

**Semiconductor devices - Microelectromechanical
devices - Part 10: Micro-pillar compression test for
MEMS materials**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 62047-10:2011 sisaldab Euroopa standardi EN 62047-10:2011 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 30.09.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 09.09.2011.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 62047-10:2011 consists of the English text of the European standard EN 62047-10:2011.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 30.09.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 09.09.2011.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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**Semiconductor devices -
Micro-electromechanical devices -
Part 10: Micro-pillar compression test for MEMS materials
(IEC 62047-10:2011)**

Dispositifs à semiconducteur -
Dispositifs microélectromécaniques -
Partie 10: Essai de compression utilisant
la technique des micro-piliers pour les
matériaux des MEMS
(CEI 62047-10:2011)

Halbleiterbauelemente -
Bauelemente der Mikrosystemtechnik -
Teil 10: Druckprüfverfahren an
zylinderförmigen Mikroproben für
Werkstoffe der Mikrosystemtechnik
(IEC 62047-10:2011)

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

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Foreword

The text of document 47F/85/FDIS, future edition 1 of IEC 62047-10, prepared by SC 47F, Micro-electromechanical systems, of IEC TC 47, Semiconductor devices, was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62047-10:2011.

The following dates are fixed:

- latest date by which the document has to be implemented at (dop) 2012-05-30
national level by publication of an identical national
standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2014-08-30
document have to be withdrawn

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The text of the International Standard IEC 62047-10:2011 was approved by CENELEC as a European Standard without any modification.

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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62047-8	-	Semiconductor devices - Micro-electromechanical devices - Part 8: Strip bending test method for tensile property measurement of thin films	EN 62047-8	-

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SEMICONDUCTOR DEVICES –
MICRO-ELECTROMECHANICAL DEVICES –

Part 10: Micro-pillar compression test for MEMS materials

1 Scope

This part of IEC 62047 specifies micro-pillar compression test method to measure compressive properties of MEMS materials with high accuracy, repeatability, and moderate effort of specimen fabrication. The uniaxial compressive stress-strain relationship of a specimen is measured, and the compressive modulus of elasticity and yield strength can be obtained.

The test piece is a cylindrical pillar fabricated on a rigid (or highly stiff) substrate by micro-machining technologies, and its aspect ratio (ratio of pillar diameter to pillar height) should be more than 3. This standard is applicable to metallic, ceramic, and polymeric materials.

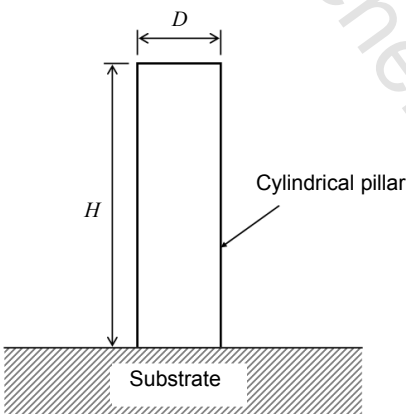
2 Normative references

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IEC 62047-8, *Semiconductor devices – Micro-electromechanical devices – Part 8: Strip bending test method for tensile property measurement of thin films*

3 Symbols and designations

For the purposes of this document, the shape of test piece and symbols are given in Figure 1 and Table 1, respectively. Test piece in this standard is often referred to as a pillar specimen.



IEC 1708/11

Key

Components

- cylindrical pillar: a part of micro-pillars fabricated on a substrate using micro-machining process shaped in a cylinder as a test piece
- substrate: a kind of rigid (or highly stiff) material supporting the test piece

Dimensions of cylindrical pillar

- D : diameter of a test piece
- H : height of a test piece

Figure 1 – Shape of cylindrical pillar (See Table 1 for symbols)