JIS

JAPANESE INDUSTRIAL STANDARD

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JIS E 1101 : 2001

Flat bottom railway rails and special rails for switches and crossings of non-treated steel

ICS 45.080

Descriptors : plain track, railway rails, point work

Reference number : JIS E 1101 : 2001 (E)

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 in accordance with the Industrial Standardization Law. Consequently **JIS E 1101** : 1993 is replaced with **JIS E 1101** : 2001.

In this revision, for striving after conformity to the corresponding International Standard it adopts **ISO 5003** *Flat bottom railway rails and special rail section for switches and crossings of non-treated steel—Technical delivery requirements* as the basis.

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.

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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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Figures and tables

Flat bottom railway rails and special rails for switches and crossings of non-treated steel

Introduction This Japanese Industrial Standard has been prepared based on the first edition of **ISO 5003** *Flat bottom railway rails and special rail section for switches and crossings of non-treated steel—Technical delivery requirements* published in 1980 without modifying the technical contents of the corresponding International Standard, excepting supplement of the following clauses and technical contents not specified in the corresponding International Standard and deletion of some requirements in that Standard.

a) Giving consideration to the confusion by overall and drastic revision, such provisions in the former **JIS** as classification, shape and dimensions are set together, in a minimum of necessity, by way of supplementary clause or technical contents to extend the user's choice.

b) In the classification, S rails, which had been specified in Annex 2 of **JIS E 1303**, are added as well as the rails of the former **JIS E 1101**, while the 50 kg rail and 90 S rail, which have become to be no product results, are deleted.

The portions sidelined or underlined with dots in this Standard show the matters not specified in the corresponding International Standard.

1 Scope This Standard specifies the quality and the tests for flat bottom railway rails of non-treated steel with a calculated mass of 30 kg/m or more and special rails for those railway switches and crossings (hereafter, where generically termed for both, referred to as "rails").

Remarks 1 The purchaser's attention is drawn to the fact that an invitation to tender should normally be accompanied by a definition of the conditions of use and other relevant documents for carrying out the order, and in particular those concerning the application of the clauses in this Standard.

2 The International Standard corresponding to this Standard 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 5003 *Flat bottom railway rails and special rail section for switches and crossings of non-treated steel—Technical delivery requirements* (MOD)

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

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)*

JIS G 0303 *General rules for inspection of steel*

JIS G 0560 *Method of sulphur print test for steel*

JIS G 1211 *Iron and steel—Methods for determination of carbon content*

JIS G 1212 *Iron and steel—Methods for determination of silicon content*

JIS G 1213 *Methods for determination of manganese in iron and steel*

JIS G 1214 *Iron and steel—Methods for determination of phosphorus content*

JIS G 1215 *Iron and steel—Methods for determination of sulfur content*

JIS G 1253 *Iron and steel—Method for spark discharge atomic emission spectrometric analysis*

JIS G 1256 *Iron and steel—Method for X-ray fluorescence spectrometric analysis*

JIS G 1257 *Iron and steel—Methods for atomic absorption spectrometric analysis (Amendment 2)*

JIS G 1258 *Iron and steel—Methods for inductively coupled plasma atomic emission spectrometry (Amendment 1)*

JIS G 4801 *Spring steels*

JIS Z 2201 *Test pieces for tensile test for metallic materials*

JIS Z 2241 *Method of tensile test for metallic materials*

JIS Z 2243 *Brinell hardness test—Test method*

3 Definitions For the main terms used in this Standard the definitions in **JIS G 0202** and **JIS G 0203** apply, and the rest of the terms shall be as follows:

a) **continuous casting** Casting of manufacturing a long and gross steel cast bloom through solidifying a cast of molten steel continuously as pouring.

b) **sequence continuous casting** Continuous casting in which two or more casts are poured successively without any interval.

c) **strand** Generic name of a set of mold, bloom supporting roll, drawing roll and cutting device in continuous casting.

4 Classification Rails shall be classified as given in Table 1.

Table 1 Classification of rails

Rail type	Symbol	Summary	
		Calculated mass (informative) kg/m	Existence of fishing holes
30 kg rail	30A	30.1	With
			Without
37 kg rail	37A	37.2	With
			Without
40 kgN rail	40N	40.9	With
			Without
50 kgN rail	50N	50.4	With
			Without
60 kg rail	60	60.8	With
			Without
50 S rail	50S	51.7	—
70 S rail	70S	69.5	—
80 S rail	80S	79.9	—