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conductivity of thermal barrier
coatings**

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In the event of any doubts arising as to the contents,
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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 The Foundation of 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 8453**:2010 is replaced with this Standard.

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Measurement method for thermal conductivity of thermal barrier coatings

Introduction

This Japanese Industrial Standard has been prepared based on **ISO 18555:2016**, 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 method for determining the thermal conductivities of thermal barrier coatings that consist of metallic bond coats and ceramic top coats, in a direction normal to the coating surface, at room temperature. This Standard is applicable to thermal barrier coatings that are mainly used for high-temperature components of a gas turbine.

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

ISO 18555:2016 *Metallic and other inorganic coatings—Determination of thermal conductivity of thermal barrier coatings* (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 B 7502 *Micrometers*

JIS B 7507 *Vernier, dial and digital callipers*

JIS H 7801 *Method for measuring thermal diffusivity of metals by the laser flash method*

JIS H 8401 *Methods of thickness measurement for sprayed coatings*

JIS R 1611 *Measurement methods of thermal diffusivity, specific heat capacity, and thermal conductivity for fine ceramics by flash method*

JIS R 1672 *Determination of specific heat of fiber-reinforced ceramics composite by differential scanning calorimetry methods*

3 Terms and definitions

For the purpose of this Standard, the terms and definitions given in **JIS R 1611**, and the following apply.