

DATE 18 December 1963

SHEET 1 OF 3

TMC SPECIFICATION NO. S -825

FRD
COMPILED

RC
CHECKED

TITLE:

APPROVED *[Signature]*

INSULATION, SLEEVING, ELECTRICAL
EXPANDED POLYTETRAFLUROETHYLENE
SPECIFICATIONS AND METHOD OF APPLICATION

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SHEET 3 OF 3

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III. METHOD OF APPLICATION

- A. Vendor will receive items to be covered, with terminals, if applicable. Items larger than 3/4 inch in diameter should be shipped in straight lengths. Smaller items should preferably be shipped straight.
- B. Vendor will then perform the following operations:
 - 1. Clean item to be covered, using an acid bath or other suitable means.
 - 2. Plate as per specifications if required.
 - 3. Clean item again.
 - 4. Slide tubing over item to be covered.
 - 5. Preheat oven.
 - 6. Heat shrink tubing.
 - 7. Inspect item for flaws and defects.
 - 8. Perform any required machining or bending.
 - 9. Inspect finished item for flaws, cracks, defects, etc.
 - 10. Return item to TMC, ready for assembly.

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SHEET 2 OF 3

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I. APPLICATIONS

Used as a protective covering for electrical wire bundles, metal tubing, electrical connectors, soldered joints, and specifically, to insulate high voltage RF tank coils.

II. SPECIFICATIONS

- A. Material: Copolymer of tetrafluoroethylene and hexafluoropropylene.
- B. Maximum Temperature: Five(5) hours at +450°F(232°C)
1000 hours at +350°F(177°C)
- C. Applicable Specifications:
MIL-I-3190, MIL-I-7444, MIL-STD-104,
ASTM-D-2116-62T, ASTM-D-1708-59T,
ASTM-D-638-61T, ASTM-D-792-60T,
ASTM-D-149-61.
- C. Finish: Homogeneous and free from flaws, defects, pinholes, bubbles, seams, cracks or inclusions.
- D. Longitudinal Increase: Less than 15%.
- E. Tensile Strength: Not less than 1,500 pounds per square inch after shrinking as per ASTM-D-638-61T(2inches per minute) and/or ASTM-D-1708-59T(Speed "C")
- F. Elongation: Not less than 200% after shrinking as per ASTM-D-638-61T and/or ASTM-D-1708-59T.
- G. Low Temperature Flexibility: Four(4) hours at -65°F(-54°C)
- H. Specific Gravity: Between 2.10 and 2.20 as per ASTM-D-792-60T.
- I. Dielectric Strength: Greater than 500 volts per mil as per ASTM-D-149-61.
- J. Burning Rate: Does not support combustion.
- K. Corrosion: Inert to metals.
- L. Abrasion Resistance: Four(4) to eight(8) feet of tape as per MIL-T-5348.
- M. Dielectric Constant: 2.2
- N. Dissipation Factor: 0.0002
- O. Coefficient of Friction: As low as 0.09
- P. Shrink Temperature: 621°F(328°C)
- Q. Color: Transparent light blue.
- R. Manufacturer's Reference: "Penntube II SMT"