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**Cranes — Design principles for loads and
load combinations**

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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 Health, Labour and Welfare and 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 Crane Association (JCA)/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 B 8831** : 2004), which has been technically revised.

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Cranes — Design principles for loads and load combinations

Introduction

This Japanese Industrial Standard has been prepared based on **ISO 8686-1** : 2012, Edition 2, with some changes to the technical contents of the allowable stress method and addition of provisions based on the crane structural standard and mobile crane structural standard (hereinafter referred to as structural standards) that are in compliance with the Industrial Safety and Health Act.

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.

Of the two design methods specified in the standard series of the above corresponding International Standard, namely, the allowable stress method and limit state method, this Standard only specifies the allowable stress method. The limit state method is specified in **JIS B 8833** series.

1 Scope

This Standard applies to the design principles based on the allowable stress method for loads and load combinations of steel structural components of cranes and mobile cranes specified in **JIS B 0146-1**. However, the formulae and numerical values specified in this Standard need not necessarily be used if verification is possible with valid theory or experiment.

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

ISO 8686-1 : 2012 *Cranes — Design principles for loads and load combinations — Part 1 : General* (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

Part or all of the provisions of the following standards, 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 0146-1 *Cranes — Vocabulary — Part 1 : General*

NOTE 1 Normative reference in the corresponding International Standard: ISO 4306-1 *Cranes — Vocabulary — Part 1 : General*

NOTE 2 **JIS B 0146-1** is cited in place of **ISO 4306-1** because its contents to be referred to in this Standard are more in line with the technical condi-