# AEROSPACE
## MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York, N.Y. 10017

**AMS 3380A**

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# HOSE, POLYTETRAFLUOROETHYLENE
## TFE Fluorocarbon Resin
## Wire Braid Reinforced

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

2. TYPE: Flexible, smooth bore hose.

3. APPLICATION: Primarily for fluid lines operating at temperatures up to 450 F (232 C), and at pressures up to 1500 psi depending on size.

4. MATERIAL AND FABRICATION:

4.1 Hose: Shall consist of a polytetrafluoroethylene tube and a corrosion resistant steel wire braid reinforcement.

4.1.1 Tube: Shall be a seamless, continuous extrusion of virgin polytetrafluoroethylene resin. Base resin ø shall conform to ASTM D1457, Type III. Pigments may be included in the compound from which the tube is extruded.

4.1.2 Reinforcement: Shall be of 18 - 8 type corrosion resistant steel wire, uniform in quality and size, of sufficient strength to ensure that the hose will meet the requirements of this specification; it shall be well, evenly, and firmly braided, and shall be free from dirt, lumps, and irregularities of braid. Hose under 0.875 in. nominal ID shall have a single layer of braid; hose 0.875 in. and over nominal ID shall have two layers of braid.

5. TECHNICAL REQUIREMENTS: When ASTM methods are specified for determining conformance to the ø following requirements, tests shall be conducted in accordance with the issue of the ASTM method listed in the latest issue of AMS 2350.

5.1 Tube: The tube, before braiding or with reinforcement removed, shall conform to the following requirements; tests shall be performed in accordance with listed ASTM methods insofar as practicable. Tensile ø test specimens cut from hose from which braid has been removed shall be buffed to remove the braid impressions. Only the tests of 5.1.1 through 5.1.4 will be required for routine control.

| | | | |
|---|---|---|---|
| 5.1.1 | Tensile Strength at 77 F ± 2 (25 C ± 1.1), psi, min | | ASTM D412 except separation speed 2 in. per min. for sizes 0.500 in. ID and under. ASTM D1457 for larger sizes. |
| ø | Longitudinal, All sizes | 3000 | |
| | Transverse, Sizes over 0.500 in. ID | 2500 | |
| 5.1.2 | Elongation at 77 F ± 2 (25 C ± 1.1), %, min | 200 | As for tensile strength |
| ø 5.1.3 | Specific Gravity at 77 F ± 2 (25 C ± 1.1) | 2.125 - 2.155 | ASTM D792, Method A Add 2 drops of wetting agent to water. |

ø 5.1.4 Roll and Proof Pressure: Tube pigmented throughout the wall, and other types of tube when specified by purchaser, shall be subjected to the test of 5.1.4.1; all tubing shall be subjected to the test of 5.1.4.2.








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5.1.4.1 Ø Tube shall be passed, in a single pass, through 6 sets of metal rollers so that it is subjected to the following sequence of diametral flexings; rollers shall be arranged to prevent inadvertent rotation of the tube.

5.1.4.1.1 Roller angles specified in the following table assume that the tube is in a horizontal position and that pressure of the first set of rolls is exerted vertically; angles given for the final three sets of rolls may be taken as either clockwise or counterclockwise from the vertical diameter of the tube. A tolerance of ± 2 deg is allowed on each roller angle.

| Phase | Type of Action | Roller Angle, deg |
|---|---|---|
| A | Flattening | 0 |
| B | Flattening | 90 |
| C | Rounding | 0 |
| D | Flattening | 45 |
| E | Flattening | 135 |
| F | Rounding | 45 |

Ø 5.1.4.1.2 Roller gaps shall be not larger than specified below for each size.

| Size | Flattening Gap | Rounding Gap |
|---|---|---|
| 3 | 0.203 | 0.218 |
| 4 | 0.218 | 0.218 |
| 5 | 0.218 | 0.250 |
| 6 | 0.218 | 0.312 |
| 8 | 0.234 | 0.375 |
| 10 | 0.250 | 0.500 |
| 12 | 0.250 | 0.500 |
| 16Z | 0.250 | 0.750 |
| 20Z | 0.312 | 0.875 |
| 24Z | 0.375 | 1.250 |

5.1.4.2 Ø Tube shall not leak, burst, or show other evidence of malfunction when held at a pressure not lower than shown below for 2 min. using water or air as the test medium; the pressure used shall be not higher than the minimum burst pressure value of 5.1.5. When the test of 5.1.4.1 is required, tubing shall be subjected to that test before being proof pressure tested.

| Size | Nominal ID Inches | Proof Pressure psi |
|---|---|---|
| 3 | 0.125 | 390 |
| 4 | 0.188 | 360 |
| 5 | 0.250 | 290 |
| 6 | 0.313 | 230 |
| 8 | 0.406 | 180 |
| 10 | 0.500 | 170 |
| 12 | 0.625 | 140 |
| 16Z | 0.875 | 90 |
| 20Z | 1.125 | 65 |
| 24Z | 1.375 | 45 |

5.1.5 Burst Pressure: Tube shall not burst at any pressure lower than shown below when pressure is applied at a uniform rate so as to reach the specified minimum burst pressure in 5 - 10 sec and the rate of rise is maintained at the same rate until the tube bursts. Any suitable fluid may be used as the test medium. The tube shall be suitably clamped so as to prevent leakage but to permit axial movement of the tube during test.

| Size | Nominal ID Inches | Proof Pressure psi |
|---|---|---|
| 3 | 0.125 | 600 |
| 4 | 0.188 | 550 |
| 5 | 0.250 | 500 |
| 6 | 0.313 | 390 |
| 8 | 0.406 | 320 |
| 10 | 0.500 | 290 |
| 12 | 0.625 | 220 |
| 16Z | 0.875 | 140 |
| 20Z | 1.125 | 100 |
| 24Z | 1.375 | 60 |

5.1.6 Conductivity: Tube sizes 8 and smaller shall be capable of conducting a direct current of not less than 10 microamp and sizes 10 and larger a current of not less than 20 microamp with a test potential of 1000 v, when tested as follows:

5.1.6.1 A 14-in. length of tube, without braid, shall be washed on the ID with AMS 3160 or equivalent petroleum solvent and then with isopropyl alcohol and thoroughly dried at room temperature. The specimen shall be mounted for test as shown in Fig. 1 and 1000 v dc shall be applied between the upper and lower mercury electrodes. The current shall be measured with an instrument having sensitivity of at least 1 microampere. The temperature in the testing area shall be 60 - 90 F (15.6 - 32.2 C) and the relative humidity shall be less than 70%.

5.2 Hose: Specimens of suitable length not less than 9 in. long, cut from the complete hose, with suitable end fittings attached shall conform to the following requirements; tests shall be performed in accordance with listed ASTM methods insofar as practicable. Only the tests of 5.2.1, 5.2.3, and 5.2.6 will be required for routine control. Unless otherwise specified, any suitable fluid may be used as the pressure test medium.

5.2.1 Braid Flare: Specimens not over 12 in. in length shall be expanded at each end by forcing a plug of the diameter shown in the "Expansion Diameter A" column below into the ID of the hose for a distance of 3/16 inch. After expansion, the specimen shall be inserted through a ring having an ID as shown in the "Maximum Flare Diameter B" column with the bottom of the flare extending 1/2 in. above the top of the ring; from this position, the sample shall pass by its own weight through the ring. The sleeve normally used in making hose assemblies shall pass over the tube without interference from the braid. The test shall be made not more than 15 min. after cutting the specimen.

| Size | Nominal ID Inches | Expansion Diameter A Inches | Maximum Flare Diameter B Ring ID, Inches |
|---|---|---|---|
| 3 | 0.125 | 0.155 | 0.375 |
| 4 | 0.188 | 0.230 | 0.500 |
| 5 | 0.250 | 0.300 | 0.560 |
| 6 | 0.313 | 0.370 | 0.625 |
| 8 | 0.406 | 0.475 | 0.750 |
| 10 | 0.500 | 0.585 | 0.875 |
| 12 | 0.625 | 0.720 | 1.000 |
| 16Z | 0.875 | 0.995 | 1.400 |
| 20Z | 1.125 | 1.270 | 1.700 |
| 24Z | 1.375 | 1.545 | 1.950 |

5.2.2 Proof Pressure:

5.2.2.1 Ø Hose shall not leak, burst, or show other evidence of malfunction when held at a pressure not lower than shown below for not less than 30 sec and not more than 5 minutes. The pressure used shall be not higher than 50% of the minimum burst pressure of 5.2.6.

| Size | Nominal ID Inches | Proof Pressure psi |
|---|---|---|
| 3 | 0.125 | 3000 |
| 4 | 0.188 | 3000 |
| 5 | 0.250 | 3000 |
| 6 | 0.313 | 3000 |
| 8 | 0.406 | 3000 |
| 10 | 0.500 | 3000 |
| 12 | 0.625 | 2000 |
| 16Z | 0.875 | 2500 |
| 20Z | 1.125 | 2000 |
| 24Z | 1.375 | 2000 |

5.2.2.2 Ø Hose shall not leak when given a final check by completely immersing in water, to which may be added a wetting agent or corrosion inhibitor or both, applying air or nitrogen pressure not lower than the operating pressure of 5.2.3 but not higher than the proof pressure of 5.2.2.1, and holding at the selected pressure for not less than 30 sec. after stabilizing the pressure. If the test of 5.2.2.1 is conducted using air or nitrogen as the test fluid, this test is not required. This test shall be run only by the manufacturer of the hose.

5.2.3 Change In Length Under Pressure: Hose shall not change in length by more than +0.20 in. or -0.30 in. in 10 in. when subjected to the operating pressure shown below for not less than 5 minutes. Hose shall be held in a straight, unpressurized condition, a 10 in. gage length marked off on the hose and the hose pressurized. After 5 min. and while still pressurized, the gage length shall be remeasured and the change in length calculated.

| Size | Nominal ID Inches | Operating Pressure psi |
|---|---|---|
| 3 | 0.125 | 1500 |
| 4 | 0.188 | 1500 |
| 5 | 0.250 | 1500 |
| 6 | 0.313 | 1500 |
| 8 | 0.406 | 1500 |
| 10 | 0.500 | 1500 |
| 12 | 0.625 | 1000 |
| 16Z | 0.875 | 1250 |
| 20Z | 1.125 | 1000 |
| 24Z | 1.375 | 1000 |

5.2.4 Impulse Test: Hose shall not burst, leak, or show other evidence of malfunctioning, when subjected Ø to 100,000 impulse cycles at 400 F ± 10 (204.4 C ± 5.6) as follows:

5.2.4.1 Three hoses filled with MIL-H-8446 hydraulic fluid, or another fluid approved by purchaser, but under no pressure, and three hoses empty and open shall be aged in an air oven for 168 hr at Ø 400 F ± 10 (204.4 C ± 5.6) and then used for test. The oil aged and air aged hoses shall be subjected to proof pressure of 5.2.2 for not less than 5 min. before being installed in the impulse tester.

5.2.4.2 Hoses of size 12 and smaller shall be bent to the bend radius of 5.2.5.4 and assembled in the impulse tester in this position with both ends connected to rigid supports. Larger sizes shall be installed straight; one end may be left free.

5.2.4.3 Using MIL-H-8446 hydraulic fluid, or another fluid approved by purchaser, as the test fluid and with temperature of test fluid at 400 F ± 5 (204.4 C ± 2.8) and the ambient air at 400 F ± 10 (204.4 C ± 5.6), Ø hose shall be subjected to 100,000 cycles of impulse applied at frequency of 60 - 70 cpm. Electronic devices shall be used to determine and control the impulse pressures within the limits shown in Fig. 2. Peak pressure for sizes 16Z and smaller nominal ID shall be 125% of operating pressure of 5.2.3; peak pressure for the 20Z and 24Z sizes need not exceed 1000 psi.

5.2.5 Stress Degradation: Hose shall not leak, burst, or show other evidence of malfunction at any time during Ø the following sequence of tests:

5.2.5.1 Two hoses shall be filled with ASTM Service Fluid No. 101 and heated in an oven at 450 F ± 10 Ø (232.2 C ± 5.6), with internal pressure in the hose equal to the rated operating pressure of 5.2.3, for not less than 8 hours. Pressure shall be released and the hose removed from the oven.

5.2.5.2 Hose shall be drained, cooled to room temperature, and flushed with a quantity of ASTM Reference Fuel B equal to at least twice the volume of the test specimen, drained, and refilled with ASTM Ø Reference Fuel B (MIL-S-3136, Type III), and pressure equal to the rated operating pressure of 5.2.3 again applied and maintained for not less than 2 hours.

Ø 5.2.5.3 The procedures of 5.2.5.1 and 5.2.5.2 shall be repeated four times (a total of 5 complete cycles).

5.2.5.4 The hoses shall then be filled with ASTM Reference Fuel B (MIL-S-3136, Type III) and individually capped. While at room temperature, the hoses shall be bent around a mandrel having a radius equal Ø to the minimum bend radius below and straightened 20 times. Hoses shall be held by the fittings during bending. The procedures of 5.2.5.1 and 5.2.5.2 shall then be repeated for a sixth time.

| Size | Nominal ID Inches | Bend Radius Inches |
|---|---|---|
| 3 | 0.125 | 2 |
| 4 | 0.188 | 2 |
| 5 | 0.250 | 2 |
| 6 | 0.313 | 4 |
| 8 | 0.406 | 4-5/8 |
| 10 | 0.500 | 5-1/2 |
| 12 | 0.625 | 6-1/2 |
| 16Z | 0.875 | 7-3/8 |
| 20Z | 1.125 | 11 |
| 24Z | 1.375 | 14 |

5.2.5.5 Within 4 hr after the final 2 hr pressurization with fuel, the hoses shall be drained, flushed with trichlorethylene, and dried in an oven at 160 F ± 10 (71.1 C ± 5.6) for 1 hour. Hoses shall then, within 8 hr after completion of the drying process, be completely immersed in water containing no wetting agent, using the apparatus shown in Fig. 3. Pressure equal to the rated operating pressure Ø of 5.2.3 shall be applied for 15 min., using dry air or nitrogen as the pressurizing medium; during this period, the shield of the test apparatus shall be closed. The shield of the test apparatus shall then be opened and the pressure maintained for an additional 5 min. during which time the effused gas shall be collected in 1 in. increments over the entire length of the hose from cone seat to cone seat. The effusion rate for each individual inch of length of hose shall be not greater than the following:

| Size | Nominal ID Inches | Effusion Rate cc per in. per min. |
|---|---|---|
| 3 | 0.125 | 10 |
| 4 | 0.188 | 8 |
| 5 | 0.250 | 8 |
| 6 | 0.313 | 8 |
| 8 | 0.406 | 4 |
| 10 | 0.500 | 2 |
| 12 | 0.625 | 2 |
| 16Z | 0.875 | 2 |
| 20Z | 1.125 | 2 |
| 24Z | 1.375 | 2 |

5.2.5.6 After completion of the effusion rate test of 5.2.5.5, hoses shall be filled with ASTM Service Fluid No. 101 and placed in a cold chamber for 8 hr at -67 F ± 2 (-55 C ± 1.1), at the end of this period and while still maintained at -67 F ± 2 (-55 C ± 1.1), pressure equal to the rated operating pressure of 5.2.3 shall be applied and held for not less than 5 min. and then released. The pressurization, holding, and releasing of pressure shall be repeated for a total of 10 cycles, allowing not less than 5 min. between each release of pressure and repressurization. After completion of these cycles, ASTM Service Fluid No. 101 at a temperature of 450 F ± 10 (232.2 C ± 5.6) shall be circulated through the hoses. Within 15 sec after introduction of the hot fluid, the pressure shall be increased to the proof pressure of 5.2.2 and maintained for not less than 2 minutes.

5.2.6 Burst Pressure (Room Temperature): Hose shall not burst, leak, or show evidence of malfunction at any pressure lower than the values specified below when pressure is applied at a rate of increase of 15,000 - 25,000 psi per min., with hose extended straight and the free end unrestrained.

| Size | Nominal ID Inches | Burst Pressure psi |
|---|---|---|
| 3 | 0.125 | 12,000 |
| 4 | 0.188 | 12,000 |
| 5 | 0.250 | 10,000 |
| 6 | 0.313 | 9,000 |
| 8 | 0.406 | 8,000 |
| 10 | 0.500 | 7,000 |
| 12 | 0.625 | 5,000 |
| 16Z | 0.875 | 5,000 |
| 20Z | 1.125 | 4,000 |
| 24Z | 1.375 | 4,000 |

5.2.7 Burst Pressure (High Temperature): Hose shall not burst, leak, or show other evidence of malfunction at any pressure lower than the values specified below when tested as follows: Hose shall be filled with a suitable test fluid, such as ASTM Service Fluid No. 101, at 450 F ± 10 (232.2 C ± 5.6) and maintained in ambient atmosphere at that temperature for 1 hour. At the end of this period and while still maintained at 450 F ± 10 (232.2 C ± 5.6), pressure shall be applied up to the rated operating pressure of 5.2.3 and held for not less than 5 min.; pressure shall then be raised at a rate of increase of 15,000 - 25,000 psi per min. until failure.

| Size | Nominal ID Inches | Burst Pressure psi |
|---|---|---|
| 3 | 0.125 | 7500 |
| 4 | 0.188 | 7000 |
| 5 | 0.250 | 6500 |
| 6 | 0.313 | 6500 |
| 8 | 0.406 | 6000 |
| 10 | 0.500 | 5500 |
| 12 | 0.625 | 3500 |
| 16Z | 0.875 | 3500 |
| 20Z | 1.125 | 3000 |
| 24Z | 1.375 | 3000 |

Ø 5.2.8 Leakage: Hose shall not leak when subjected to the following test:

5.2.8.1 Two hoses shall be filled with MIL-H-5606 hydraulic fluid at room temperature and pressurized to 25 psi for not less than 5 minutes. The pressure shall be raised to 70% of the minimum burst pressure of 5.2.6, held for not less than 5 min., and completely released. After 5 min. without pressurization, Ø the pressure shall again be raised to 70% of the minimum burst pressure of 5.2.6, held for 5 min., and released. Leakage, evidenced by any spot of test fluid on a white paper towel wrapped tightly around the hose so that the towel is in contact with the braid, shall be cause for rejection.

5.2.9 Fuel Resistance: Hose shall not leak or show other evidence of malfunction when subjected to the Ø following test:

5.2.9.1 Two hoses shall be filled with AMS 3160 petroleum solvent or with jet fuel and placed in an oven at 260 F ± 10 (126.7 C ± 5.6) for 48 hr with pressure equal to the rated operating pressure of 5.2.3 applied. After the 48 hr heating, the pressure shall be released and the hoses drained and allowed to cool at room temperature for 20 minutes. Hoses shall then be filled with ASTM Reference Fuel B (MIL-S-3136, Type III) and pressure equal to the rated operating pressure of 5.2.3 applied for 2 hours at room temperature.

5.2.10 Flexibility: Three hoses, one from the stress degradation test of 5.2.5, one from the fuel resistance test of 5.2.9, and one new, shall be used for this test. Hose filled with ASTM Reference Fuel A (MIL-S-3136, Type I) and held at -67 F ± 2 (-55 C ± 1.1) for not less than 24 hr shall withstand, while still at -67 F ± 2 (-55 C ± 1.1), being bent around the radius given in 5.2.5.4, straightened, bent equally in the opposite direction, and restraightened 5 times, allowing approximately 4 sec per cycle, without cracking, breaking, or splitting.

5.2.11 Vacuum: The same hoses used for the test of 5.2.10 shall then be subjected to the following tests Ø without collapsing to the extent that a ball of the specified diameter will fail to pass through the hose and without showing other permanent damage.

5.2.11.1 Hoses shall be drained and placed in an oven at 450 F ± 10 (232.2 C ± 5.6) with the hoses bent to the minimum bend radius of 5.2.5.4. A negative pressure as shown below shall be applied and maintained for 4 hours. At the end of the 4 hr period, the hoses shall be removed from the oven with the Ø negative pressure maintained. When the hoses have cooled to room temperature, the pressure shall be restored to atmospheric and the hoses inspected for collapse and other defects. One end of each hose shall then be cut off within 1 in. of the end fitting and a ball of the diameter specified below shall be rolled through the hose. Reduction of the ID below that at which the ball will roll the length of the hose or other damage to the hose shall be cause for rejection.

| Size | Nominal ID Inches | Ball Diameter Inches | Negative Pressure In. of Hg |
|---|---|---|---|
| 3 | 0.125 | 0.076 - 0.080 | 28 |
| 4 | 0.188 | 0.125 - 0.132 | 28 |
| 5 | 0.250 | 0.187 - 0.193 | 28 |
| 6 | 0.313 | 0.250 - 0.255 | 28 |
| 8 | 0.406 | 0.332 - 0.337 | 28 |
| 10 | 0.500 | 0.421 - 0.426 | 28 |
| 12 | 0.625 | 0.531 - 0.538 | 20 |
| 16Z | 0.875 | 0.770 - 0.778 | 14 |
| 20Z | 1.125 | 0.996 - 1.004 | 10 |
| 24Z | 1.375 | 1.246 - 1.252 | 8 |

5.2.12 Volumetric Expansion: Shall be not greater than the following when determined in accordance with ASTM D571 at a pressure of 1000 psi.

| Size | Nominal ID Inches | Volumetric Expansion cc per in. free length |
|---|---|---|
| 3 | 0.125 | 0.028 |
| 4 | 0.188 | 0.028 |
| 5 | 0.250 | 0.040 |

5.2.13 Pneumatic Effusion: Two hoses, sealed in an air collecting device similar to that shown in Fig. 4 with the water displacement taking place outside the temperature chamber, shall be subjected to the Ø rated operating pressure of 5.2.3 for 24 hr at each of the following temperatures and in the order indicated: room temperature, -65 F ± 2 (-53.9 C ± 1.1), +275 F ± 5 (+135 C ± 2.8), and 400 F ± 10 (204.4 C ± 5.6). The average rate of effusion through the hose and two fittings, measured over the last 8 hr of testing at each temperature, shall be not greater than the following:

| Size | Nominal ID Inches | Effusion Rate, cc per hr per ft of Length At Temperature Indicated | | | |
|---|---|---|---|---|---|
| | | Room | -65F (-53.9 C) | +275 F (+135 C) | +400 F (+204.4 C) |
| 3 | 0.125 | 8.0 | 3.0 | 100 | 250 |
| 4 | 0.188 | 8.0 | 3.0 | 100 | 250 |
| 5 | 0.250 | 10.0 | 3.0 | 110 | 275 |
| 6 | 0.313 | 10.0 | 3.0 | 125 | 300 |
| 8 | 0.406 | 10.0 | 3.0 | 125 | 350 |
| 10 | 0.500 | 10.0 | 3.0 | 140 | 400 |
| 12 | 0.625 | 12.0 | 3.0 | 140 | 450 |
| 16Z | 0.875 | 16.0 | 4.0 | 180 | 600 |
| 20Z | 1.125 | 16.0 | 4.0 | 350 | 700 |
| 24Z | 1.375 | 16.0 | 4.0 | 400 | 900 |

5.2.14 Pneumatic Surge Test: The two hoses from the test of 5.2.13 shall then be assembled in the apparatus depicted in Fig. 5 and subjected to the rated operating pressure of 5.2.3 for 25 min. at room temperature. After the 25 min. pressurization, the exhaust valve shall be opened to permit rapid discharge Ø of the compressed gas. After 5 min., the valve shall be closed and the pressure recycled. This sequence of 25 min. at operating pressure and 5 min. at atmospheric pressure shall be repeated for a total of 16 times. The hoses shall then be subjected to the rated proof pressure of 5.2.2 for not less than 2 minutes. Any evidence of leakage at the end fittings shall constitute failure.

6. QUALITY: The product shall be uniform in quality and condition, clean, smooth and free from foreign materials and from imperfections detrimental to fabrication appearance, or performance of parts.

6.1 Broken or missing reinforcement wires and loops of wire extending above the surface a distance greater than one wire diameter will be causes for rejection; crossed over reinforcing wires will not be cause for rejection.

6.2 The product shall have a smooth bore and shall be free from pitting or projections on the inner surface of the tube.

7. SIZES AND TOLERANCES: Unless otherwise specified, hose shall be furnished in the following diameters and to the dimensions shown:

| Size | Nominal ID Inches | ID Tolerance Inch | | Tube Wall Thickness Inch | OD Over Braid Inches |
|---|---|---|---|---|---|
| | | plus | minus | | |
| 3 | 0.125 | 0.025 | 0.000 | 0.035 - 0.047 | 0.237 - 0.268 |
| 4 | 0.188 | 0.015 | 0.015 | 0.035 - 0.047 | 0.304 - 0.343 |
| 5 | 0.250 | 0.015 | 0.015 | 0.035 - 0.047 | 0.367 - 0.406 |
| 6 | 0.313 | 0.015 | 0.015 | 0.035 - 0.047 | 0.430 - 0.469 |
| 8 | 0.406 | 0.015 | 0.015 | 0.038 - 0.050 | 0.546 - 0.585 |
| 10 | 0.500 | 0.015 | 0.015 | 0.042 - 0.054 | 0.641 - 0.687 |
| 12 | 0.625 | 0.020 | 0.010 | 0.042 - 0.054 | 0.766 - 0.812 |
| 16Z | 0.875 | 0.031 | 0.024 | 0.042 - 0.054 | 1.078 - 1.140 |
| 20Z | 1.125 | 0.031 | 0.024 | 0.045 - 0.057 | 1.328 - 1.390 |
| 24Z | 1.375 | 0.031 | 0.031 | 0.065 - 0.077 | 1.633 - 1.711 |

8. REPORTS:

8.1 Unless otherwise specified, the vendor of hose shall furnish with each shipment three copies of a report showing the results of tests to determine conformance to the routine control requirements specified and stating that the hose is representative of material which has been qualified to all requirements of this specification. This report shall include the purchase order number, material specification number, vendor's material designation, size, and quantity.

8.2 In addition to the reports of 8.1, the vendor of hose shall furnish three copies of a cumulative report showing the results of tests made on samples selected at random from each 20,000 ft of hose of each size, not necessarily manufactured during one continuous run, to determine conformance to the requirements of 5.1.6, 5.2.4 (unaged only), and 5.2.5. This report shall be furnished for each size concurrently with the report of 8.1 covering the first shipment of that size following submission of the previous cumulative report.

8.3 Unless otherwise specified, the vendor of assemblies incorporating hose to this specification shall furnish with each shipment three copies of a report showing the purchase order number, material specification numbers for all items of the assembly, contractor or other direct supplier of hose, part number, and quantity. When hose for making assemblies is produced or purchased by the assembly vendor, that vendor shall inspect each lot of hose to determine conformance to the requirements of this specification, and shall include in the report a statement that the hose conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.

9. IDENTIFICATION: Hose shall be identified as agreed upon by purchaser and vendor.

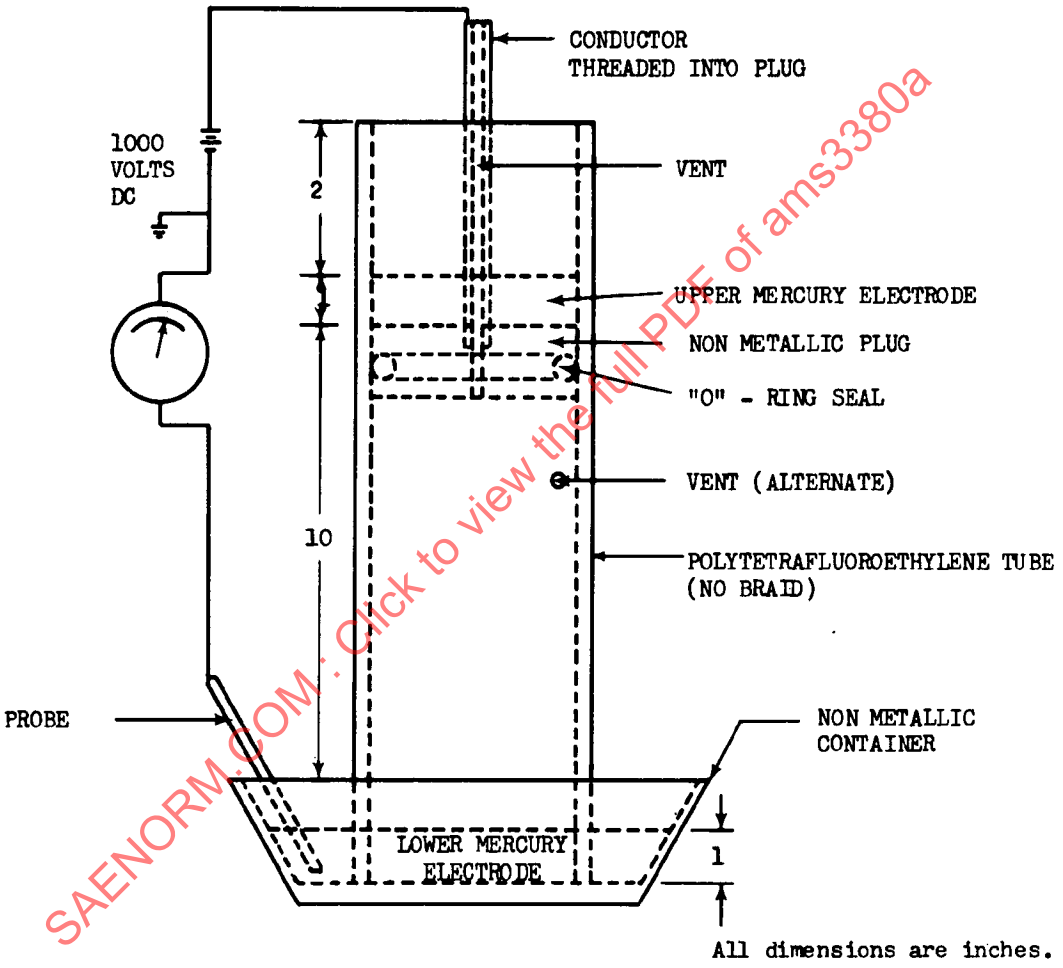
10. APPROVAL:

10.1 To assure adequate performance characteristics, hose shall be approved by purchaser before hose for production use is supplied, unless such approval be waived. Results of tests on production hose shall be essentially equivalent to those on the approved sample.

10.2 Vendor shall use the same compound, materials, and manufacturing processes for production hose as for approved sample hose. If necessary to make any change in compound, materials, or processing ø which could unfavorably affect any characteristics of the hose, vendor shall obtain written permission from purchaser prior to incorporating such change.

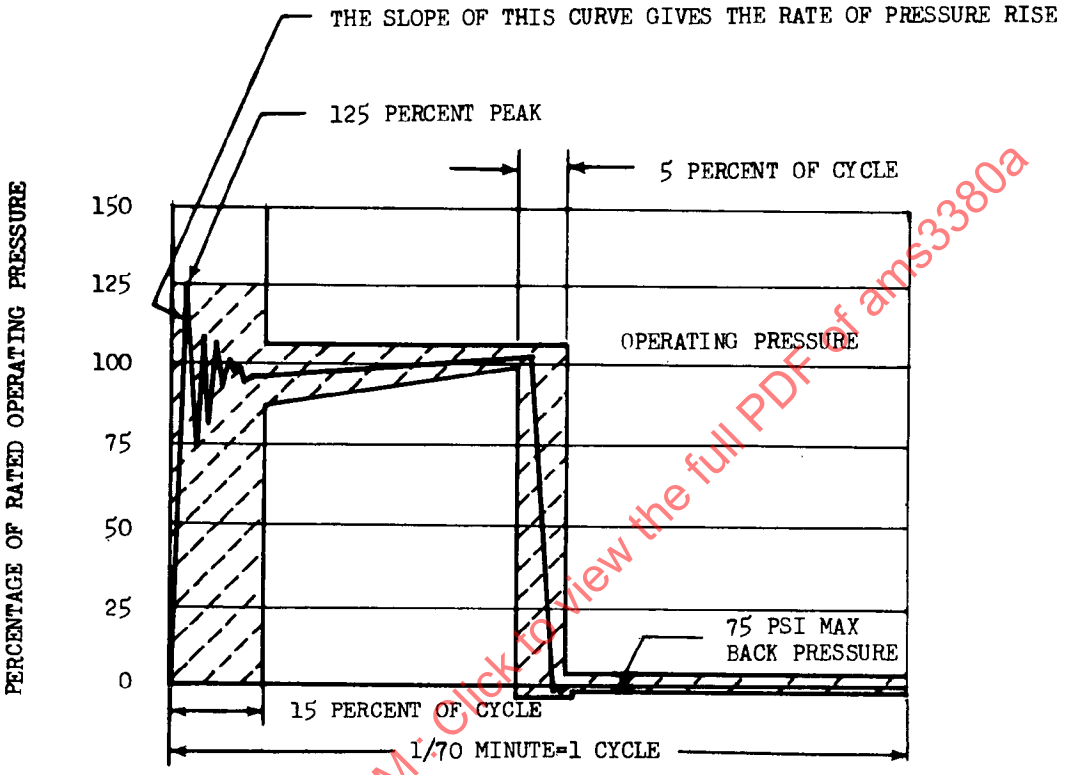
11. REJECTIONS: Material not conforming to this specification or to authorized modifications will be subject to rejection.

NOTE. SIMILAR SPECIFICATIONS: MIL-H-27267 is listed for information only and shall not be construed as an acceptable alternate unless all requirements of this AMS are met.




ELECTROSTATIC CONDUCTIVITY TEST DIAGRAM

FIGURE 1






THIS CURVE SHOWN ABOVE IS THE APPROXIMATE PRESSURE-TIME CYCLE DETERMINED TO BE OF PROPER SEVERITY FOR IMPULSE TESTING OF HOSE. ALTHOUGH IT IS MANDATORY ONLY THAT PRESSURE PEAK RISES TO 125 PERCENT OF THE OPERATING PRESSURE AT SOME POINT PRIOR TO LEVELING OFF AT RATED PRESSURE, IT IS CONSIDERED HIGHLY DESIRABLE THAT THE PRESSURE-TIME CURVE BE CONFINED TO THE SHADED AREA INDICATED. ONE VERY DESIRABLE BENEFIT TO BE GAINED IN THIS MANNER IS THAT RESULTS OF TESTS PERFORMED ON DIFFERENT TEST MACHINED WILL BE MORE NEARLY COMPARABLE.

DYNAMIC PRESSURE IMPULSES

Figure 2