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MILITARY SPECIFICATION SHEET

# SLEEVING, FOR IDENTIFICATION MARKING, HEAT SHRINKABLE, POLYVINYLIDENE FLUORIDE, FLEXIBLE

This specification is approved for use within the Naval Air Systems Command, Department of the Navy, and is available for use by all Dpeartments and Agencies of the Department of Defense.

The complete requirements for procuring the sleeving described herein shall consist of this document and the issue in effect of MIL-I-85848(AS).

REQUIREMENTS:

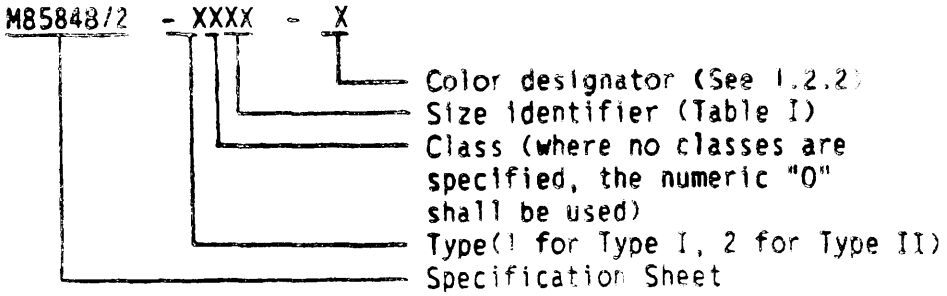
Continuous operating temperature range: Type I: -40°C to +150°C (-40°F to +302°F)
Type II -55°C to +175°C (-67°F to +347°F)

Classification: The heat shrinkable identification sleeving shall be furnished in the following types, as specified:

Type I - Flatweb format
Type II - Sleeving format

Color: The standard color shall be white. Other colors are available. All colors shall conform to the requirements of Class 1 of MIL-STD-104.

Military Part Number: The Military Part Number shall consist of the basic number of this specification sheet and dash numbers as shown below:




Part number example: White, type II, .187 as supplied diameter, 1.62 inch length shall be identified as: M85848/2-2004-9.

AMSC N/A
FSC 5970

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TABLE I - CONSTRUCTION DETAILS FOR TYPE I FLATWEB (Inches)

| MILITARY PART NUMBER | W WIDTH AS SUPPLIED | L LENGTH AS SUPPLIED | RANGE OF WIRE DIAMETER | MIN. # OF SLEEVES ROLL FORM PACKAGE | MIN. # OF SLEEVES FROM 1 FT LENGTH |
|---|---|---|---|---|---|
| -1001-* | .250 ± .03 | 1.000 ± .03 | .040 - .080 | 5000 | 192 |
| -1002-* | .333 ± .03 | 1.000 ± .03 | .080 - .130 | 5000 | 144 |
| -1003-* | .375 ± .03 | 1.000 ± .03 | .130 - .160 | 5000 | 128 |
| -1004-* | .500 ± .03 | 1.000 ± .03 | .160 - .235 | 5000 | 96 |
| -1005-* | .625 ± .03 | 1.000 ± .03 | .235 - .290 | 5000 | 76 |
| -1006-* | .750 ± .03 | 1.000 ± .03 | .290 - .390 | 3000 | 64 |
| -1007-* | .250 ± .03 | 2.000 ± .03 | .040 - .080 | 2500 | 96 |
| -1008-* | .333 ± .03 | 2.000 ± .03 | .080 - .130 | 2500 | 72 |
| -1009-* | .375 ± .03 | 2.000 ± .03 | .130 - .160 | 2500 | 64 |

* The asterisk in the part number shall be replaced by color code designations.

Table II Construction Details for Type II Sleeving (inch)

| MILITARY PART NUMBER | DIAMETER AS SUPPLIED MIN | DIAMETER AFTER RECOVERY MAX. | LENGTH AS SUPPLIED | MINIMUM MARKING LENGTH | RANGE OF WIRE DIAMETER | NUMBER OF SLEEVES/UNIT PACKAGE, MIN |
|---|---|---|---|---|---|---|
| -2001-* | .093 | .031 | 1.65±.05 | 1.5 | .050-.085 | 5000 |
| -2002-* | .125 | .062 | 1.65±.05 | 1.5 | .075-.115 | 5000 |
| -2003-* | .125 | .046 | 1.66±.08 | 1.5 | .050-.115 | 5000 |
| -2004-* | .187 | .093 | 1.62±.05 | 1.5 | .100-.165 | 2500 |
| -2005-* | .187 | .062 | 1.66±.05 | 1.5 | .050-.165 | 2500 |
| -2006-* | .250 | .125 | 1.60±.05 | 1.5 | .135-.235 | 2500 |
| -2007-* | .250 | .093 | 1.61±.08 | 1.5 | .100-.235 | 2500 |
| -2008-* | .375 | .187 | 1.59±.08 | 1.5 | .200-.355 | 1500 |
| -2009-* | .375 | .125 | 1.80±.08 | 1.5 | .135-.355 | 1500 |
| -2010-* | .475 | .250 | 1.73±.13 | 1.5 | .260-.450 | 1000 |
| -2011-* | .093 | .046 | 1.89±.05 | 1.75 | .050-.085 | 5000 |
| -2012-* | .125 | .062 | 1.89±.05 | 1.75 | .075-.115 | 5000 |
| -2013-* | .125 | .046 | 1.89±.08 | 1.75 | .050-.115 | 5000 |
| -2014-* | .187 | .093 | 1.88±.08 | 1.75 | .100-.165 | 2500 |
| -2015-* | .187 | .062 | 1.89±.05 | 1.75 | .050-.165 | 2500 |
| -2016-* | .250 | .125 | 1.85±.05 | 1.75 | .135-.235 | 2500 |
| -2017-* | .250 | .093 | 1.84±.08 | 1.75 | .100-.235 | 2500 |
| -2018-* | .375 | .187 | 1.84±.08 | 1.75 | .200-.355 | 1500 |

* The asterisk in the part number shall be replaced by color code designations(see 1.3 of MIL-S-85848(AS).

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TABLE III - PHYSICAL PROPERTIES 1/

| PROPERTY | REQUIREMENT | TEST PROCEDURE AND CONDITIONS |
|---|---|---|
| Dimensions | Pass | 4.6.2 |
| Fungus resistance | Rating of 1 or less | 4.6.1, ASTM G21 |
| Specific Gravity, Max | 2.0 | 4.6.1, ASTM D792 |
| Water absorption, %, max. | 0.5 | 4.6.1, ASTM D570, 24 hrs @ 23°C(73°F) |
| Color stability | Pass | 4.6.4, 24 hrs @ 149° ±1°C(300°±2°F) |
| Tensile strength, psi, min | 5000 | 4.6.5 ASTM D882, Speed D |
| Secant Modulus, psi, min | 80,000 | 4.6.6.1. ASTM D882, 2% strain |
| Heat shock | No cracks, flowing or dripping 2/ | 4.6.7, Type I: 177°± 1°C(330°±2°F) Type II: 300°±3°C 573°±7°F) |
| Heat resistance<br>Print performance | No cracking 2/<br>Pass | 4.6.8, Type I 150°± 2°C(302°±4°F) Type II 180°±2°C(356°±4°F for 168 hours. |
| Low temperature flexibility | No cracking 2/ | 4.6.9, Type I: -40° ±1°C(-40°±2°F) Type II: -55°±1°C (-67°±2°F) |
| Fluid resistance<br>Tensile strength, after psi,min<br>Print performance | <br>4000<br>Pass | 4.6.10 |
| Flammability | Pass | 4.6.11.3 |
| Vacuum outgassing | TML less than 1% CVCM less than 0.1% | 4.6.12 |
| Print performance | Pass | 4.6.13 |

1/ Unless otherwise specified, the stated requirement, test conditions, and procedures are for all types.
2/ The degree of bend shall be 90° up to 0.375 inch sleeve width or diameter. All others shall be bent through 45°.

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Restricted Shrinkage: Test method 4.5.3. Type I: 204°± 2°C (400°± 4°F); Type II: 175°±2°C (347±4°F) until the sleeve is snug around the wire.

Unrestricted shrinkage: Test method 4.5.2. 200°±2°C (392°±4°F) for 5 minutes.

Shelf life conditions: Supplier shall certify to storage at ambient storage conditions for two years followed by conformance to the construction details of either Table I or II.

Shelf life extension: Test method 4.6.13

Intended Use: Heat shrinkable flexible polyvinylidene fluoride identification sleeving is used as a snug fitting non-insulating identifier to mark wires, wire bundles, cables and cable harnesses.

Preparing Activity:
Navy AS
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