Australian Standard™

Fire hazard testing

Part 10.3: Abnormal heat—Mould stress relief distortion test

This Australian Standard® was prepared by Committee EL-053, Fire hazard testing—Electrotechnical equipment. It was approved on behalf of the Council of Standards Australia on 23 May 2006.
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The following are represented on Committee EL-053:

- Australian Electrical and Electronic Manufacturers Association
- Australian Information Industry Association
- Electrical Compliance Testing Association
- Electrical Regulatory Authorities Council
- Energy Networks Association

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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through public comment period.

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PREFACE

This Standard was prepared by the Standards Australia Committee EL-053, Fire hazard testing—Electrotechnical equipment.

The objective of this series of standards is to provide the electrotechnology industry and standards writing committees with a series of standards which give guidance on assessing the fire hazard of electrotechnical products.

This Standard is identical with, and has been reproduced from IEC 60695-10-3, Ed 1.0 (2002), *Fire hazard testing - Part 10-3: Abnormal heat - Mould stress relief distortion test.*

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text 'IEC 60695-10-3' should read 'AS 60695.10.3'.

(c) A full point should be substituted for a comma when referring to a decimal marker.

(d) Any French text on figures should be ignored.

The terms 'normative' and 'informative' are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

Any International Standard referenced should be replaced by an equivalent Australian Standard where one is available. The availability of equivalent Australian Standards can be determined either from the Standards Web Shop at www.standards.com.au or from the annual printed catalogue of Australian Standards.

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INTRODUCTION

When a part is moulded, the flow of the melt in the mould, the variation in temperature of different parts of the melt in the mould, non-uniform cooling etc., set up stresses within the moulded part. Additional stresses may be set up due to assembly and use in the end product.

Polymeric parts of end products, particularly their enclosures, can be expected to be exposed to environmental influences which may tend to relieve those stresses. Such conditions may include temporary exposure to high heat, such as being placed near a room heater, a cooking vessel, or to direct sunlight.

The relieving of such stresses may result in changes in dimension or warping in a manner which could cause the end product not to comply with its safety standard, and even be unsafe.

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Fire hazard testing
Part 10.3: Abnormal heat—Mould stress relief distortion test

1 Scope

This part of IEC 60695 specifies the mould stress relief distortion test as a test method for use by product committees.

It is applicable to electrotechnical equipment including parts made from polymeric materials. This test is intended to simulate the effects caused by the relieving of moulding stresses by conditioning the product or part at a temperature higher than the maximum normal operating temperature and observing the nature of the resulting changes.

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

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60216-4-1:1990, *Guide for the determination of thermal endurance properties of electrical insulating materials – Part 4-1: Ageing ovens – Single-chamber ovens*

IEC Guide 104:1997, *The preparation of safety publications and the use of basic safety publications and group safety publications*

3 General description of the test

A test specimen is exposed to an elevated temperature for a duration specified in the product specification but not less than 7 h. The test specimen is then examined to determine compliance with the requirements in the product specification.

4 Description of the test apparatus

The test apparatus consists of a heating cabinet with air temperature distribution according to IEC 60216-4-1.

5 Test specimens

The test specimen consists of the complete equipment (in the case of an enclosure) or the part under consideration. Unless otherwise specified in the relevant specification, three test specimens are tested.