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Flüssigkristall-Anzeige-Bauelemente - Teil 5-3: Verfahren zur Messung von Glasfestigkeit und Zuverlässigkeit (IEC 61747-5-3:2009, modifiziert)

Dispositifs d'affichage à cristaux liquides - Part 5-3: Méthodes d'essais d'environnement, d'endurance et mécaniques - Résistance et fiabilité du verre (CEI 61747-5-3:2009, modifiée)

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of the International Standard IEC 61747-5-3:2009, prepared by IEC TC 110, Flat panel display devices, together with the common modifications prepared by the CENELEC Reporting Secretariat 110 (NL), was submitted to the CENELEC formal vote and was approved by CENELEC as EN 61747-5-3 on 2010-05-01.

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The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2011-05-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2013-05-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61747-5-3:2009 was approved by CENELEC as a European Standard with the following common modifications.

COMMON MODIFICATIONS

4 Abbreviated terms

***Delete**:*

MC mirror constant
MR mirror radius
SCSC stress corrosion susceptibility constant

8.2 Quasistatic biaxial strength (parent glass)

***Replace** the title by:*

8.2 Quasistatic biaxial failure stress (parent glass)

8.3 Quasistatic edge strength (parent glass)

***Replace** the title by:*

8.3 Quasistatic edge failure stress (parent glass)

*Under equation 2, **replace** the following definition:*

σ_e is the edge failure stress.

9 Fatigue and reliability calculations

9.1 General

***Replace** Equation 3 by:*

$$\int_0^{t_F} \sigma^n(t)dt \approx BS^{n-2}$$

*Under Equation 3 **replace** the following definitions:*

$\sigma(t)$ is the applied stress over time,
t_F is the time to failure,

9.2 Fatigue constant calculation

***Replace** the title by:*

9.2 Dynamic fatigue calculation

9.3 Weibull parameter calculation from dynamic failure stress data

***Replace** the last sentence of the 1st paragraph by:*

For each, the effective strength, $Seff_K$ is calculated as

*Under Equation 7 **add** the following definition:*

$Seff_0$ is the Weibull scaling factor for *S*eff

9.4 Fatigue constant calculation

Replace *the title by:*

9.4 Extrapolated static fatigue and Weibull distribution calculation

Replace *Equation 8 by:*

$$\ln(S\text{eff}) = \frac{n}{n-2}\ln(\sigma_a) + \frac{1}{n-2}\ln(t_F)$$

Replace *Equation 9 by:*

$$\ln(-\ln(1-F)) + m\ln(S\text{eff}_0) = \frac{mn}{n-2}\ln(\sigma_a) + \frac{m}{n-2}\ln(t_F)$$

Annex A (informative) **Worked test example**

Replace *the sentence under table A.1 by:*

The failure stress value can also be estimated by measuring the mirror radius, R_m of the specimen's fracture surface, as shown in Figures A.2 and A.3, and using Equation (A.1).

Add *the following note to Equation A.1:*

σ_f is the failure stress for a given sample.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 61747-1	-	Liquid crystal and solid-state display devices - Part 1: Generic specification	EN 61747-1	-
IEC 61747-5	1998	Liquid crystal and solid-state display devices - Part 5: Environmental, endurance and mechanical test methods	EN 61747-5	1998

IEC 61747-5-3

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Liquid crystal display devices – Part 5-3: Environmental, endurance and mechanical test methods – Glass strength and reliability

Dispositifs d'affichage à cristaux liquides – Partie 5-3: Méthodes d'essais d'environnement, d'endurance et mécaniques – Résistance et fiabilité du verre

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

LIQUID CRYSTAL DISPLAY DEVICES –

Part 5-3: Environmental, endurance and mechanical test methods – Glass strength and reliability

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There have been no significant revisions since the publication of the PAS version.

This part of IEC 61747 is a sectional specification for liquid crystal display cells. It is to be read in conjunction with the IEC 61747-1 to which it refers.