AS 60695.1.40—2006

Australian Standard™

Fire hazard testing

Part 1.40: Guidance for assessing the fire hazard of electrotechnical products—Insulating liquids

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.
This Standard was published on 22 June 2006.

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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This Standard was issued in draft form for comment as DR 06176.

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First published as AS 60695.1.40—2006.

Published by Standards Australia GPO Box 476, Sydney, NSW 2001, Australia

ISBN 0 7337 7542 X

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 60695-1-40, Ed 1.0 (2002), *Fire hazard testing - Part 1-40: Guidance for assessing the fire hazard of electrotechnical products - Insulating liquids.*

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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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

The risk of fire must be considered for all forms of electrotechnical products. For more than 100 years, insulating liquids based on mineral oil have been used for the insulating and cooling of electrical transformers and some other types of electrotechnical equipment.

During the last 60 years, synthetic insulating liquids have been developed and used in specific electrotechnical applications for which their properties are particularly suitable. However, for technical and economic reasons, highly refined mineral oil continues to be the most widely used insulating liquid for use in transformers, the major end use application. Their safe installation is covered by local, national and international regulations.

The fire safety record of electrotechnical equipment containing insulating liquids is good, for both mineral oil and synthetic liquids. In recent years improvements in design and protective measures against fire have reduced the fire hazard for electrotechnical equipment containing mineral oil. However, as for all forms of electrotechnical equipment, the objective should be to reduce the likelihood of fire even in the event of foreseeable abnormal use.

The practical aim shall be to prevent ignition, but if ignition occurs, to control the fire, preferably within the enclosure of the electrotechnical equipment.

STANDARDS AUSTRALIA

Australian Standard

Fire hazard testing
Part 1.40: Guidance for assessing the fire hazard of electrotechnical products—Insulating liquids

1 Scope

This technical specification provides guidance on the minimization of fire hazard arising from the use of electrical insulating liquids to

a) electrotechnical equipment and systems,

b) people, building structures and their contents.

As insulating liquids are always part of an insulating system, the fire hazard of the complete system must also be assessed.

This basic safety publication is primarily intended for use by technical committees in the preparation of standards in accordance with the principles laid down in IEC Guide 104 and ISO/IEC Guide 51. It is not intended for use by manufacturers or certification bodies.

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

IEC 60695-8-1:2001, *Fire hazard testing – Part 8-1: Heat release – General guidance*

IEC 61100:1992, *Classification of insulating liquids according to fire-point and net calorific value*

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

ISO/IEC Guide 51:1999, *Safety aspects – Guidelines for their inclusion in standards*

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

ISO 2592:2000, *Determination of flash and fire points – Cleveland open cup method*

3 Definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 13943 apply.

