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Fine ceramics (advanced ceramics, advanced technical ceramics) — Test method for antibacterial activity of semiconducting photocatalytic materials under indoor lighting environment

Céramiques techniques — Méthode d'essai de l'activité antibactérienne des matériaux photocatalytiques semiconducteurs dans un environnement d'éclairage intérieur

Reference number
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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 206, *Fine ceramics*.

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Introduction

A test method for cloths or textiles is not included in this International Standard because of a lack of indoor-light-active photocatalytic cloths or textiles. When indoor-light-active photocatalytic cloths or textiles have been developed, a suitable test method will be proposed with the remediated glass adhesion method given in ISO 27447.

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Fine ceramics (advanced ceramics, advanced technical ceramics) — Test method for antibacterial activity of semiconducting photocatalytic materials under indoor lighting environment

WARNING — Handling and manipulation of microorganisms that are potentially hazardous requires a high degree of technical competence. Only personnel trained in microbiological techniques should carry out tests.

1 Scope

This International Standard presents a test method for determining the antibacterial activity of materials that contain an indoor-light-active photocatalytic material or have indoor-light-active photocatalytic films on the surface by measuring the survival of bacteria after illumination with indoor light.

It is intended for use with different kinds of indoor-light-active photocatalytic materials used in construction materials in flat sheet, board or plate shape that are the basic forms of materials for various applications. It does not include powder, granular, or porous indoor-light-active photocatalytic materials, nor is it applicable to cloths or textiles.

It is applicable to indoor-light-active photocatalytic materials produced for antibacterial application. Other types of performance of indoor-light-active photocatalytic materials, i.e. decomposition of water contaminants, self-cleaning, antifogging, and air purification, cannot be determined by this method.

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 27447, *Fine ceramics (advanced ceramics, advanced technical ceramics) — Test method for antibacterial activity of semiconducting photocatalytic materials*

ISO 14605, *Fine ceramics (advanced ceramics, advanced technical ceramics) — Light source for testing semiconducting photocatalytic materials used under indoor lighting environment*

3 Terms and definitions

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

3.1
photocatalyst
substance that performs one or more functions based on oxidization and reduction reactions under photoirradiation, including decomposition and removal of air and water contaminants, deodorization, and antibacterial, antifungal, self-cleaning, and antifogging actions

3.2
indoor-light-active photocatalyst
photocatalyst that functions under illumination with artificial light used for general lighting purposes

3.3
indoor lighting environment
illumination with artificial light source(s) used for general lighting purposes and excluding sunlight

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