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(IEC 60695-2-10 : 2000)

**Fire hazard testing—Glow-wire
apparatus and common test
procedure**

ICS 13.220.40; 29.020

Reference number : JIS C 60695-2-10 : 2004 (E)

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. Consequently **JIS C 0072 : 1997** is replaced with this Standard.

This revision has been made based on **IEC 60695-2-10 : 2000** *Fire hazard testing—Part 2-10 : Glowing/hot-wire based test methods—Glow-wire apparatus and common test procedure* for the purposes of making it easier to compare this Standard with International Standard; to prepare Japanese Industrial Standard conforming with International Standard; and to propose a draft of an International Standard which is based on Japanese Industrial Standard.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

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Fire hazard testing—Glow-wire apparatus and common test procedure

Introduction This Japanese Industrial Standard has been prepared based on the first edition of **IEC 60695-2-10 : 2000** *Fire hazard testing—Part 2-10 : Glowing/hot-wire based test methods—Glow-wire apparatus and common test procedure* without modifying the technical contents.

1 Scope This Standard specifies the glow-wire apparatus and common test procedure to simulate the effect of thermal stresses which may be produced by heat sources such as glowing elements or overloaded resistors, for short periods, in order to assess the fire hazard by a simulation technique.

The test described in this Standard is applicable to electrotechnical equipment, its subassemblies and components, and may also be applied to solid electrical insulating materials or other solid combustible materials.

One of the responsibilities of a technical committee is, wherever applicable, to make use of basic safety publications in the preparation of its publications.

NOTE : The International Standard corresponding to this Standard is as follows.

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and **JIS** are **IDT** (identical), **MOD** (modified), and **NEQ** (not equivalent) according to **ISO/IEC Guide 21**.

IEC 60695-2-10 : 2000 *Fire hazard testing—Part 2-10 : Glowing/hot-wire based test methods—Glow-wire apparatus and common test procedure* (**IDT**)

2 Normative references The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. If the indication of the year of coming into effect or the year of publication is given to these referred standards, only the edition of the indicated year constitutes the provision of this Standard but the revision and amendment made thereafter do not apply. The normative references without the indication of the year of coming into effect apply only to the most recent edition (including amendments).

JIS C 0073 : 2004 *Fire hazard testing—Glow-wire flammability test method for end-products*

NOTE : **IEC 60695-2-11 : 2000** *Fire hazard testing—Part 2-11 : Glowing/hot-wire based test methods—Glow-wire flammability test method for end-products* is identical with the said standard.

JIS C 0074 : 2004 *Fire hazard testing—Glow-wire flammability test method for materials*

NOTE : **IEC 60695-2-12 : 2000** *Fire hazard testing—Part 2-12 : Glowing/hot-wire based test methods—Glow-wire flammability test method for materials* is identical with the said standard.

JIS C 0075 : 2004 *Fire hazard testing—Glow-wire ignitability test method for materials*

NOTE : **IEC 60695-2-13** : 2000 *Fire hazard testing—Part 2-13 : Glowing/hot-wire based test methods—Glow-wire ignitability test method for materials* is identical with the said standard.

JIS C 1602 : 1995 *Thermocouples*

NOTE : **IEC 60584-1** : 1977 *Thermocouples—Part 1 : Reference tables* and **IEC 60584-2** : 1982 *Thermocouples—Part 2 : Tolerances* are equivalent to the said standard.

JIS P 0001 *Paper, board and pulp—Vocabulary*

NOTE : **ISO 4046** : 1978 *Paper, board, pulp and related terms—Vocabulary* is equivalent to the said standard.

ISO/IEC 13943 : 2000 *Fire safety—Vocabulary*

3 Definitions For the purposes of this Standard, the definitions given in **ISO/IEC 13943**, as well as the following definition, apply.

3.1 test temperature and temperature of the glow-wire

temperature to which the tip of the glow-wire is heated and stabilized prior to any contact with the test specimen

4 Outline of the test apparatus and common test procedure This Standard specifies the glow-wire apparatus and common test procedure as a fire test using a non-flame ignition source.

The glow-wire is a specified loop of resistance wire, which is electrically heated to a specified temperature. The tip of the glow-wire is brought into contact with a test specimen for a specific period of time and a range of observations and measurements made, dependant upon the particular test procedure.

A detailed description of each test procedure is given in **JIS C 0073**, **JIS C 0074** and **JIS C 0075**.

5 Description of the test apparatus

5.1 Glow-wire The glow-wire is made from nickel/chromium (80/20) wire, with an overall nominal diameter of 4 mm. The wire is formed into a loop as detailed in attached figure 1.

The glow-wire is heated by a simple electric circuit as shown in attached figure 2. There shall be no feedback mechanism or circuit to maintain the temperature.

Due to the high currents involved, it is essential that the electrical connections for the glow-wire are capable of carrying the current without affecting the performance or long-term stability of the circuit.

NOTE 1 The typical current necessary for heating the tip to a temperature of 960 °C is between 120 A and 150 A.