भारतीय मानक

Indian Standard

IS 8005 : 2024
ISO 3569 : 1976

सतत यांत्रिक हैंडलिंग उपकरण — यूनिट भार का वर्गीकरण

(पहला पुनरीक्षण)

Continuous Mechanical Handling Equipment — Classification of Unit Loads

(First Revision)

ICS 53.040.01

भारतीय मानक ब्यूरो
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September 2024 **Price Group 4**

Transport Packages, Packaging Codes and Pallets Sectional Committee, TED 24

NATIONAL FOREWORD

This Indian Standard (First Revision) which is identical to ISO 3569 : 1976 ‘Continuous mechanical handling equipment — Classification of unit loads’ issued by International Organization for Standardization (ISO), was adopted by the Bureau of Indian Standards on the recommendations of Transport Packages, Packaging Codes and Pallets Sectional Committee and approval of the Transport Engineering Division Council.

This standard was first published in 1976. This revision is brought out to align it with the latest version of ISO 3569 : 1976. The title of IS 8005 has also been aligned with ISO 3569 : 1976.

The text of ISO standard has been approved as suitable for publication as an Indian Standard without deviations. Certain terminologies and conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words ‘International Standard’ appear referring to this standard, they should be read as ‘Indian Standard’; and

b) Comma (,) has been used as a decimal marker, while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

Attention is drawn to the possibility that some of the elements of this standard may be the subject of patent rights. The Bureau of Indian Standards shall not be held responsible for identifying any or all such patent rights.

Indian Standard

CONTINUOUS MECHANICAL HANDLING EQUIPMENT — CLASSIFICATION OF UNIT LOADS

(First Revision)

1 SCOPE AND FIELD OF APPLICATION

This International Standard establishes the classification and symbolization of unit loads for continuous mechanical handling. These loads are classified according to their shape, mass, volume, material, base area, physical and chemical properties, sensitivity and other influences.

2 DEFINITION

unit loads : Objects which, when transported, are considered as units, whatever their shape or mass.

It is therefore usual to consider also as unit loads :

– containers or tanks for bulk materials (liquid or gaseous);

– cargo units made up with different unit loads (strapped, wrapped or bundled, covered with a shrink-on wrapper, tied down with netting, packed on pallets, etc.);

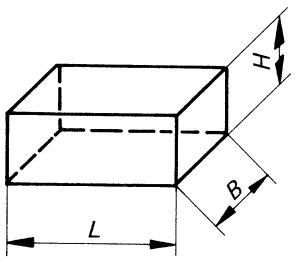
– packed bulk materials.

NOTE – It may be advisable to produce an plan of the cargo unit considered.

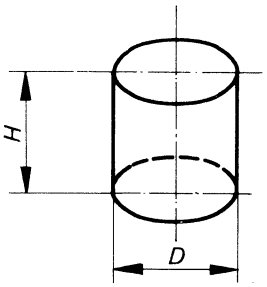
3 CLASSIFICATION ACCORDING TO SHAPE

3.1 Geometric shapes

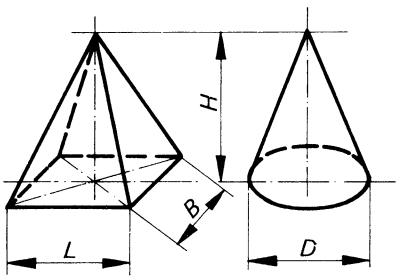
3.1.1 *Parallelepiped, cubic* (for example : parcels, cases, containers, sheets, bars)



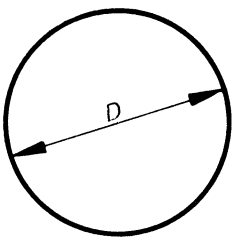
3.1.2 *Cylindrical* (for example : casks, disks, drums, round bars)



3.1.3 *Pyramidal, conical*

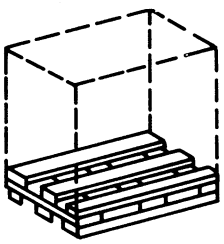


3.1.4 *Spherical*

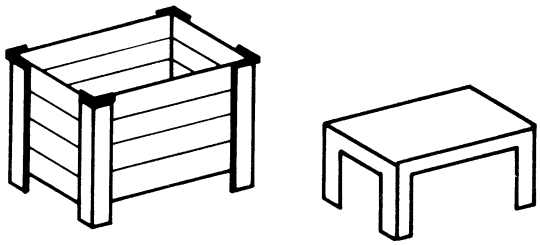


3.2 Typical or usual shapes of loads

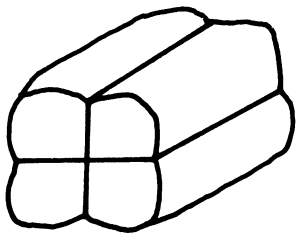
3.2.1 *Pallets* (special shape of 3.1.1)



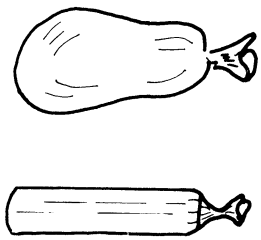
3.2.2 *Platform containers, box-pallets on feet*



3.2.3 *Bales*

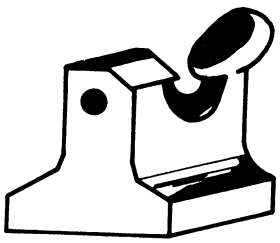


3.2.4 *Sacks*

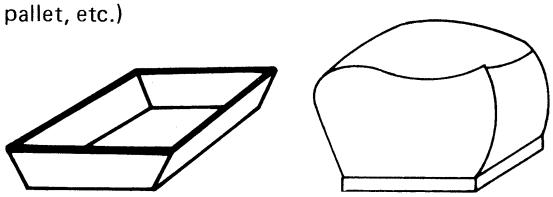


3.3 Irregular shapes

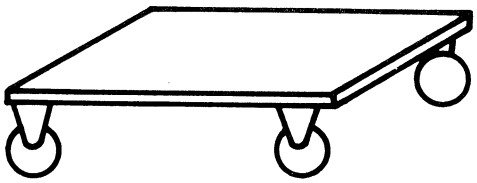
3.3.1 *Irregular shape with flat base* (for example : machined pieces, assembly units with regular base area)



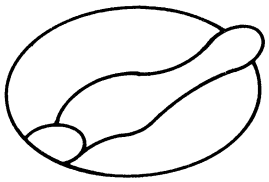
3.3.2 *Unit loads with a flat base area the dimensions of which are less than the overall dimensions* (for example : conical tanks with projecting side parts such as handles, rims, etc., or conveyed product wider than the container or pallet, etc.)



3.3.3 *Unit loads on wheels, rollers, or similar* (for example : vehicles, pallets on rollers, etc.)



3.3.4 *Irregular and uneven*



3.4 Other shapes

4 CLASSIFICATION ACCORDING TO POSITION AND CENTRE OF GRAVITY (STABILITY) OF THE LOAD

4.1 Position of the load in relation to the direction of transportation

4.1.1 L : parallel

4.1.2 L : perpendicular

4.1.3 L : angled

L = length = overall dimension of base surface

B = width = overall dimension of base surface perpendicular to the longitudinal axis

H = height = overall dimension above base

m = mass

4.2 Position of the centre of gravity in relation to the base of the load

4.2.1 $s \leqslant B/2$

4.2.2 $s > B/2$

4.2.3 $s > L/2$

} mention if possible the tilting angle

4.2.4 The centre of gravity does not coincide with the intersection of diagonals

4.2.5 The centre of gravity can move (for example, tanks containing liquid, dry sand, etc.)

5 CLASSIFICATION ACCORDING TO MASS PER UNIT

5.1	$0 < m \leqslant$	2,5 kg
5.2	$2,5 < m \leqslant$	20 kg
5.3	$20 < m \leqslant$	50 kg
5.4	$50 < m \leqslant$	125 kg
5.5	$125 < m \leqslant$	500 kg
5.6	$500 < m \leqslant$	1 500 kg
5.7	$1\,500 < m \leqslant$	5 000 kg
5.8	$m >$	5 000 kg

6 CLASSIFICATION ACCORDING TO VOLUME PER UNIT

6.1	$0 < V \leqslant$	10 cm^3
6.2	$10 < V \leqslant$	100 cm^3
6.3	$100 < V \leqslant$	1 000 cm^3
6.4	$1 < V \leqslant$	10 dm^3
6.5	$10 < V \leqslant$	100 dm^3
6.6	$100 < V \leqslant$	1 000 dm^3
6.7	$1 < V \leqslant$	10 m^3
6.8	$V >$	10 m^3

7 TYPE OF MATERIAL IN CONTACT WITH CONVEYING SYSTEM

7.1 Metal

7.2 Wood

7.3 Paper, cardboard

7.4 Textiles

7.5 Rubber, synthetic materials or similar

7.6 Glass, porcelain, ceramics or similar

7.7 Other materials

8 SHAPE AND PROPERTIES OF THE BASE AREA OF THE LOAD

8.1 Geometric shape of the base area

8.1.1 Flat

8.1.2 Rounded concave

8.1.3 Rounded, convex

8.1.4 Warped, dented, irregular, uneven

8.1.5 With circular rim

8.1.6 With grooves, ribs, mouldings, parallel

8.1.7 With grooves, ribs, mouldings, perpendicular

8.1.8 With grooves, ribs, mouldings, oblique

} to the direction of travel

8.1.9 With projecting parts : nails, screws, splinters, etc.

8.1.10 Other shapes

8.2 Physical properties of the base area

8.2.1 Smooth, slides easily

8.2.2 Rough, slides with difficulty

8.2.3 Soft, flexible, deformable

8.2.4 Durable, hard, firm, robust, non-deformable

8.2.5 Elastic, rebounding

8.2.6 Other particular properties

9 SPECIFIC PROPERTIES OF UNIT LOADS

9.1 Basically physical properties

9.1.1 Abrasive

9.1.2 Corrosive, aggressive

9.1.3 Dust-emitting

9.1.4 Damp, wet

9.1.5 Greasy, oily

9.1.6 Initial temperature above ambient

9.1.7 Initial temperature below zero

9.1.8 Fragile, disintegrating easily (see 10.1.1 to 10.1.5)

9.1.9 With sharp, pointed, hard edges

9.2 Other properties, for example chemical[1)]

9.2.1 Easily inflammable

9.2.2 Explosive

9.2.3 Hygroscopic

9.2.4 Tacky, sticky

9.2.5 Toxic

9.2.6 Obnoxious smell

9.2.7 Radioactive, radiative

9.2.8 Generates static electricity

9.2.9 Conveyed product modifies during transport (shape, mass, consistency), for example : hardening, drying up, etc.

9.2.10 Other particular properties

10 SENSITIVITY TO EXTERNAL INFLUENCES

10.1 Basically mechanical influences

10.1.1 Pressure

10.1.2 Shock, falling

10.1.3 Shaking

10.1.4 Change of position, overturning, tilting, etc.

10.1.5 Acceleration, deceleration

10.1.6 Draughts

10.2 Other influences

10.2.1 Cold

10.2.2 Heat

10.2.3 Light

10.2.4 Radiation

10.2.5 Damp, water (not resistant to dampness)

10.2.6 Drying up

10.2.7 Impurities, pollution

10.2.8 Ageing, alteration

10.2.9 Other influences

NOTE – A unit load may have a combination of several properties given in the same clause (clauses 7, 8, 9 and 10).

1) This will be reviewed in the light of the classification of dangerous materials (U.N.O.).

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 2016 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the website-www.bis.gov.in or www.standardsbis.in.

This Indian Standard has been developed from Doc No.: TED 24 (23326).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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