JIS

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS G 3120 : 2014

(JISF)

Manganese-molybdenum and manganese-molybdenum-nickel alloy steel plates quenched and tempered for pressure vessels

ICS 77.140.30

Reference number : JIS G 3120 : 2014 (E)

Date of Establishment: 1970-10-01
Date of Revision: 2014-03-20
Date of Public Notice in Official Gazette: 2014-03-20
Investigated by: Japanese Industrial Standards Committee
Standards Board
Technical Committee on Iron and Steel

JIS G 3120:2014, First English edition published in 2015-02

Translated and published by: Japanese Standards Association
Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

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

Printed in Japan

AT

Contents

Page

Introduction 1

1 Scope 1

2 Normative references 1

3 Classification and symbols 2

4 Manufacturing method and heat treatment 2
4.1 Manufacturing method 2
4.2 Heat treatment and symbol of heat treatment 2

5 Chemical composition 4
5.1 Heat analysis value 4
5.2 Product analysis value 4

6 Mechanical properties 4
6.1 Proof stress, tensile strength, elongation and bendability 4
6.2 Charpy absorbed energy 5

7 Shapes, dimensions, mass and their tolerances 6

8 Appearance 6

9 Tests 6
9.1 Chemical analysis 6
9.2 Mechanical test 7

10 Inspection 8

11 Re-inspection 8

12 Marking 9

13 Test report 9

Annex JA (normative) Upper limits of alloy elements not specified in table 3 10

Annex JB (informative) Comparison table between JIS and corresponding International Standards 11

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 Iron and Steel Federation (JISF) 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 G 3120**:2009 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.

Manganese-molybdenum and manganese-molybdenum-nickel alloy steel plates quenched and tempered for pressure vessels

Introduction

This Japanese Industrial Standard has been prepared based on the third editions of **ISO 9328-1** and **ISO 9328-2** published in 2011 with some modifications of the technical contents.

This Standard was established in 1970 according to **ASTM A 533**. The specifications of **ISO 9328-1** and **ISO 9328-2** subsume those of **ASTM A 533** and this Standard. At this time, the specification of chemical composition has been revised to correspond to the revisions of the corresponding **ISO** standards and **ASTM A 533**.

The portions with continuous sidelines or dotted underlines are the matters not given in the corresponding International Standards. A list of modifications with the explanations is given in Annex JB.

1 Scope

This Standard specifies quenched and tempered manganese-molybdenum and manganese-molybdenum-nickel alloy steel plates (hereafter referred to as "steel plates"), suited for thermal refining by quenching and tempering, to be used for nuclear reactors and other pressure vessels.

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

ISO 9328-1:2011 *Steel flat products for pressure purposes—Technical delivery conditions—Part 1: General requirements*

ISO 9328-2:2011 *Steel flat products for pressure purposes—Technical delivery conditions—Part 2: Non-alloy and alloy steels with specified elevated temperature properties* (Overall evaluation: MOD)

The 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**.

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 G 0320 *Standard test method for heat analysis of steel products*

JIS G 0321 *Product analysis and its tolerance for wrought steel*

JIS G 0404 *Steel and steel products—General technical delivery requirements*