INTERNATIONAL STANDARD

ISO 19095-3

First edition
2015-08-01

Plastics — Evaluation of the adhesion interface performance in plastic-metal assemblies —

Part 3: Test methods

Plastiques — Évaluation des performances de l'interface d'adhérence dans les assemblages plastique-métal —

Partie 3: Méthodes d'essai

Reference number
ISO 19095-3:2015(E)

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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 61, *Plastics*, Subcommittee SC 11, *Products*.

ISO 19095 consists of the following parts, under the general title *Plastics — Evaluation of the adhesion interface performance in plastic-metal assemblies*:

— *Part 1: Guidelines for the approach*

— *Part 2: Test specimens*

— *Part 3: Test methods*

— *Part 4: Environmental conditions for durability*

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Introduction

Structures of heterogeneous materials are being manufactured in the automobiles and aerospace industry sectors where higher safety margins are required.

The existing test methods are not appropriate because the evaluation of the adhesion performance of plastic-metal assemblies is difficult as the polymer material has a relatively low mechanical strength and therefore fractures outside the joints. Therefore, it is necessary to develop a methodology for the evaluation of the plastic-metal interface performance.

A test method to evaluate accurately the adhesion interface performance or standardization of long-term evaluation under harsh environments is also necessary.

The method in ISO 19095 is intended to ensure the integrity of the interface is realized through the interface and that traceability of the value improves the data comparison.

This part of ISO 19095 defines the test conditions, quoting test methods related to mechanical properties that can be evaluated by the existing ISO standards and also adding other test methods that are supposed to be needed.

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Plastics — Evaluation of the adhesion interface performance in plastic-metal assemblies —

Part 3: Test methods

SAFETY STATEMENT — Persons using this this part of ISO 19095 should be familiar with normal laboratory practice, if applicable. This part of ISO 19095 does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any regulatory conditions. It is recognized that some of the materials permitted in this part of ISO 19095 might have a negative environmental impact. As technological advances lead to more acceptable alternatives for such materials, they will be eliminated to the greatest extent possible. At the end of the test, care should be taken to dispose of all waste in an appropriate manner in accordance with local regulations.

1 Scope

This part of ISO 19095 specifies the test methods for the adhesion interface performance in plastic-metal assemblies.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 8256, *Plastics — Determination of tensile-impact strength*

ISO 14125, *Fibre-reinforced plastic composites — Determination of flexural properties*

ISO 19095-1, *Plastics — Evaluation of the adhesion interface performance in plastic-metal assemblies — Part 1: Guidelines for the approach*

ISO 19095-2:2015, *Plastics — Evaluation of the adhesion interface performance in plastic-metal assemblies — Part 2: Test specimens*

IEC 60068-2-17, *Basic environmental testing procedures — Part 2-17: Tests — Test Q: Sealing*

3 Conditioning

See ISO 19095-1.

4 Conditions of the specimens

The specimens shall be free from twist and shall have mutually perpendicular pairs of parallel surfaces. The surfaces and edges shall be free from scratches, pits, sink marks, and flashes. The specimens shall be checked for conformity with these requirements by visual observation against straight-edges, squares, and flat plates and by measuring with micrometre callipers. Specimens showing measurable or observable departure from one or more of these requirements shall be rejected or machined to the required size and shape before testing.

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