

INTERNATIONAL STANDARD

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**Test methods for electrical materials, circuit boards and other interconnection structures and assemblies –
Part 2-809: X/Y coefficient of thermal expansion (CTE) test for thick base materials by TMA**

**Méthodes d'essai pour les matériaux électriques, les circuits imprimés et autres structures d'interconnexion et assembles –
Partie 2-809: Essai du coefficient de dilatation thermique (CTE) X/Y pour matériaux de base épais à l'aide d'un analyseur thermomécanique (TMA)**



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IEC Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TEST METHODS FOR ELECTRICAL MATERIALS, CIRCUIT BOARDS AND OTHER INTERCONNECTION STRUCTURES AND ASSEMBLIES –

Part 2-809: X/Y coefficient of thermal expansion (CTE) test for thick base materials by TMA

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IEC 61189-2-809 has been prepared by IEC technical committee 91: Electronics assembly technology. It is an International Standard.

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

Draft	Report on voting
91/1983/FDIS	91/1994/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 61189 series, published under the general title *Test methods for electrical materials, circuit boards and other interconnection structures and assemblies*, 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 webstore.iec.ch in the data related to the specific document. At this date, the document will be

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TEST METHODS FOR ELECTRICAL MATERIALS, CIRCUIT BOARDS AND OTHER INTERCONNECTION STRUCTURES AND ASSEMBLIES –

Part 2-809: X/Y coefficient of thermal expansion (CTE) test for thick base materials by TMA

1 Scope

This part of IEC 61189 defines the method to be followed for the determination of the X/Y coefficient of thermal expansion of electrical insulating materials by the use of a thermomechanical analyser (TMA).

This method is applicable to materials that are solid of the entire range of temperature used and retain sufficient hardness and rigidity over the temperature range so that irreversible indentation of the specimen by the sensing probe does not occur.

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 60194-1, *Printed boards design, manufacture and assembly – Vocabulary – Part 1: Common usage in printed board and electronic assembly technologies*

IEC 60194-2, *Printed boards design, manufacture and assembly – Vocabulary – Part 2: Common usage in electronic technologies as well as printed board and electronic assembly technologies*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60194-1 and IEC 60194-2 apply.

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4 Test specimens

4.1 The test specimens shall be between 0,5 mm to 7,5 mm thick. This thickness may be "as received" or may be laminated by the user from pre-impregnated "B" stage material. If laminated by the user, the user shall be responsible for the layup and curing parameters used for quality acceptance by the manufacturer.

NOTE The repeatability of the test results will vary by the factors, such as layup used, the resin to glass ratio and the ultimate cure of the laminated stack, etc.