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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 as the result of proposal for revision of Japanese Industrial Standard submitted by Reliability Center for Electronic Components of Japan (RCJ)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently **JIS C 60695-5-1 : 1996** is replaced with this Standard.

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Fire hazard testing—Part 5-1: Corrosion damage effects of fire effluent— General guidance

Introduction

This Japanese Industrial Standard has been prepared based on the second edition of **IEC 60695-5-1** published in 2002 without modifying the technical contents.

The portions with dotted underlines are the matters not given in corresponding International Standard.

The risk of fire should be considered in any electrical circuit. With regard to this risk, the circuit and equipment design, the selection of components and the choice of materials should contribute towards reducing the likelihood of fire even in the event of foreseeable abnormal use, malfunction or failure. The practical aim should be to prevent ignition caused by electrical malfunction but, if ignition and fire occur, to control the fire preferably within the bounds of the enclosure of the electrotechnical product.

All fire effluent is corrosive to some degree and the level of potential to corrode depends on the nature of the fire, the combination of combustible materials involved in the fire, the nature of the substrate under attack, and the temperature and relative humidity of the environment in which the corrosion damage is taking place. There is no evidence that fire effluent from electrotechnical products offers greater risk of corrosion damage than the fire effluent from other products such as furnishings, building materials, etc.

The performance of electrical and electronic components can be adversely affected by corrosion damage when subjected to fire effluent. A wide variety of combinations of small quantities of effluent gases, smoke particles, moisture and temperature may provide conditions for electrical component or system failures from breakage, overheating or shorting.

Evaluation of potential corrosion damage is particularly important for high value and safety-related electrotechnical products and installations.

Specifications for the products will choose the test(s) and specify the level of severity.

The study of corrosion damage requires an interdisciplinary approach involving chemistry, electricity, physics, mechanical engineering, metallurgy and electrochemistry. In the preparation of **JIS C 60695-5** series, all of the above have been considered.

1 Scope

This Standard provides guidance on the following:

- a) general aspects of corrosion damage test methods;
- b) methods of measurement of corrosion damage;
- c) consideration of test methods;

- d) relevance of corrosion damage data to hazard assessment.

NOTE : The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

IEC 60695-5-1:2002 *Fire hazard testing—Part 5-1: Corrosion damage effects of fire effluent—General guidance* (IDT)

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 21-1**.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. For standards with the year indication, only the editions of the indicated year shall be applied and any revisions (including amendments) made thereafter shall not be applied.

JIS C 3666-2:2002 *Test on gases evolved during combustion of electric cables—Part 2: Determination of degree of acidity of gases evolved during the combustion of materials taken from electric cables by measuring pH and conductivity*

NOTE : Corresponding International Standard: IEC 60754-2:1991 *Test on gases evolved during combustion of electric cables—Part 2: Determination of degree of acidity of gases evolved during the combustion of materials taken from electric cables by measuring pH and conductivity* and Amendment 1:1997 (IDT)

JIS C 60695-1-1:2000 *Fire hazard testing—Part 1: Guidance for assessing fire hazard of electrotechnical products—Section 1: General guidance*

NOTE 1 Corresponding International Standard: IEC 60695-1-1:1999 *Fire hazard testing—Part 1-1: Guidance for assessing the fire hazard of electrotechnical products—General guidelines* (IDT)

NOTE 2 **IEC 60695-1-1:1999** was withdrawn on February 2010 and it is replaced with **IEC 60695-1-10** *Fire hazard testing—Part 1-10: Guidance for assessing the fire hazard of electrotechnical products—General guidelines* and **IEC 60695-1-11** *Fire hazard testing—Part 1-11: Guidance for assessing the fire hazard of electrotechnical products—Fire hazard assessment*.

JIS C 60695-4:2010 *Fire hazard testing—Part 4: Terminology concerning fire tests for electrotechnical products*

NOTE : Corresponding International Standard: ISO 13943:2000 *Fire safety—Vocabulary* (MOD)

JIS C 60695-5-2:1999 *Fire hazard testing—Part 5: Assessment of potential corrosion damage by fire effluent—Section 2: Guidance on the selection and use of test methods* (MOD)