
INTERNATIONAL STANDARD**1103**

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revised

Caravans and light trailers — Coupling ball*Caravanes et remorques légères — Attelage à boule*

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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 1103 was drawn up by Technical Committee ISO/TC 22, *Road vehicles*, and circulated to the Member Bodies in March 1974.

It has been approved by the Member Bodies of the following countries:

Australia	Germany	Romania
Austria	Hungary	South Africa, Rep. of
Belgium	Iran	Spain
Brazil	Ireland	Sweden
Bulgaria	Italy	Switzerland
Chile	Japan	Thailand
Czechoslovakia	New Zealand	Turkey
Finland	Poland	United Kingdom
France	Portugal	Yugoslavia

The Member Bodies of the following countries expressed disapproval of the document on technical grounds:

Netherlands
U.S.A.

This International Standard cancels and replaces ISO Recommendation R 1103-1969, of which it constitutes a technical revision.

Caravans and light trailers – Coupling ball

1 SCOPE

This International Standard lays down the dimensions and tolerances of a coupling ball for the mechanical connection between caravans, light trailers and their towing vehicles and also the installation dimensions to facilitate interchangeability.

The fixing of the coupling ball to the towing vehicle and the strength of the relevant fittings are not included in this International Standard.

2 FIELD OF APPLICATION

This International Standard applies to a coupling ball designed for caravans and light trailers, the maximum total weight of which is less than or equal to 3,5 tonnes¹⁾. It does not necessarily apply to special trailers drawn by special vehicles.

The reference "ISO 50" given in 3.1.5 shall be marked only on balls capable of towing caravans and light trailers of 3,5 tonnes maximum total weight.

3 INTERCHANGEABILITY DIMENSIONS

3.1 Dimensions and tolerances (see figure 1).

3.1.1 The diameter of the spherical surface of the coupling ball is 50 mm, tolerance h13.

3.1.2 The surface referred to in 3.1.1 is a partial sphere, the upper portion of which terminates above the centre O of the sphere in a flat horizontal surface. The diameter of this surface is 18 ± 1 mm.

The lower portion of the sphere terminates at the intersection of the surface defined above and the horizontal plane located not less than 15 mm below point O.

3.1.3 The connecting radius between the ball and the neck should be tangent both to the neck and to the lower horizontal surface as defined in 3.1.2.

3.1.4 The diameter of the neck of the ball shall be between 27 and 29 mm, down to a horizontal plane situated at not less than 32 mm below point O.

3.1.5 On the flat upper surface of the ball, referred to in 3.1.2, the mark "ISO 50" should be applied.

3.2 Installation dimensions

3.2.1 The axis of the ball neck passes through the ball centre O, and shall be vertical down to a horizontal plane located not less than 32 mm below point O.

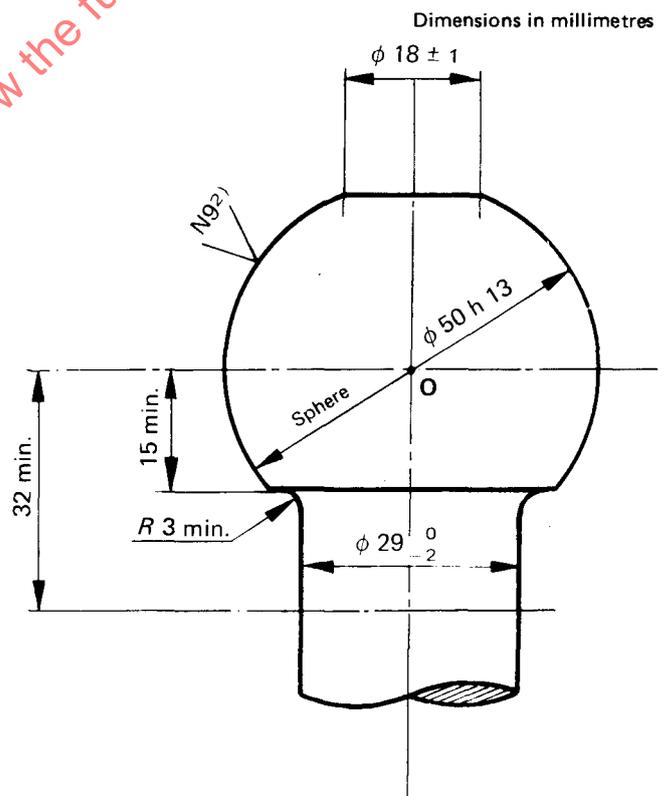


FIGURE 1 – Dimensions and tolerances of the coupling ball

1) This value is chosen to include categories 01 and 02 of trailers according to the classification of vehicles given in document E/ECE/324/Rev. 1/Add. 12 of the Economic Commission for Europe of the United Nations.

This document is entitled : Agreement concerning the adoption of uniform conditions of approval and reciprocal recognition of approval for motor vehicle equipment and parts – done at GENEVA on 20 March 1958 – Addendum 12 : Regulation No. 13 to be annexed to the Agreement : Uniform provisions concerning the approval of vehicles with regard to braking.

2) See ISO/R 468 and ISO 1302; the roughness number N9 refers to an R_a value of $6,3 \mu\text{m}$.