Australian Standard™

Fire hazard testing

Part 6.30: Guidance and test methods on the assessment of obscuration hazard of vision caused by smoke opacity from electrotechnical products involved in fires—Small scale static method—Determination of smoke opacity—Description of the apparatus

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/TS 60695-6-30, Ed 1.0 (1996), *Fire hazard testing - Part 6: Guidance and test methods on the assessment of obscuration hazards of vision caused by smoke opacity from electrotechnical products involved in fires - Section 30: Small scale static method. Determination of smoke opacity - Description of the apparatus.*

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.

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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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1 Scope

This section of IEC 695-6 describes the apparatus, calibration procedures and basic experimental procedures for the determination of the specific optical density of smoke produced by materials exposed vertically to a radiant heat source with or without the application of a pilot flame. The test specimens are of a defined size. The determination of the optical density is carried out in a pressure controlled chamber previously calibrated with reference materials.

This method is applicable to solid, non-metallic flat test specimens only. It is not suitable for use with non-planar specimens, e.g. insulated wire and cable because it is not possible to obtain a homogeneous distribution of heat flux with such products.

This standard does not provide a classification system for the behaviour of materials.

Materials which melt and flow away from the direct impingment of heat flux may not provide reproducible results and this method is not applicable.

Virtually all non-metallic materials, including those used in electrotechnical products, emit smoke when exposed to heat. Among the hazards associated with fire, smoke causes human and material damage and impairs fire fighting. Consequently, a reduction in the rate of generation of opaque smoke produced by materials/products during a fire reduces damage to equipment, facilitates evacuation of people and emergency services intervention.

WARNING: Appropriate safety measures are to be taken as toxic and harmful effluents may be produced by pyrolysis or combustion of test specimens.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this section of IEC 695-6. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this section of IEC 695-6 are encouraged to investigate the possibility of applying the most recent edition of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 584-1: 1977, *Thermocouples – Part 1: Reference tables*
Amendment 1 (1989)

IEC 584-2 : 1982, *Thermocouples – Part 2: Tolerances*

IEC 695-1-1: 1995, *Fire hazard testing – Part 1: Guidance for assessing fire hazard of electrotechnical products – Section 1: General guidance*