

INCH-POUND

MIL-STD-202-104

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SUPERSEDING

MIL-STD-202G

w/CHANGE 2 (IN PART)

28 June 2013

(see 6.1)

**DEPARTMENT OF DEFENSE
TEST METHOD STANDARD
METHOD 104, IMMERSION**



AMSC N/A

FSC 59GP



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FOREWORD

1. This standard is approved for use by all Departments and Agencies of the Department of Defense.
2. This entire standard has been revised. This revision has resulted in many changes to the format, but the most significant one is the splitting the document into test methods. See MIL-STD-202 for the change summary.
3. Comments, suggestions, or questions on this document should be emailed to std202@dla.mil or addressed to: Commander, Defense Logistics Agency, DLA Land and Maritime, ATTN: VAT, P.O. Box 3990, Columbus, OH 43218-3990. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <https://assist.dla.mil>.

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METHOD 104
IMMERSION

1. SCOPE

1.1 Purpose. This test is performed to determine the effectiveness of the seal of component parts. The immersion of the part under evaluation into liquid at widely different temperatures subjects it to thermal and mechanical stresses which will readily detect a defective terminal assembly, or a partially closed seam or molded enclosure. Defects of these types can result from faulty construction or from mechanical damage such as might be produced during physical or environmental tests. The immersion test is generally performed immediately following such tests because it will tend to aggravate any incipient defects in seals, seams, and bushings which might otherwise escape notice. This test is essentially a laboratory test condition, and the procedure is intended only as a measurement of the effectiveness of the seal following this test. The choice of fresh or salt water as a test liquid is dependent on the nature of the component part under test. When electrical measurements are made after immersion cycling to obtain evidence of leakage through seals, the use of a salt solution instead of fresh water will facilitate detection of moisture penetration. This test provides a simple and ready means of detection of the migration of liquids. Effects noted can include lowered insulation resistance, corrosion of internal parts, and appearance of salt crystals. The test described is not intended as a thermal shock or corrosion test, although it may incidentally reveal inadequacies in these respects.

2. APPLICABLE DOCUMENTS

This section not applicable to this standard.

3. DEFINITIONS

This section not applicable to this standard.

4. GENERAL REQUIREMENTS

4.1. Procedure. This test consists of successive cycles of immersions, each cycle consisting of immersion in a hot bath of fresh (tap) water at a temperature of 65° +5°, -0 °C (149° +9°, -0 °F) followed by immersion in a cold bath. The number of cycles, duration of each immersion, and the nature and temperature of the cold bath shall be as indicated in the applicable test condition listed in table 1, as specified.

TABLE 1 Immersion test conditions.

Test condition	Number of cycles	Duration of each immersion	Immersion bath (cold)	Temperature of cold bath
		<u>Minutes</u>		<u>°C</u>
A	2	15	Fresh (tap) water	25 (+10,-5)
B	2	15	Saturated solution of sodium chloride and water	25 (+10,-5)
C	5	60	Saturated solution of sodium chloride and water	0 ±3

The transfer of specimens from one bath to another shall be accomplished as rapidly as practicable. After completion of the final cycle, specimens shall be thoroughly and quickly washed and all surfaces wiped or air-blasted clean and dry.

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4.2 Measurements. Unless otherwise specified, measurements shall be made at least 4 hours, but not more than 24 hours, after completion of the final cycle. Measurements shall be made as specified.

5. DETAILED REQUIREMENTS

5.1 Summary. The following details are to be specified in the individual specification:

- a. Test condition letter (see 4.1).
- b. Time after final cycle allowed for measurements, if other than that specified (see 4.2).
- c. Measurements after final cycle (see 4.2).

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Supersession data. The main body and 38 parts of this revision of MIL-STD-202 replace superseded MIL-STD-202.

Custodians:

Army - CR
Navy - EC
Air Force - 85
DLA - CC

Preparing activity:
DLA – CC

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Review activities:

Army - AR, AT, AV, CR4, MI, SM, TE
Navy - AS, OS, SH
Air Force - 19, 99
NSA - NS

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