

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 1005/III

RAILWAY ROLLING STOCK MATERIAL

AXLES FOR TRAILER STOCK

1st EDITION

March 1969

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Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 1005/III, *Railway rolling stock material – Axles for trailer stock*, was drawn up by Technical Committee ISO/TC 17, *Steel*, the Secretariat of which is held by the British Standards Institution (BSI).

Work on this question led, in 1967, to the adoption of a Draft ISO Recommendation based on a corresponding UIC* code.

In January 1968, this Draft ISO Recommendation (No. 1377) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Austria	Hungary	Romania
Belgium	India	South Africa, Rep. of
Canada	Israel	Spain
Colombia	Italy	Sweden
Czechoslovakia	Korea, Rep. of	Switzerland
Denmark	Netherlands	Turkey
Finland	New Zealand	U.A.R.
France	Norway	United Kingdom
Germany	Portugal	Yugoslavia

Three Member Bodies opposed the approval of the Draft :

Brazil
Japan
U.S.A.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in March 1969, to accept it as an ISO RECOMMENDATION.

* Union Internationale des Chemins de Fer (International Union of Railways).

RAILWAY ROLLING STOCK MATERIAL

AXLES FOR TRAILER STOCK

1. SCOPE

This ISO Recommendation applies to the manufacture of axles, rough-forged or rough-rolled, solid or hollow, in non-alloy steel, for trailer stock.

2. CLASSIFICATION

The axles should be supplied in accordance with the instructions on the order :

- (a) normalized*, or
- (b) rough-forged or rough-rolled, or
- (c) oil-hardened and tempered.

3. CHEMICAL COMPOSITION

The axles should be manufactured from non-alloy steel** of the following chemical purity :

phosphorus	$\leq 0.05 \%$
sulphur	$\leq 0.05 \%$
phosphorus + sulphur	$\leq 0.09 \%$

In the case of steel produced by the acid open hearth or electric acid-lined furnace process, the following percentages may be accepted :

phosphorus	$\leq 0.06 \%$
sulphur	$\leq 0.06 \%$

* Normalizing should be understood to mean leaving the part to cool after forging or rolling, until it has reached ambient temperature, then heating it uniformly to a temperature above that of the transformation point, and maintaining it at that temperature for a sufficiently long period, before leaving it to cool in still air sheltered from draughts.

** For this steel, the content of elements other than carbon should not exceed the following limits :

manganese	1.20 %	molybdenum	0.05 %
silicon	0.50 %	vanadium	0.05 %
nickel	0.30 %	copper	0.30 %
chromium	0.30 %		