INTERNATIONAL STANDARD ISO 2175

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Industrial wheels — Dimensions and nominal load capacities

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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 2175 was drawn up by Technical Committee ISO/TC 110, *Industrial trucks*.

It was approved in July 1971 by the Member Bodies of the following countries :

Australia	Ireland	South Africa, Rep. of
Austria	Israel	Spain
Belgium	Korea, Rep. of	Sweden
Czechoslovakia	Netherlands	Switzerland
Egypt, Arab Rep. of	New Zealand	Thailand
France	Poland	Turkey
India	Romania	United Kingdom

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

Germany
U.S.A.

Printed in Switzerland

Industrial wheels — Dimensions and nominal load capacities

1 SCOPE

This International Standard specifies the dimensions and nominal load capacities of industrial wheels which are classed in four categories (see section 5).

2 FIELD OF APPLICATION

This International Standard applies to industrial wheels used for non-powered equipment [1].

It does not cover wheels used for furniture and toys.

3 REFERENCE

ISO/R 3, *Preferred numbers — Series of preferred numbers.*

4 DEFINITION

nominal load capacity: The maximum permissible loading in use, to which an industrial wheel may be subjected on a horizontal, even, hard and non-deformable ground surface on which there are no obstructions, at a speed of 6 km/h and at a temperature of 20 °C.

5 CLASSIFICATION

The wheels are classed in four categories: A, B, C, D. They define four increasing values of the nominal load capacity for the main dimensions (hub diameter and length) of the wheels, taking the material of the tread, its dimensions and the operating conditions into account.

Example : for the wheel 200 mm in diameter, 60 mm hub length, the categories A, B, C, D define the following nominal load capacities:

Category	A	B	C	D
Nominal load capacity, kg	160	250	400	630

1) *Subject to conditions in individual countries, the maximum speed of this equipment is limited to 25 km/h.*

6 SPECIFICATIONS

6.1 Selection of standardized characteristics

The standardization applies to the following characteristics:

1) diameter of wheel;

2) hub length;

3) bore according to the type of mounting (journal mounting or axle mounting);

4) nominal load capacity.

The correspondence between these characteristics is given in the table on page 3.

6.2 Dimensions

6.2.1 *Diameters of wheels*

The diameters are selected from the R 10 series of preferred numbers given in ISO/R 3 (rounding the preferred number 315 to 300) with the addition of the preferred number 355, from the R 20 series, rounded to 350, these values being taken according to current manufacturing practice. For the same reason 150 is admitted as an alternative to the preferred number 160.

6.2.2 *Hub lengths*

6.2.2.1 Five hub lengths L have been provided:

30 45 60 90 120 mm.

6.2.2.2 If the wheel includes washers or seals located within the hub, they must not protrude outside the hub.

6.2.2.3 When the wheels must be axle mounted, the hub length must be selected so that this length, increased by the length of any spacers, is larger than the overall width of the rim or of the tyre. The minimum value of symmetrical excess is to be equal to 5 % of the hub length.

6.2.3 *Bores*

6.2.3.1 The wheel bore is the nominal diameter d of the hole machined in the hub or nominal inner diameter of the bearing(s) to receive the axle.

6.2.3.2 Nine bores have been provided:

10 12 20 25 30 – 35 40 50 – 60 mm.

(See Z.1 in the Appendix.)

6.2.4 *Tolerances*

6.2.4.1 Tolerances on the diameter D:

$^{+2}_{0}$ mm for the diameters 50 63 80 – 100 mm.

$^{+2}_{0}$ % for the diameters greater than 100 mm.

6.2.4.2 Tolerances on the hub length L:

$^{0}_{2}$ mm for the lengths 30 45 – 60 – 90 mm

$^{0}_{4}$ mm for the length 120 mm.

6.3 Nominal load capacities

The nominal load capacities have been selected from the R 10 series of preferred numbers given in ISO/R 3. (See Z.2 in the Appendix.)

7 DETERMINATION OF THE CATEGORY AND SELECTION OF A WHEEL

7.1 Determination of the category

When the nominal load capacity mentioned by the manufacturer falls between the nominal load capacities of two consecutive categories, the wheel is classified in the lower category.

The choice of the material and of dimensions other than those fixed for each wheel by the table is left to the manufacturer, who will have to make sure that the resulting wheel can satisfy the requirements for acceptance. (See section 8.)

7.2 *Selection of a wheel*

The loads on the wheels of a truck may be determined in advance by considering the useful load and assuming that the dead weight of the truck itself might reach up to 25 % of the useful load, the total load being equally distributed on the wheels.

Example: Load per wheel for a 4-wheel truck having a useful load of 800 kg

$$\frac{800 + 1.25}{4} = 250 \text{ kg}$$

When the load calculated either in this manner or by taking into account the actual dead weight and the precise distribution of the loads on the wheels does not correspond to one of the loads mentioned in the table, it is necessary to use a wheel intended for the next higher nominal load capacity.

8 REQUIREMENTS FOR ACCEPTANCE

The wheels shall be able to carry an overload of 50 % of the nominal load capacity on a run corresponding to 100 revolutions of the wheel under the conditions specified in section 4.