

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 1005/VII

RAILWAY ROLLING STOCK MATERIAL

WHEEL SETS FOR TRAILER STOCK

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BRIEF HISTORY

The ISO Recommendation R 1005/VII, *Railway rolling stock material – Wheel sets 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 to the adoption of a Draft ISO Recommendation based on a corresponding UIC* code.

In January 1968, this Draft ISO Recommendation (No. 1381) 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	Poland	Yugoslavia

Two Member Bodies opposed the approval of the Draft :

Brazil
Japan

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

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

RAILWAY ROLLING STOCK MATERIAL

WHEEL SETS FOR TRAILER STOCK

1. SCOPE

This ISO Recommendation applies to the supply of wheel sets* for trailer stock (with the exception of railcar-type trailer stock).

It states the conditions for the construction of wheel sets, each component of which is covered by a separate document in this ISO/R 1005 series of Recommendations.

In addition, it states the conditions for acceptance and guarantee.

2. CLASSIFICATION

This ISO Recommendation covers two categories of wheel sets :

- axles whose journals are fitted with plain bearings;
- axles whose journals are fitted with roller bearings.

These two categories differ essentially in the shape of the axle ends. The conditions for acceptance being the same, there is no special designation for distinguishing each class, other than those which may be shown in the contracts prepared by each purchaser.

3. MECHANICAL PROPERTIES

Back pressure. The back pressure should reach, in the case of each wheel, at least

- 1.2 times the actual application pressure, if the operation has been carried out when cold,
- a value, expressed in kilogrammes-force, equal to 600 times the diameter of the seating surface, expressed in millimetres, if the operation has been carried out when hot,

without causing any displacement of the wheel on the axle.

* The term "wheel set" designates the complete unit constituted by the assembly of an axle and two wheels, which unit supports the underframe of a vehicle and permits the movement of the vehicle on the track.

The wheels may be either

- solid wheels in rolled or forged steel, or
- tyred wheels : in this case they should consist of a wheel centre of rolled, forged or cast steel, fitted with a tyre.

4. PHYSICAL PROPERTIES

4.1 Soundness of tyreing (in the case of tyred wheels)

The wheel assembly should give a clear ring when struck with a hammer.

4.2 Balance

The purchaser should specify one of the following two characteristics :

4.2.1 *Static balance.* The out-of-balance should be less than 0.250 m.kgf.*

4.2.2 *Dynamic balance.* The maximum out-of-balance, and the method to be adopted for its measurement, depending on the use for which the axles are intended, should be stated on the order.

4.3 Electrical resistance

The electrical resistance of the wheel set should not exceed 0.01 Ω .

4.4 Surface condition of the journals

When specified on the order, the cylindrical surfaces of the journals should be roller burnished.

5. DIMENSIONAL CHARACTERISTICS

The wheel set should comply with the information shown on the standards or drawings for the dimensions and the dimensional tolerances, the running tread thickness being kept as great as possible.

When the dimensional tolerances are not stated in the standards or drawings, the tolerances given in the Annex to this ISO Recommendation should apply.

In addition, the running surface should reveal only slight traces of machining.

6. IDENTIFYING MARKS

The component parts of the wheel sets should bear the identifying marks shown on the particular drawings of each purchaser. In addition, the wheel set should be stamped with the marks necessary, in order to identify

- its type,
- its number,
- the purchaser,
- the date of construction or of entry into service (number of the month and last two figures of the year).

Example : U2R – 4561 – S.N.C.F. – 9.69

These identifying marks should be stamped on the ends of the axle, in characters of similar dimensions to those of the brands on the axle itself.

When, in very exceptional cases, there is insufficient room on the ends of the axles (in the case of roller-bearing axles), the brands should be stamped on a steel sheet collar placed around the body of the axle, and the ends of the collar should be riveted or welded together.

In the case of tyred wheels, the following marks should also be stamped near the identifying marks on the tyres :

- date of tyreing;
- the brand of the particular workshop or factory having carried out the tyreing operation.

* In the case of certain special stock, the order may specify a maximum out-of-balance value less than that given above.