

CHANGE NOTICES ARE NOT CUMULATIVE
AND SHALL BE RETAINED UNTIL SUCH
TIME AS THE ENTIRE STANDARD IS
REVISED. RETAIN CHANGE NOTICES 1
AND 2.

FED. TEST METHOD STD. NO. 228
April 14, 1967
CHANGE NOTICE 3
23 July 1993

FEDERAL TEST METHOD STANDARD

CABLE AND WIRE, INSULATED;
METHODS OF TESTING

The following changes which form a part of FED. TEST METHOD STD. NO. 228,
dated April 14, 1967, are approved by the Commissioner, Federal Supply
Services, General Services Administration, for use by all federal agencies.

REMOVE: Standard Test Method 7021, of January 4, 1984.

ADD: REVISED Standard Test Method 7021.1.

MILITARY INTERESTS:

Custodians:

Army - CR
Navy - AS
Air Force - 85

Review activities:

Army - AR, AT
Navy - EC,
Air Force - 15, 19, 80, 99
DLA - IS, ES

User activities:

Navy - YD, MC

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS

Preparing activity:

Army - CR

Agent:

DLA - ES

(Project 6145-2043)

RETAIN THIS CHANGE NOTICE AND INSERT BEFORE THE TABLE OF CONTENTS OF THIS STANDARD

FSC 6145

METHOD 7021.1
CHANGE NOTICE 3
23 July 1993

FLUID IMMERSION

1. SCOPE

1.1 This method is intended for use in determining the ability of cable to resist degradation when exposed to specific fluids they may come in contact with during their service life.

2. SPECIMEN

2.1 An individual sample for each applicable fluid 18-inch minimum in length, shall be stripped to the bare conductor on either end for one inch.

3. APPARATUS

3.1 The apparatus shall be as follows

a. A vessel to contain the various fluids in sufficient quantity to completely immerse 2/3 of the wire or cable

b. An air circulating oven capable of maintaining temperature within $\pm 3^{\circ}\text{C}$ of required setting. The maximum test temperature is 175°C (347°F).

c. Table stove or hot plates.

d. Immersion thermometer covering a range of 0°C to $+150^{\circ}\text{C}$ (32°F to 302°F).

e. Unless otherwise specified, test fluids shall be in accordance with table I.

4. PROCEDURE

4.1 Before proceeding with the fluid immersion, the sample is to be weighted. The applicable specified test fluid shall be stabilized at the temperature specified in table I. One sample per each fluid shall be immersed to a minimum of 2/3 of the wire or cable. Immersion and cycling shall be as specified in table I. Following the last immersion, the sample shall be dried.

METHOD 7021.1
CHANGE NOTICE 3

TABLE I. Test fluids and cycles.

Fluid	Test cycles			Number of 1/ cycles
	Time	Immerse	Drain	
(a) MIL-H-5606 (hydraulic fluid) (b) Hydraulic fluid 2/ (c) MIL-T-5624 (grade JP-5) (d) MIL-L-7808 (lubricating oil) (e) MIL-L-23699 (lubricating oil) (f) MIL-A-8243 (defrosting fluid) (g) MIL-L-25769 (diluted for cleaning)	5 minutes	$\pm 3^{\circ}\text{C}$ 85°C 85°C 25°C 125°C 120°C 65°C 65°C	1 hour minimum in air at room temperature	7
(h) Kerosene, 50 percent aircraft lubricating oil, 50 percent (ASTM Standard D3669 and MIL-L-6082, grade 1100, respectively).	16 hours	(48° to 50°C	3 hours	1
(i) MIL-G-3056, type I (gasoline) (j) Isopropyl alcohol per TT-I-735, grade A or B, mixed one part by volume with three parts by volume of mineral spirits per TT-T-291, type 1 or P-D-680, type I	5 minutes	25°C	24 hours in free air	5
(k) (Specification TT-S-735) Isopropyl alcohol	4 hours		2 hours	1
(l) (Specification O-C-265)	4 hours		2 hours	1
(m) MIL-C-43616, cleaning compound, aircraft surface, (diluted for cleaning)	1 hour	50°C		10

1/ Transition time between steady-state conditions shall be 2 minutes, maximum. Steady-state conditions shall be ± 1 minute unless otherwise noted. The wire shall be drained by gravity during drainage portions of cycle.

2/ M2-V chevron oil ST0145LB0001 or equivalent.

5. RESULTS

5.1 Any change of weight, delamination, softening, swelling (finish diameter of material, reduction of electrical properties e.g., dielectric withstanding voltage and scrape abrasion), and discoloration of material finishes and markings shall be recorded.