INTERNATIONAL STANDARD ISO 3569

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Continuous mechanical handling equipment — Classification of unit loads

Engins de manutention continue — Classification des charges isolées

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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 3569 was drawn up by Technical Committee ISO/TC 101, *Continuous mechanical handling equipment*, and was circulated to the Member Bodies in February 1975.

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

Austria	France	South Africa, Rep. of
Belgium	Germany	Spain
Bulgaria	Ireland	Sweden
Chile	Japan	Turkey
Denmark	Netherlands	United Kingdom
Finland	Romania	Yugoslavia

The Member Body of the following country expressed disapproval of the on technical grounds :

Czechoslovakia

Printed in Switzerland

Continuous mechanical handling equipment — Classification of unit loads

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.);

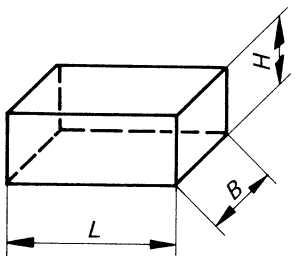
— packed bulk materials.

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

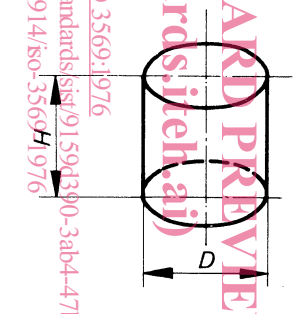
3 CLASSIFICATION ACCORDING TO SHAPE

3.1 Geometric shapes

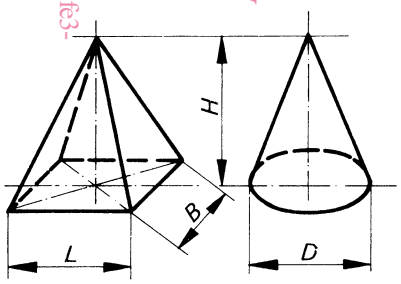
3.1.1 *Parallelepiped, cubic* (for example : parcels, cases, containers, sheets, bars)



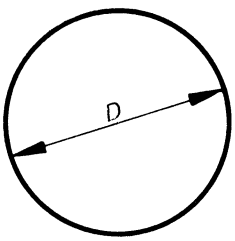
3.1.2 *Cylindrical* (for example : casks, disks, drums, round bars)



3.1.3 *Pyramidal, conical*

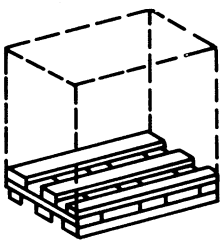


3.1.4 *Spherical*

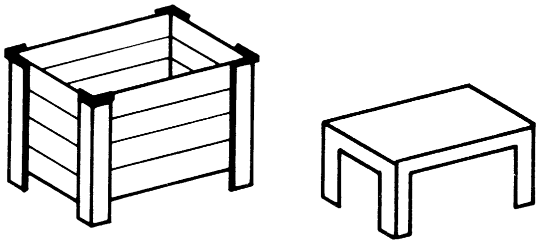


3.2 Typical or usual shapes of loads

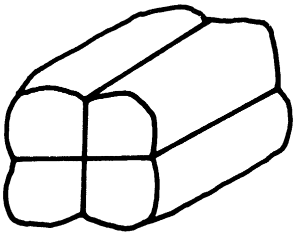
3.2.1 *Pallets* (special shape of 3.1.1)



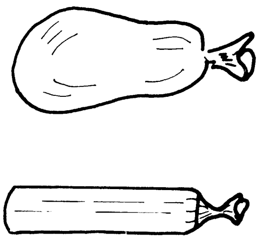
3.2.2 *Platform containers, box-pallets on feet*



3.2.3 *Bales*

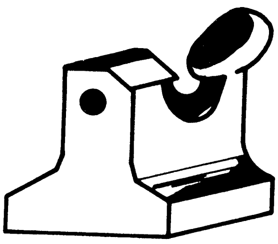


3.2.4 *Sacks*

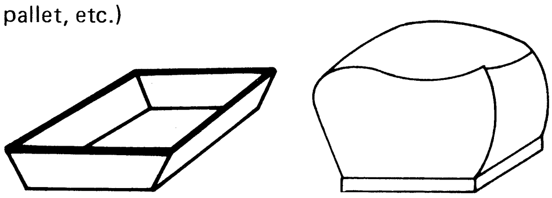


3.3 Irregular shapes

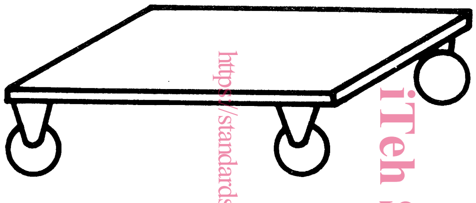
3.3.1 *Irregular shape with flat base* (for example : machined pieces, assembly units with regular base area)



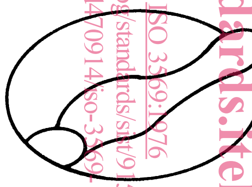
3.3.2 *Unit loads with a flat base area the dimensions of which are less than the overall dimensions* (for example : conical tanks with projecting side parts such as handles, rims, etc., or conveyed product wider than the container or pallet, etc.)



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.).

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