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# International Standard



# 5003

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## **Flat bottom railway rails and special rail sections for switches and crossings of non-treated steel — Technical delivery requirements**

*Rails Vignole et profils spéciaux pour aiguillages en acier non traité pour chemins de fer — Spécifications techniques de livraison*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 5003 was developed by Technical Committee ISO/TC 17, *Steel*, and was circulated to the member bodies in August 1977.

It has been approved by the member bodies of the following countries :

Austria	Hungary	Romania
Belgium	India	South Africa, Rep. of
Brazil	Ireland	Spain
Bulgaria	Italy	Switzerland
Canada	Japan	Turkey
Chile	Korea, Dem. P. Rep. of	United Kingdom
Czechoslovakia	Mexico	USSR
Egypt, Arab Rep. of	Netherlands	Yugoslavia
France	Poland	
Germany, F. R.	Portugal	

The member bodies of the following countries expressed disapproval of the document on technical grounds :

Australia  
Sweden  
USA

# Flat bottom railway rails and special rail sections for switches and crossings of non-treated steel — Technical delivery requirements

## 1 Scope and field of application

This International Standard specifies the requirements for the quality and the conditions of acceptance for flat bottom railway rails and special rail sections for railway switches and crossings<sup>1)</sup>. It applies to flat bottom rails of non-treated steel with a linear mass of 35 kg/m or more and to special sections used in association with these flat bottom rails.

NOTE — 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 specification.

## 2 References

ISO/R 79, *Brinell hardness test for steel*.

ISO 82, *Steel — Tensile testing*.

## 3 Conditions of manufacture

### 3.1 Steelmaking process

The steelmaking process shall be at the manufacturer's option. However, the purchaser may request the manufacturer to state, in his tender, the nature and principal characteristics of the process used; the manufacturer shall not alter these without informing the purchaser's representative.

### 3.2 Master templates and working gauges

The standard section of the rail and all master templates and working gauges required for particular tests shall be provided by the manufacturer, at his own expense, and shall be submitted, for approval, to the purchaser.

Before manufacture, the manufacturer shall submit two sets of master templates, male and female, conforming to the theoretical outline of the rail section to be manufactured, together with two sets of go and no go limit working gauges incorporating the tolerances on the specified dimensions. The master template and, if required, the working gauges shall be stamped after approval by the purchaser's representative. One set of the master templates and working gauges shall remain in the possession of the receiving inspector for the period of acceptance testing.

Only these master templates and working gauges shall be valid for checking purposes.

When the standard rail sections, the master templates and the working gauges have been approved by a purchaser, or by an outside testing agency, these shall be used for the requirements of other purchasers wherever possible.

### 3.3 Manufacture of the rails

Throughout the production process the manufacturer shall use the best techniques available so that the rails meet the requirements of this specification. Continuously cast blooms may be used in addition to blooms made from ingots.

Precautions shall be taken to avoid the occurrence of hydrogen flakes in steel grades which are susceptible to this defect.

If requested, the manufacturer shall inform the purchaser of the procedure used in order to avoid the presence of hydrogen flakes in rails of the grades of steel in question.

### 3.4 Marking

The marks on rails shall be as follows :

#### 3.4.1 Obligatory marking

1) It does not apply, in particular, to grooved rails and check rails.