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JIS G 3508-2 : 2005
(JWPA)

**Boron steels for cold heading —
Part 2: Wires**

ICS 77.140.10; 77.140.65

Reference number : JIS G 3508-2 : 2005 (E)

Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal of establishing a Japanese Industrial Standard from Japan Wire Products Association (JWPA), with a draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law. Consequently **JIS G 3545:1991** is replaced with this Standard.

This Standard has been made based on **ISO 4954:1993** *Steels for cold heading and cold extruding* for the purpose of making it easier to compare this Standard with International Standard; to prepare Japanese Industrial Standard conforming with International Standard; and to propose a draft of an International Standard which is based on Japanese Industrial Standard.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

JIS G 3508 consists of the following parts under the general title "*Boron steels for cold heading*":

Part 1: Wire rods

Part 2: Wires

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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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Boron steels for cold heading — Part 2 : Wires

Introduction This Japanese Industrial Standard has been prepared based on the second edition of **ISO 4954** *Steels for cold heading and cold extruding* published in 1993 with some modifications of the technical contents.

Portions given sidelines are the matters in which the contents of the original International Standard have been modified. A list of modifications with the explanations is given in annex 1 (informative).

1 Scope This part of **JIS G 3508** specifies the boron steel wires for cold heading (hereafter referred to as the “wires”) to be used for manufacture of various types of screws such as bolts, nuts and machine screws and other parts by cold heading.

Remarks : The International Standard corresponding to this part of **JIS G 3508** is as follows.

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**.

ISO 4954:1993 *Steels for cold heading and cold extruding* (MOD)

2 Normative references The standards listed in attached table 1 contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions of the standards (including the amendments) shall be applied.

3 Symbol of grade The wires shall be classified into 12 grades and their symbols shall be as given in table 1.

Table 1 Symbol of grade

Symbol of grade ⁽¹⁾	Processing method ⁽²⁾	Symbol of grade ⁽¹⁾	Processing method ⁽²⁾
SWCHB 223	D process : D, DA Process : DA	SWCHB 420	D process : D, DA Process : DA
SWCHB 237	DA process : DA	SWCHB 526	
SWCHB 320	D process : D, DA Process : DA	SWCHB 620	
SWCHB 323	DA process : DA	SWCHB 623	DA process : DA
SWCHB 331		SWCHB 726	
SWCHB 334		SWCHB 734	

Notes ⁽¹⁾ The symbols of grades of wires are obtained by deleting the third letter R of the symbol of a grade in **JIS G 3508-1** of the wire rod to be applied.

Wire rod

Wire

Example : SWRCHB 223

SWCHB 223

(2) D process means to finish wire rods by cold processing.

DA process means after cold processing, wire rods are annealed, and further finished by cold processing. Or after annealing wire rods, they are finished by cold processing.

4 Material The material used for manufacturing of the wires shall be the wire rods which conform to **JIS G 3508-1**.

5 Method of manufacture The method of manufacture of the wire shall be as follows:

- a) The wire shall be manufactured by either D or DA process. However, upon agreement between the purchaser and the supplier, the wire may be manufactured by other process than those mentioned above.
- b) The purchaser may specify the type of surface film of the wire.

6 Mechanical properties The wires shall be tested in accordance with **10.2**, and their tensile strength and contraction for D process and DA process shall comply with tables 2 and 3, respectively. When other process than D and DA processes is applied, however, it shall be agreed between the purchaser and the supplier.

Table 2 Mechanical properties of wires by D process

Symbol of grade	Tensile strength N/mm ²	Reduction of area %	(Informative) Hardness HRB
SWCHB 223	750 max.	45 min.	100 max.
SWCHB 320			
SWCHB 323			
SWCHB 420			
SWCHB 526			
SWCHB 620			

Remarks 1 For the wire 20 mm or over in diameter, the reduction of area shall be a value 5 lower than the value in table 2.

For those of diameter 3 mm or under, the reduction of area is not specified.

2 1 N/mm² = 1 MPa