AS 60695.8.2—2006

Australian Standard™

Fire hazard testing

Part 8.2: Heat release—Summary and relevance of test methods

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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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 60695-8-2, Ed 1.0 (2000), *Fire hazard testing - Part 8-2: Heat release - Summary and relevance of test methods*.

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/TS 60695-8-2' should read 'AS 60695.8.2'.

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

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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

Fires are responsible for creating hazards to life and property as a result of the generation of heat (thermal hazard), toxic and/or corrosive compounds and obscuration of vision due to smoke. Fire risk increases as the heat released increases, possibly leading to a flash-over fire.

One of the most important measurements in fire testing is the measurement of heat release and it is used as an important factor in the determination of fire hazard; it is also used as one of the parameters in fire safety engineering calculations.

The measurement and use of heat release data, together with other fire test data, can be used to reduce the likelihood of (or the effects of) fire, even in the event of foreseeable abnormal use, malfunction or failure of electrotechnical products.

When a material is heated by some external source, fire effluent can be generated and can form a mixture with air which can ignite and initiate a fire. The heat released in the process is carried away by the fire effluent-air mixture, radiatively lost or transferred back to the solid material, to generate further pyrolysis products, thus continuing the process.

Heat may also be transferred to other nearby products, which may burn, and then release additional heat and fire effluent.

The rate at which calorific (thermal) energy is released in a fire is defined as the heat release rate. Heat release rate is important because of its influence on flame spread and on the initiation of secondary fires. Other characteristics are also important, such as ignitability, flame spread and the side-effects of the fire (see the IEC 60695 series of standards).

STANDARDS AUSTRALIA

Australian Standard

Fire hazard testing
Part 8.2: Heat release—Summary and relevance of test methods

1 Scope

This part of IEC 60695 presents a summary of published test methods that are relevant to determine heat release for electrotechnical products. It represents the current state of the art of the test methods and includes special observations on their relevance and use.

Heat release data can be used as part of fire hazard assessment and in fire safety engineering, as found in IEC 60695-1-1.

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 normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 60695. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 60695 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 (all parts), *Fire hazard testing*

IEC 60695-1-1:1999, *Fire hazard testing – Part 1-1: Guidance for assessing fire hazard of electrotechnical products – General guidance*

ISO/IEC 13943:2000, *Fire safety – Vocabulary*

IEC 60695-8-1:2000, *Fire hazard testing – Part 8-1: Heat release – General guidance*

ISO 5660-1:1993, *Fire tests – Reaction to fire – Part 1: Rate of heat release from building products (Cone calorimeter method)*

3 Definitions

For the purpose of this part of IEC 60695, the definitions of ISO/IEC 13943 and IEC 60695-8-1 apply.

4 Summary of published test methods

This summary does not replace published standards which are the only valid reference documents.