JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS H 7851 : 2015

(OSTEC/JSA)

Test method of cyclic heating for thermal-barrier coatings under temperature gradient

ICS 17.200.10;25.220.20

Reference number : JIS H 7851 : 2015 (E)

Date of Establishment: 2005-03-20
Date of Revision: 2015-03-20
Date of Public Notice in Official Gazette: 2015-03-20
Investigated by: Japanese Industrial Standards Committee
Standards Board for ISO area
Technical Committee on Metal and Inorganic Materials

JIS H 7851:2015, First English edition published in 2015-10

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.

Printed in Japan

HT/AT

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Foreword

This translation has been made based on the original Japanese Industrial Standard 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 Osaka Science & Technology Center (OSTEC)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently, **JIS H 7851**:2005 is replaced with this Standard.

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

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Introduction

This Japanese Industrial Standard has been prepared based on the first edition of **ISO 13123** published in 2011 with some modifications of the technical contents.

The portions given sidelines or dotted underlines are the matters in which the contents of the corresponding International Standard have been modified. A list of modifications with the explanations is given in Annex JB.

1 Scope

This Standard specifies the test method of cyclic heating under temperature gradient[1)] for evaluating the thermal-barrier performance and the cyclic heat resistance of thermal-barrier coatings provided for high-temperature components such as burners, rotating blades and stationary blades of power-generation gas turbines, aircraft engines and so on.

Also, this Standard is applicable to the evaluation test for the thermal-barrier performance and the cyclic heat resistance of functionally gradient materials.

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

ISO 13123:2011 *Metallic and other inorganic coatings—Test method of cyclic heating for thermal-barrier coatings under temperature gradient* (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**.

Note [1)] The temperature gradient in this Standard means the temperature field close to the actual environment in which a temperature gradient is intentionally provided by heating the surface of test piece and cooling the backside thereof, which is different from the test method of cyclic heating under isothermal field specified in **JIS H 8451**.

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 standard (including amendments) indicated below shall be applied.

JIS B 7502 *Micrometer callipers*

JIS B 7507 *Vernier, dial and digital callipers*

JIS C 1602 *Thermocouples*