

SAE Executive Standards Committee Rules provide that: " This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user." SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

**REV. B**  
**AS85485™/5**

FEDERAL SUPPLY CLASS  
6145

**RATIONALE**

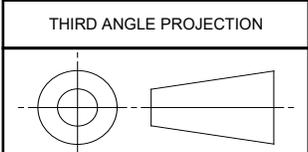
AS85485/5 IS BEING STABILIZED BECAUSE THE COMMITTEE DOES NOT ANTICIPATE FUTURE TECHNICAL CHANGES. FILTERLINE CABLES ARE CONSIDERED WELL-ESTABLISHED PRODUCTS. QUALIFIED SUPPLIERS ARE STILL MAINTAINED. REFERENCE CHANGES NOTED BY THE SUPPLIERS WHICH RESULTS IN A PRODUCT CHANGE WILL BE ADDRESSED BY A NEW REVISION.

**STABILIZED NOTICE**

THIS DOCUMENT HAS BEEN DECLARED "STABILIZED" BY THE SAE AE-8D WIRE AND CABLE COMMITTEE AND WILL NO LONGER BE SUBJECT TO PERIODIC REVIEWS FOR CURRENCY. USERS ARE RESPONSIBLE FOR VERIFYING REFERENCES AND CONTINUED SUITABILITY OF TECHNICAL REQUIREMENTS. NEWER TECHNOLOGY MAY EXIST.

SAENORM.COM : Click to view the full PDF of as85485\_5b

**For more information on this standard, visit**  
<https://www.sae.org/standards/content/AS85485/5B>



CUSTODIAN: AE-8/AE-8D		PROCUREMENT SPECIFICATION: AS85485	
	<b>AEROSPACE STANDARD</b>		<b>AS85485™/5</b>
	CABLE, ELECTRIC, FILTER LINE, COMPONENT WIRE, TIN-COATED COPPER CONDUCTOR, RADIO FREQUENCY ABSORPTIVE, 150 °C, 600-VOLT		

ISSUED 2004-06 REVISED 2015-12 STABILIZED 2021-03

NOTICE

THE COMPLETE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS85485.

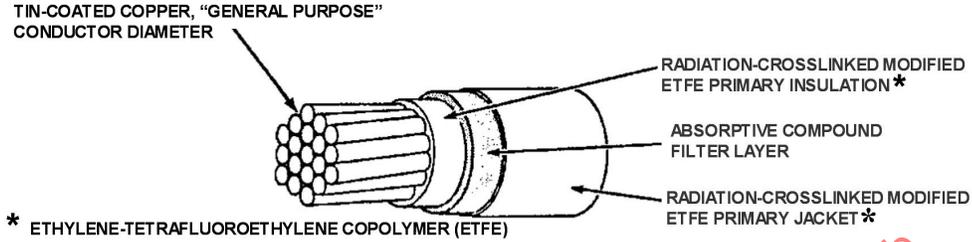


FIGURE 1 - AS85485/5 ETFE CONFIGURATION

TABLE 1 - CONSTRUCTION DETAILS

PART NO. 1/ M85485/5	WIRE SIZE	STRANDING (NUMBER OF STRANDS X AWG GAGE OF STRANDS)	DIAMETER OF STRANDED CONDUCTOR (INCHES)		FINISHED WIRE		
			(MIN)	(MAX)	RESISTANCE AT 20 °C (68 °F) (OHMS/1,000 FEET) (MAX)	DIAMETER (INCHES)	WEIGHT (LB/1,000 FEET) (MAX)
-22-*	22	19 X 34	.029	.033	16.2	.062 ± .004	5.1
-20-*	20	19 X 32	.037	.041	9.88	.070 ± .004	7.0
-18-*	18	19 X 30	.046	.051	6.23	.080 ± .004	9.7
-16-*	16	19 X 29	.052	.058	4.81	.086 ± .004	11.7
-14-*	14	19 X 27	.065	.073	3.06	.100 ± .004	16.6
-12-*	12	37 X 28	.084	.090	2.02	.127 ± .004	26.1
-10-*	10	37 X 26	.106	.114	1.26	.151 ± .005	39.1

1/ THE ASTERISKS IN THE PART NUMBER COLUMN SHALL BE REPLACED BY COLOR CODE DESIGNATORS IN ACCORDANCE WITH AS85485 (SEE PIN BELOW).

TABLE 2 - PERFORMANCE DETAILS

PART NO. 1/ M85485/5	BEND TESTING			
	MANDREL DIAMETER (INCHES) (±3%)		TEST LOAD (LB) (±3%)	
	CROSSLINKING PROOF, IMMERSION AND LIFE CYCLE TESTS	COLD BEND TEST	CROSSLINKING PROOF, IMMERSION AND LIFE CYCLE TESTS	COLD BEND TEST
-22-*	.500	1.00	.75	3.00
-20-*	.750	1.00	1.25	4.00
-18-*	1.00	1.50	1.75	4.00
-16-*	1.00	1.50	2.00	5.00
-14-*	1.00	1.50	2.00	5.00
-12-*	1.50	3.00	2.50	5.00
-10-*	1.50	3.00	2.50	5.00

1/ THE ASTERISKS IN THE PART NUMBER COLUMN SHALL BE REPLACED BY COLOR CODE DESIGNATORS IN ACCORDANCE WITH AS85485 (SEE PIN BELOW).

	<b>AEROSPACE STANDARD</b>	<b>AS85485™/5</b> SHEET 1 OF 4	<b>REV.</b> <b>B</b>
	CABLE, ELECTRIC, FILTER LINE, COMPONENT WIRE, TIN-COATED COPPER CONDUCTOR, RADIO FREQUENCY ABSORPTIVE, 150 °C, 600-VOLT		

REQUIREMENTS: ALL REQUIREMENTS SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS85485.

1. CONFIGURATION AND MATERIAL:

WIRE CONFIGURATION AND MATERIAL SHALL BE IN ACCORDANCE WITH FIGURE 1 AND TABLE 1.

2. RATINGS:

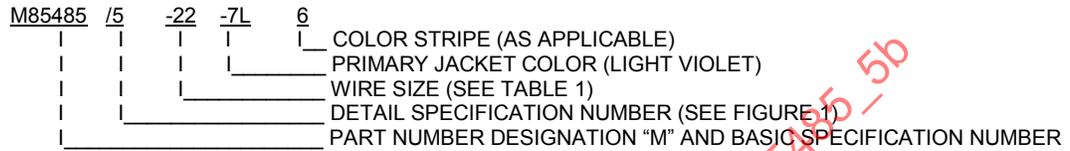
TEMPERATURE RATING: 150 °C (302 °F) MAXIMUM CONTINUOUS CONDUCTOR TEMPERATURE.

VOLTAGE RATING: IN ACCORDANCE WITH AS85485.

3. BLOCKING: 200 °C ± 3 °C (392 °F ± 5 °F) FOR 6 HOURS.

4. IDENTIFICATION MARKING:

PART IDENTIFICATION NUMBER (PIN) MARK SHALL BE AS FOLLOWS:



COMPONENT WIRE PIN MARKING: A COMPONENT WIRE PIN SUPPLIED AS A FINISHED PART SHALL BE MARKED ON THE OUTER SURFACE OF THE COMPONENT WIRE. THE PRIMARY JACKET COLOR CODE AND STRIPE CODE IS NOT REQUIRED, BUT IF INCLUDED ALL INFORMATION SHALL BE INCLUDED.

CABLE MARKING: COMPONENT WIRE USED AS A COMPONENT IN CABLE (I.E., AS85485/7 OR /8 CABLE) SHALL BE MARKED IN ACCORDANCE WITH THE CABLE REQUIREMENTS.

COMPONENT WIRE IDENTIFICATION MARKING AND COLOR STRIPE DURABILITY: 125 CYCLES (250 STROKES) MINIMUM, 500 GRAMS WEIGHT.

COLOR:

- PRIMARY INSULATION - WHITE
- FILTER LAYER - BLACK (SEE APPLICATION NOTES)
- PRIMARY JACKET - LIGHT VIOLET (-7L)

5. CONCENTRICITY: PRIMARY INSULATION - 50% MINIMUM; FINISHED WIRE - 70% MINIMUM.

6. CROSSLINKING PROOF TEST: 7 HOURS AT 300 °C ± 3 °C (572 °F ± 5 °F) USING THE MANDRELS AND WEIGHTS SPECIFIED IN TABLE 2.

7. FLAMMABILITY: 3 SECONDS MAXIMUM, 3 INCHES MAXIMUM.

8. HUMIDITY RESISTANCE: INSULATION RESISTANCE, 5,000 MEGOHMS FOR 1,000 FEET MINIMUM.

9. IMMERSION: DIAMETER INCREASE PERMITTED SHALL BE 5% MAXIMUM; THERE SHALL BE NO CRACKING OR DIELECTRIC BREAKDOWN (VOLTAGE WITHSTAND) WHEN SUBJECTED TO THE BEND TEST WITH THE WEIGHT AND MANDREL SIZES SPECIFIED IN TABLE 2.

10. INSULATION ELONGATION AND TENSILE STRENGTH (PRIMARY INSULATION, FILTER LAYER AND JACKET SHALL BE PULLED TOGETHER):

- ELONGATION - 50% MINIMUM
- TENSILE STRENGTH - 3,000 LBF/IN<sup>2</sup> MINIMUM

11. INSULATION FLAWS:

FOR PRIMARY INSULATION ONLY:

- SPARK TEST; 2.5 KILOVOLTS (RMS), 60 HZ
- IMPULSE DIELECTRIC TEST; 6.0 KILOVOLTS (PEAK)

	<b>AEROSPACE STANDARD</b>	<b>AS85485™/5</b> SHEET 2 OF 4	<b>REV.</b> <b>B</b>
	CABLE, ELECTRIC, FILTER LINE, COMPONENT WIRE, TIN-COATED COPPER CONDUCTOR, RADIO FREQUENCY ABSORPTIVE, 150 °C, 600-VOLT		

FINISHED WIRE:

SPARK TEST; 3.0 KILOVOLTS (RMS), 60 HZ  
 IMPULSE DIELECTRIC TEST; 8.0 KILOVOLTS (PEAK)

12. INSULATION RESISTANCE: 5,000 MEGOHMS FOR 1,000 FEET MINIMUM
13. INSULATION THICKNESS:
  - PRIMARY INSULATION; .003 INCH MINIMUM
  - FILTER LAYER; AVERAGE .003 INCH MINIMUM
  - PRIMARY JACKET; .0035 INCH MINIMUM
14. LIFE CYCLE: 168 HOURS AT 200 °C ± 3 °C (392 °F ± 5 °F). THERE SHALL BE NO CRACKING OR DIELECTRIC BREAKDOWN (VOLTAGE WITHSTAND) WHEN SUBJECTED TO THE BEND TEST WITH THE WEIGHT AND MANDREL SIZES SPECIFIED IN TABLE 2.
15. LOW TEMPERATURE-COLD BEND: -65 °C ± 2 °C (-85 °F ± 4 °F) FOR 4 HOURS. THERE SHALL BE NO CRACKING OR DIELECTRIC BREAKDOWN (VOLTAGE WITHSTAND) WHEN SUBJECTED TO THE BEND TEST WITH THE WEIGHT AND MANDREL SIZES SPECIFIED IN TABLE 2.
16. SHRINKAGE: .125 INCH MAXIMUM AT 200 °C ± 3 °C (392 °F ± 5 °F).
17. SMOKE: 200 °C ± 2 °C (392 °F ± 4 °F), NO VISIBLE SMOKE.
18. SURFACE RESISTANCE: 500 MEGOHMS - INCHES MINIMUM, INITIAL AND FINAL READINGS
19. THERMAL SHOCK RESISTANCE: OVEN TEMPERATURE, 150 °C ± 3 °C (302 °F ± 5 °F). THE MAXIMUM CHANGE IN MEASUREMENTS SHALL BE .060 INCH.
20. VOLTAGE WITHSTAND (POST-ENVIRONMENTAL): 1,500 VOLTS (RMS) 60 HZ.
21. WRAP TEST: 6 HOURS AT 200 °C ± 3 °C (392 °F ± 5 °F); NO CRACKING.
22. ATTENUATION: THE WIRE ATTENUATION SHALL BE IN ACCORDANCE WITH TABLE 3 WHEN TESTED IN A M85485/8 ONE COMPONENT WIRE, TIN-COATED COPPER SHIELDED CONFIGURATION (SEE APPLICATION NOTE).

**TABLE 3 - AS85485/5 ATTENUATION**

M85484/8 ONE CONDUCTOR CONFIGURATION		PASS BAND (dB/FT)			TRANSITION BAND (dB/FT)			STOP BAND (dB/FT)
WIRE SIZE	WIRE TYPE	1.0 MHz	10.0 MHz		100 MHz	500 MHz	1,000 MHz	1 TO 12 GHz
		(MAX)	(MIN)	(MAX)	(MIN)	(MIN)	(MIN)	(MIN)
-22	AS85485/5	.015	.04	.10	1.3	12	30	30
-20						13	33	33
-18						12	30	30
-16						13	33	33
-14						12	30	30
-12						13	33	33
-10						12	30	30

23. THERMAL STABILITY (QUALIFICATION ONLY): 1,250 HOURS AT 180 °C ± 3 °C (356 °F ± 5 °F). THE SAMPLE SHALL BE M85485/8 ONE COMPONENT, TIN-COATED COPPER SHIELDED CONFIGURATION IN CONDUCTOR SIZE 22 THRU SIZE 16. AFTER EXPOSURE THE VOLTAGE WITHSTAND (DIELECTRIC) SHALL BE 1500 VOLTS (RMS) 60 HZ AND THE STOP BAND ATTENUATION SHALL BE AS SPECIFIED IN TABLE 3.
24. QUALIFICATION SAMPLE: TWO SPECIMENS ARE REQUIRED. ONE SPECIMEN SHALL INCLUDE THE PIN MARKING AND ONE SPECIMEN SHALL INCLUDE THE STRIPE MARKING. EITHER SPECIMEN MAY BE USED TO COMPLETE THE REMAINING AS85485 QUALIFICATION REQUIREMENTS.

	<b>AEROSPACE STANDARD</b>	<b>AS85485™/5</b> SHEET 3 OF 4	<b>REV.</b> <b>B</b>
	CABLE, ELECTRIC, FILTER LINE, COMPONENT WIRE, TIN-COATED COPPER CONDUCTOR, RADIO FREQUENCY ABSORPTIVE, 150 °C, 600-VOLT		