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Carbon steels for machine structural use

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Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry based on the provision of Article 14, paragraph (1) of the Industrial Standardization Act applied mutatis mutandis pursuant to the provision of Article 16 of the said Act in response to a proposal for revision of Japanese Industrial Standard with a draft being attached, submitted by The Japan Iron and Steel Federation (JISF), an accredited standards development organization. This edition replaces the previous edition (**JIS G 4051** : 2023), which has been technically revised.

However, **JIS G 4051** : 2023 may be applied in the JIS mark certification based on the relevant provisions of Article 30, paragraph (1), etc. of the Industrial Standardization Act until 19 May 2027.

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Carbon steels for machine structural use

Introduction

This Japanese Industrial Standard has been prepared based on **ISO 683-1** : 2016, Edition 3 and **ISO 683-3** : 2022, Edition 4, with some modifications of the technical contents.

Annex JA to Annex JD are unique to **JIS** and not given in the corresponding International Standards. The vertical lines on both sides and dotted underlines indicate changes from the corresponding International Standards. A list of modifications with the explanations is given in Annex JE.

1 Scope

This Standard specifies requirements for carbon steels for machine structural use (hereafter referred to as steel products) which are mainly manufactured by hot-rolling, hot-forging and hot-extruding. This Standard applies to the steel products with a uniform cross-section, which are generally supplied for use after further processes such as forging and cutting, and heat treatment. This Standard is not applicable to steel tubes [1)].

The manufacturing method and quality requirements for hot-extruded sections are given in Annex JA.

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

ISO 683-1 : 2016 *Heat-treatable steels, alloy steels and free-cutting steels — Part 1: Non-alloy steels for quenching and tempering*

ISO 683-3 : 2022 *Heat-treatable steels, alloy steels and free-cutting steels — Part 3: Case-hardening steels* (overall evaluation: MOD)

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

Note [1)] Steel tubes are covered in **JIS G 3478** [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 G 0201 *Glossary of terms used in iron and steel (Heat treatment)*

JIS G 0202 *Glossary of terms used in iron and steel (Testing)*

JIS G 0203 *Glossary of terms used in iron and steel (Products and quality)*

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