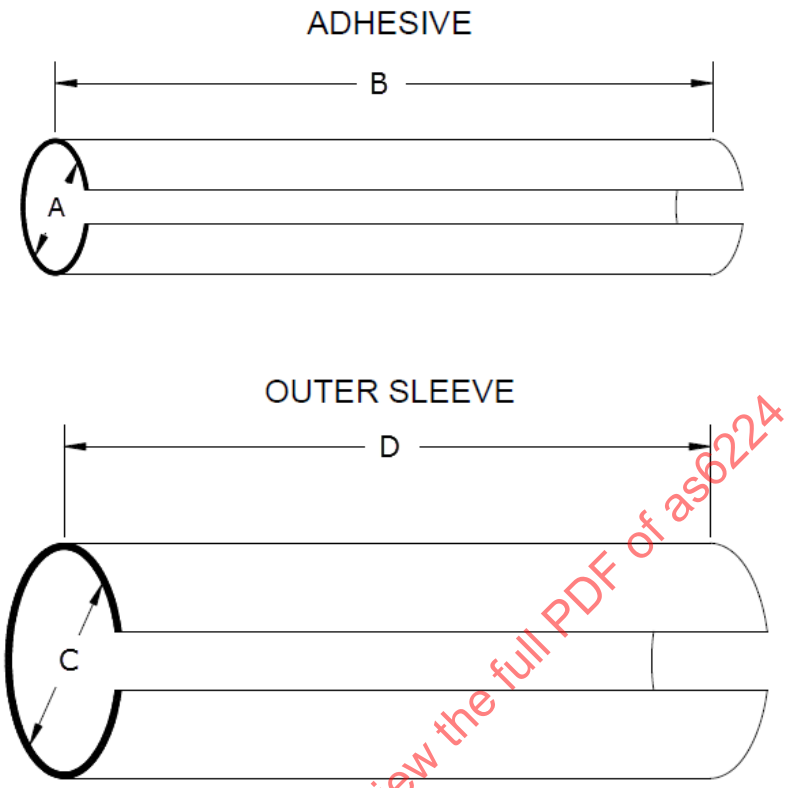

FIGURE 1 - REPAIR SLEEVE CONFIGURATION

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TABLE 1 - CONSTRUCTION DETAILS

PART NUMBER	TYPICAL WIRE SIZE RANGE (REF)	COLOR CODE	A REF 1/	B ±.06 ±(1.5)	C REF 1/	D ±.06 ±(1.5)	MINIMUM WIRE O.D.	MAXIMUM WIRE O.D.	WEIGHT LB (Kg) PER 1,000 PIECES MAXIMUM
AS6224/1-1	24-26	GREEN	.044 (1.11)	.86 (21.8)	.090 (2.29)	.75 (19.1)	.031 (0.80)	.043 (1.10)	.445 (0.202)
AS6224/1-2	20-22	RED	.066 (1.68)	.86 (21.8)	.108 (2.74)	.75 (19.1)	.044 (1.11)	.059 (1.50)	.533 (0.242)
AS6224/1-3	16-18	BLUE	.084 (2.13)	.86 (21.8)	.135 (3.43)	.75 (19.1)	.060 (1.52)	.090 (2.30)	.703 (0.319)
AS6224/1-4	12-14	YELLOW	.133 (3.34)	.86 (21.8)	.189 (4.80)	.75 (19.1)	.091 (2.31)	.110 (2.80)	.892 (0.405)

1/ REFERENCE DIAMETERS ARE PRIOR TO THE SLITTING OF THE SLEEVE.

REQUIREMENTS: ALL REQUIREMENTS SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS6224.

1. DESIGN: THE REPAIR SLEEVE SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE 1 AND TABLE 1. DIMENSIONS ARE IN INCHES. METRIC EQUIVALENTS (TO THE NEAREST 0.01 MM) ARE GIVEN FOR GENERAL INFORMATION ONLY AND ARE BASED UPON 1 INCH = 25.4 MM. UNLESS OTHERWISE SPECIFIED, TOLERANCES ARE .005 (0.13 MM) FOR THREE PLACE DECIMALS AND .01 (0.25 MM) FOR TWO PLACE DECIMALS.

2. MATERIALS:

   OUTER SLEEVE: HEAT SHRINKABLE CROSS-LINKED FLUOROPOLYMER - COLOR CODED PER TABLE 1.
   ADHESIVE: HEAT MELTABLE MODIFIED FLUOROELASTOMER THERMOPLASTIC - COLOR CODED PER TABLE 1.

3. OPERATING TEMPERATURE: -55 TO 150 °C.

4. CONTOUR: THE CONTOUR OF THE SPLICE MAY VARY FROM THAT SHOWN PROVIDED THAT THE OUTER SLEEVE AND ADHESIVE REMAINS WITHIN THE MAXIMUM ENVELOPE DIMENSIONS.

5. NO ETCHING OR SOLVENT TREATING OF THE ASSOCIATED WIRE INSULATION SHALL BE PERMITTED.

6. SEALING SLEEVE CLOSURE: WHEN INSTALLED, MELTABLE SEALANT SHALL CLOSE THE OPENING AND PROVIDE SEALING.

7. SLIP RESISTANCE STRENGTH REQUIREMENT: SEE TABLE 2.

8. REPAIRABLE CONDITION: IF THE CONDUCTOR IS EXPOSED, THERE SHALL BE NO DAMAGE TO THE CONDUCTOR, AND THE EXPOSED CONDUCTOR SHALL BE NO LONGER THAN .25 INCH ALONG THE LENGTH OF THE WIRE OR IN THE LONGEST LENGTH FROM AN EDGE OF THE DAMAGE TO THE OTHER SIDE. THE AMOUNT OF INSULATION DAMAGE AT THE WIDEST POINT SHALL BE LESS THAN 55% OF WIRE OR CABLE CIRCUMFERENCE.

9. QUALIFICATION:

TABLE 2 - TEST WIRE AND SLIP RESISTANCE REQUIREMENTS

PART NUMBER	WIRE RANGE (COLOR OPTIONAL)		SLIP RESISTANCE
	MINIMUM	MAXIMUM	MINIMUM (LBF)
AS6224/1-1	M22759/11-26 M22759/82-26	M22759/11-24 M22759/82-24	2
AS6224/1-2	M22759/11-22 M22759/82-22	M22759/11-20 M22759/82-20	4
AS6224/1-3	M22759/11-16 M22759/82-16	M22759/11-18 M22759/82-18	6
AS6224/1-4	M22759/11-14 M22759/82-14	M22759/11-12 M22759/82-12	8

QUALIFICATION SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST ISSUE OF AS6224 UNLESS OTHERWISE SPECIFIED IN THIS DETAIL SPECIFICATION.

DIAMETERS A AND C SHALL BE VERIFIED ON OUTER SLEEVE AND ADHESIVE PRIOR TO BEING CUT WITH THE SLIT. OUTER SLEEVE AND ADHESIVE SAMPLES WITHOUT THE SLIT SHALL BE SUBMITTED TO THE QUALIFYING AGENCY OR OTHER APPLICABLE TESTING FACILITIES.

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THE SIMULATED DAMAGE SHALL BE DONE BY SCRAPING THE INSULATION WITH A KNIFE SUCH THAT EXPOSED CONDUCTOR OR SHIELD IS APPROXIMATELY .25 INCH AND OVERALL DAMAGE TO BE NO LONGER THAN .50 INCH (START OF INSULATION SCRAPE TO THE END). ALTERNATELY, A BAND OF INSULATION WIRE MAY BE REMOVED BY MAKING TWO CIRCUMFERENTIAL SLITS OF APPROXIMATELY .25 INCH APART THROUGH THE INSULATION DOWN TO THE CONDUCTOR AND REMOVING THAT SECTION TO EXPOSE THE CONDUCTOR.

10. TOOLING:

TABLE 3 - ADHESIVE SETTING TOOLS

REPAIR SLEEVE NUMBER	SETTING TOOL NUMBER
AS6224/1-1	M81969/8-08 1/
AS6224/1-2	
AS6224/1-3	M81969/8-10 1/
AS6224/1-4	

1/ MIL-I-81969/8 INSTALLING AND REMOVAL TOOLS, CONNECTOR ELECTRICAL CONTACT, TYPES I AND II, CLASS 2, COMPOSITION A.

APPLICATION NOTES:

1. THIS REPAIR SLEEVE IS INTENDED TO REPAIR PRIMARY WIRE WITH DAMAGE TO INSULATION ONLY WITH OR WITHOUT EXPOSED CONDUCTOR. SEE REPAIRABLE CONDITION REQUIREMENT.

2. USE OF THIS REPAIR SLEEVE AT BENDS, CONTINUOULSY IMMERSED IN FLUID(S), AREAS WEHRE WIRE OR CABLE IS FLEXING IN A NORMAL OPERATION ARE NOT RECOMMENDED.

3. FOLLOW THE MANUFACTURER'S INSTALLATION PROCEDURES,AND USE HEATING TOOLS AND OTHER ASSEMBLY TOOLS RECOMMENDED BY THE MANUFACURER.

4. ALLOW REPAIR SLEEVE TO COOL IN PLACE PRIOR TO HANDLING IN PLACE.

5. INSTALLATION PROCEDURE:

   a. RECOMMENDED TOOL:

      1. HEAT SOURCE - THERMAL HEAT GUN OR INFRARED HEAT SOURCE.

   b. INSTALLATION STEPS:

      1. EXAMINE DAMAGE TO ENSURE THE CONDUCTOR IS FREE OF DAMAGE.

      2. CLEAN THE AREA AROUND THE DAMAGED AREA WITH ISOPROPHYL ALCOHOL OR APPROPRIATE CLEANING SOLUTION FOR THE WIRE INSULATION AND ABRAD AS IN FIGURE 2.

      3. PLACE THE ADHESIVE NEXT TO THE DAMAGED AREA WHERE THE DAMAGE IS LOCATED AT THE LONGITUDINAL CENTER OF THE ADHESIVE SLEEVE. SEE FIGURE 3.

      4. MARK ON THE INSULATION THE EDGE OF THE ADHESIVE SLEEVE. SEE FIGURE 3.

      5. PLACE THE ADHESIVE SLEEVE SO THE EDGE MARKING IS ALIGNED WITH THE END OF THE ADHESIVE SLEEVE. SEE FIGURE 4.

      6. PLACE THE OUTER SLEEVE OVER THE ADHESIVE SLEEVE. SEE FIGURES 4 AND 5.

      7. HEAT BOTH OUTER SLEEVE AND ADHESIVE SLEEVE WITH THE HEAT SOURCE UNTIL ADHESIVE SLEEVE MELTS AND FLOWS TO SEAL THE SLIT AREA AS WELL AS BOTH ENDS.

      8. USE SETTING TOOL (SEE TABLE 3) TO HOLD THE SLEEVE IN PLACE UNTIL COOLED. SEE FIGURES 6 AND 7.

      9. EXAMINE THE COMPLETED REPAIR.

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