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Mechanical properties of fasteners made of carbon steel and alloy steel—Bolts, screws and studs with specified property classes—Coarse thread and fine pitch thread

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

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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 The Japan Research Institute for Screw Threads and Fasteners (JFRI)/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 B 1051**:2000 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.

Mechanical properties of fasteners made of carbon steel and alloy steel—Bolts, screws and studs with specified property classes—Coarse thread and fine pitch thread

Introduction

This Japanese Industrial Standard has been prepared based on the fifth edition of **ISO 898-1** published in 2013 without any modifications of the technical contents.

The portions with dotted underlines are the matters not given in the corresponding International Standard.

1 Scope

This Standard specifies mechanical and physical properties of bolts, screws and studs made of carbon steel and alloy steel when tested at an ambient temperature range of 10 °C to 35 °C. Fasteners (the term used when bolts, screws and studs are considered all together) that conform to the requirements of this Standard are evaluated at that ambient temperature range. They might not retain the specified mechanical and physical properties at elevated temperatures (see Annex B) and/or lower temperatures.

NOTE 1 Fasteners conforming to the requirements of this Standard are used in applications ranging from −50 °C to +150 °C. Users are advised to consult an experienced fastener metallurgist for temperatures outside the range of −50 °C to +150 °C and up to a maximum temperature of +300 °C when determining appropriate choices for a given application.

NOTE 2 Information for the selection and application of steels for use at lower and elevated temperatures is given, for example, in **EN 10269**, **ASTM F2281** and in **ASTM A320/A320M**.

Certain bolts and screws might not fulfil the tensile or torsional requirements of this Standard because the geometry of their heads reduces the shear area in the head compared to the stress area in the thread. These include bolts and screws having a low or countersunk head (see **8.2**).

This Standard is applicable to bolts, screws and studs

— made of carbon steel or alloy steel,

— having triangular **ISO** metric screw thread in accordance with **JIS B 0205-1**,

— with coarse pitch thread M1.6 to M39, and fine pitch thread M8×1 to M39×3,

— with diameter/pitch combinations in accordance with **JIS B 0205-2** and **JIS B 0205-3**, and

— having thread tolerances in accordance with **JIS B 0209-1**, **JIS B 0209-2** and **JIS B 0209-4**.