

JIS

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS R 1703-1 : 2020

(JFCA/JSA)

**Fine ceramics (advanced ceramics,
advanced technical ceramics) — Test
method for self-cleaning performance of
photocatalytic materials — Part 1:
Measurement of water contact angle**

ICS 81.060.30

Reference number : JIS R 1703-1 : 2020 (E)

PROTECTED BY COPYRIGHT

13 S

R 1703-1 : 2020

Date of Establishment: 2007-07-20

Date of Revision: 2020-10-20

Date of Public Notice in Official Gazette: 2020-10-20

Investigated by: Japanese Industrial Standards Committee
Standards Board for ISO area

JIS R 1703-1 : 2020, First English edition published in 2021-10

Translated and published by: Japanese Standards Association
Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

© JSA 2021

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

AH/HN

PROTECTED BY COPYRIGHT

Contents

	Page
Introduction	1
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Symbols and unit	4
5 Principle	4
6 Test apparatus	4
7 Reagents	5
8 Temperature and humidity of test laboratory	5
9 Test piece	5
10 Test methods	5
10.1 General	5
10.2 Pretreatment of test piece	6
10.3 Measurement of water contact angle	7
11 Calculation of test results	8
11.1 Rounding of numbers	8
11.2 Determination of the final contact angle	8
12 Test report	9
Annex A (informative) Measurement example of final contact angle	10
Annex JA (informative) Comparison table between JIS and corresponding International Standard	12

Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Fine Ceramics Association (JFCA)/Japanese Standards Association (JSA) with a draft being attached, based on the provision of Article 12, paragraph (1) of the Industrial Standardization Act applied *mutatis mutandis* pursuant to the provision of Article 16 of the said Act. This edition replaces the previous edition (**JIS R 1703-1 : 2007**), which has been technically revised.

This **JIS** document is protected by the Copyright Act.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, published patent application or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, published patent application or utility model rights.

JIR R 1703 series consists of the following 2 parts under the general title *Fine ceramics (advanced ceramics, advanced technical ceramics) — Test method for self-cleaning performance of photocatalytic materials* :

Part 1 : Measurement of water contact angle

Part 2 : Decomposition of wet methylene blue

Fine ceramics (advanced ceramics, advanced technical ceramics) — Test method for self-cleaning performance of photocatalytic materials — Part 1 : Measurement of water contact angle

Introduction

This Japanese Industrial Standard has been prepared based on **ISO 27448** : 2009, Edition 1, with some modifications of the technical contents.

The vertical lines on both sides and dotted underlines indicate changes from the corresponding International Standard. A list of modifications with the explanations is given in Annex JA.

1 Scope

This Standard specifies the measurement method using water contact angle among the test methods for self-cleaning performance of photocatalytic materials, in which metal oxide semiconductors such as titanium dioxide are mainly used as photocatalysts.

This Standard does not apply to the permeable photocatalytic materials which absorbs water and cannot retain water droplets, photocatalytic materials with uneven surfaces which hide waterdrops, photocatalytic materials with high water repellency, powdered and granular photocatalytic materials, and photocatalytic materials of visible light response type.

NOTE The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO 27448 : 2009 *Fine ceramics (advanced ceramics, advanced technical ceramics) — Test method for self-cleaning performance of semiconducting photocatalytic materials — Measurement of water contact angle* (MOD)

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and **JIS** are IDT (identical), MOD (modified), and NEQ (not equivalent) according to **ISO/IEC Guide 21-1**.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS K 0557 *Water used for industrial water and wastewater analysis*

JIS K 7100 *Plastics — Standard atmospheres for conditioning and testing*