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Australian Standard™

Fire hazard testing

Part 6.31: Smoke obscuration—Small-scale static test—Materials

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- 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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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 60695-6-31, Ed 1.0 (1999), *Fire hazard testing - Part 6-31: Smoke obscuration - Small-scale static test - Materials.*

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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INTRODUCTION

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.

This technical specification describes the test methods for the determination of smoke opacity generated by materials used in electrotechnical products using the apparatus described in technical specification IEC 60695-6-30.

STANDARDS AUSTRALIA

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Fire hazard testing
Part 6.31: Smoke obscuration—Small-scale static test—Materials

1 Scope

This technical specification is applicable to flat, solid non-metallic specimens of materials used in electrotechnical products.

This method is not applicable to the testing of non-flat products such as insulated wires and cables, as it is not possible to obtain a satisfactory distribution of heat flux with such products.

This method may not be applicable for materials which melt and flow away from the direct impingement of heat flux and do not give a smoke emission, which is representative of current knowledge from real fire situations.

The purpose of this technical specification is to determine, under certain specific experimental conditions, the optical density of smoke produced by materials exposed vertically to a radiant heat source with or without the application of a pilot flame in a closed chamber (i.e. without air-change).

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this technical specification. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this technical specification are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60695-4:1993, *Fire hazard testing – Part 4: Terminology concerning fire tests*

IEC 60695-6-30:1996, *Fire hazard testing – Part 6: Guidance and test methods on the assessment of obscuration hazard 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*

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

ISO 5725 (all parts), *Accuracy (trueness and precision) of measurement methods and results*

3 Definitions

For the purpose of this technical specification, definitions from IEC 60695-4 apply.