JIS

JAPANESE INDUSTRIAL STANDARD

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JIS C 0038 : 1997

(IEC 60068-2-50 : 1983)

Basic environmental testing procedures Part 2 : Tests Tests Z/AFc : Combined cold/vibration (sinusoidal) tests for both heat-dissipating and non-heat-dissipating specimens

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law:

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In the event of any doubts arising as to the contents,
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Basic environmental testing procedures Part 2: Tests — Tests Z/AFc: Combined cold/vibration (sinusoidal) tests for both heat-dissipating and non-heat-dissipating specimens

Introduction

This Japanese Industrial Standard has been prepared based on the 1st edition issued in 1983 of **IEC 60068-2-50** [Basic environmental testing procedures - Part 2: Tests, Tests Z/AFc: Combined cold/vibration (sinusoidal) tests for both heat-dissipating and non-heat-dissipating specimens] without changing the technical contents and the structural style of the original standard.

Furthermore, the matters that are indicated by underline (dotted line) do not appear in the original international standard. The numbers of IEC standards are indicated by the new numbering system established since January 1, 1997. Those standards established before that date are also renumbered by adding 60000 to the previous number. This is merely a change of number, without any change of contents.

i) General

This standard deals with combined cold/vibration (sinusoidal) tests applicable both to heat-dissipating and non-heat-dissipating specimens. It is basically a combination of Test Fc: Vibration (Sinusoidal) (**JIS C 0040**-1995) and Tests A: Cold (**JIS C 0020**-1995).

The procedures are limited to the case of specimens which reach temperature stability during exposure to low temperature conditions.

Note. — The procedure for heat-dissipating specimens does not include a switch-on with the equipment stabilized at the test temperature. In cases where a demonstration of a cold switch-on in combination with vibration is required, the procedure laid down for non-heat-dissipating specimens may have application by specifying a functional check or series of functional checks at intervals throughout the conditioning phase.

ii) Vibration

The vibration test involved is basically equivalent to **JIS C 0040.** One or more of the endurance procedures of **JIS C 0040** may be applied. A vibration response investigation after endurance conditioning is not included in this combined test.

iii) Temperature

Temperature conditions for testing heat-dissipating specimens are intended to subject the specimen to thermal stresses in a manner equivalent to that in free air conditions.

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Because of the difficulties in simulating the effect of free air conditions in a test chamber combined with a vibrator, forced air circulation is normally used for this test. Monitoring is made on the hottest surface point of the specimen. The monitoring point and the monitoring temperature are determined by subjecting the specimen to free air conditions with specified ambient temperature before conducting the test.

iv) Normative references and related standards

Among the standards listed below, **JIS C 0020** and **JIC 0040** contain provisions which, through reference in this text, constitute provisions of this Standard. Among these normative references, validity is limited as follows. For the dated references, only the editions with that year of validity (or year of publication) constitute provisions of this Standard. Subsequent revisions or amendments of any of these publications do not apply. For undated references, only the most recent editions (including amendments) apply.

JIS C 0010, **JIS C 0025**, **JIS C 0047** and **JIS C 0095** are the related standards.

JIS C 0010-1993 Environmental testing Part 1: General and guidance
Note **JIS C 0010**-1993 is identical to **IEC 60068-1**: 1988 (Environmental testing - Part 1: General and guidance) and Amendment 1 (1992).

JIS C 0020-1995 Environmental testing procedures Part 2: Tests, Tests A: Cold
Note **JIS C 0020**-1995 is identical to **IEC 60068-2-1**: 1990 (Environmental testing - Part 2: Tests, Tests A: Cold and Amendment 1 (1993) and Amendment 2 (1994).

JIS C 0025-1988 Basic environmental testing procedure Part 2: Tests, Test N: Change of temperature
Note **JIS C 0025**-1988 is equivalent to **IEC 60068-2-14**: 1984 Basic environmental testing procedures - Part 2: tests, Test N: Change of temperature and Amendment 1 (1986).

JIS C 0040-1995 Basic environmental testing procedures Part 2: Tests, Test Fc and guidance: Vibration (sinusoidal)
Note **JIS C 0040**-1995 is identical to **IEC 60068-2-6**: 1982 Basic environmental testing procedures - Part 2: Tests, Test Fc and guidance: Vibration (sinusoidal) (Fifth edition) and Amendment 1 (1983) and Amendment 2 (1985).
Informative references The 6th edition of **IEC 60068-2-6** was published in 1995.

JIS C 0047-1995 Basic environmental testing procedures Part 2: Tests Mounting of components, equipment and other articles for dynamic tests including shock (Ea), bump (Eb), vibration (Fc and Fd) and steady-state acceleration (Ga) and guidance
Note **JIS C 0047**-1995 is identical to **IEC 60068-2-47**: 1982 Basic environmental testing procedures - Part 2: Tests Mounting of components, equipment and other articles for dynamic tests including shock (Ea), bump (Eb), vibration (Fc and Fd) and steady-state acceleration (Ga) and guidance.

JIS C 0095-1995 Background information, Section One, Cold and dry heat tests
Note **JIS C 0095**-1995 is identical to **IEC 60068-3-1**: 1974 Basic environmental testing procedures - Part 3: Background information-Section one: Cold and dry heat tests and **IEC 60068-3-1A**: 1978, First supplement.

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