IEC 61747-40-6

Edition 1.0 2018-02

INTERNATIONAL STANDARD

colour inside

Liquid crystal display devices –
Part 40-6: Mechanical testing of display cover glass for mobile devices –
Retained biaxial flexural strength (abraded ring-on-ring)

IEC 61747-40-6:2018-02(en)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ICS 31.120

ISBN 978-2-8322-5339-7

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

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International Standard IEC 61747-40-6 has been prepared by technical committee 110: Electronic display devices.

The text of this International Standard is based on the following documents:

CDV	Report on voting
110/882/CDV	110/929A/RVC

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 61747 series, published under the general title *Liquid crystal display devices*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

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INTRODUCTION

Mobile electronic devices have become increasingly sophisticated and often incorporate displays for the purposes of user interface and viewing. Such displays commonly incorporate a transparent cover glass which aids in protecting the display against the introduction of damage through routine device transport and use, as well as occasional or accidental misuse.

The purpose of this document is to provide mechanical testing procedures for cover glasses utilized in such applications. Such glasses can be strengthened, for example via an ion-exchange process, which acts to increase mechanical strength through the introduction of a surface compressive layer.

LIQUID CRYSTAL DISPLAY DEVICES –

Part 40-6: Mechanical testing of display cover glass for mobile devices – Retained biaxial flexural strength (abraded ring-on-ring)

1 Scope

This part of IEC 61747 is a mechanical performance testing procedure for cover glass used in electronic flat panel displays in mobile devices. This document focuses on the measurement of surface fracture load after flaw introduction via grit particle abrasion. After abrasion, the retained surface fracture load is measured with the method documented in IEC 61747-40-4.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 61747-40-1, *Liquid crystal display devices – Part 40-1: Mechanical testing of display cover glass for mobile devices – Guidelines*

IEC 61747-40-4, *Liquid crystal display devices – Part 40-4: Mechanical testing of display cover glass for mobile devices – Biaxial flexural strength (ring-on-ring)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
specimen
individual piece of glass to be abraded and then tested for retained fracture load

3.2
sample
group of specimens that share a common pedigree (such as manufacturing process and period of production), for which failure statistics can be generated and reported

3.3
sample size
number of specimens in a sample

3.4
specimen holder
two-part fixture that consists of a recessed cutout for the specimen and a backing plate to hold the specimen in place when testing