भारतीय मानक
Indian Standard

IS 14208 : 2018
ISO 3676 : 2012

पैकेजबंदी — पूरे, भरित परिवहन पैकेज एवं इकाई लोड — इकाई लोड आयाम

(पहला पुनरीक्षण)

Packaging — Complete, Filled Transport Packages and Unit Loads — Unit Load Dimensions

(First Revision)

ICS 55.020

भारतीय मानक ब्यूरो
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May 2018 **Price Group 3**

NATIONAL FOREWORD

This Indian Standard (First Revision) which is identical with ISO 3676 : 2012 'Packaging — Complete, filled transport packages and unit loads — Unit load dimensions' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on recommendation of the Transport Packages, Packaging Codes, Freight Containers and Pallets Sectional Committee and approval of the Transport Engineering Division Council.

This Indian Standard was originally published in 1995 as adoption of ISO 3676 : 1983. The first revision of this standard has been undertaken to align it with the latest version of ISO 3676 : 2012.

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 Standard. 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'.

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.

In this adopted standard, reference appears to the following International Standard for which Indian Standard also exists. The Corresponding Indian Standard which is to be substituted in its place is listed below along with its degree of equivalence for the edition indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 1496-1 Series 1 freight containers — Specification and testing — Part 1: General cargo containers for general purposes	IS 13288 (Part 1) : 1993 Series 1 freight containers — Specification and testing: Part 1 General cargo containers for general purposes	Identical to ISO 1496-1 : 1990

The technical committee has reviewed the provisions of the following International Standards referred in this adopted standard and has decided that they are acceptable for use in conjunction with this standard.

International Standard/ Other Publication	*Title*
ISO 21067	Packaging — Vocabulary
EN 284	Swap bodies — Non-stackable swap bodies of class C — Dimensions and general requirements
EN 452	Swap bodies — Swap bodies of class A — Dimensions and general requirements
CEN/TS 13853	Swap bodies for combined transport — Stackable swap bodies type C 745-S16 — Dimensions, design requirements and testing
CEN/TS 14993	Swap bodies for combined transport — Stackable swap bodies type A 1371— Dimensions, design requirements and testing

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Introduction

A single overall system based on a common module is unlikely to cover all packaged goods in the world, because of substantial differences in the sizes, shapes, and densities of the products, great variety in handling devices, regional government legislation, etc.

However, the application of such a system is a long-term policy goal, assuming that this does not lead to the exclusion of commodity dimensions and goods which are compatible with the modular system.

A standardized unit-load dimension is intended to prevent inadvertent over-sizing, and thus jamming against internal walls, or under-sizing, and thus wasting cargo vehicle space and/or rendering the load susceptible to transit damage.

Determining acceptable deviations in dimensions of unit loads is a complex matter, since the dimensions of the transport package, and thus the load itself, tend to change during filling, handling, warehousing, and transport. See Figure 1.

One factor affecting the measurement of the unit load is load bulge (filling, compression, and settling bulge). Factors influencing the load bulge are transport package materials, nature of contents, length of time in storage, moisture and temperature conditions, and transit conditions.

Another cause of unit load enlargement is stacking irregularity (unitizing inefficiency, out-of-line stacking, and out-of-square stacking) which occurs frequently and particularly in manual formation of the transport package layers in a unit load.

Such factors, which tend to change the plan dimensions of the unit load, cannot always be avoided but they are to be controlled by providing a dimensional deviation for the standardized unit loads.

When choosing transport package materials and when adding subsequent layers of transport packages to complete the unit load, it is to be ensured that the resulting overall length and width dimensions do not exceed the referenced plan dimensions of the unit load, at any stage of the distribution chain.

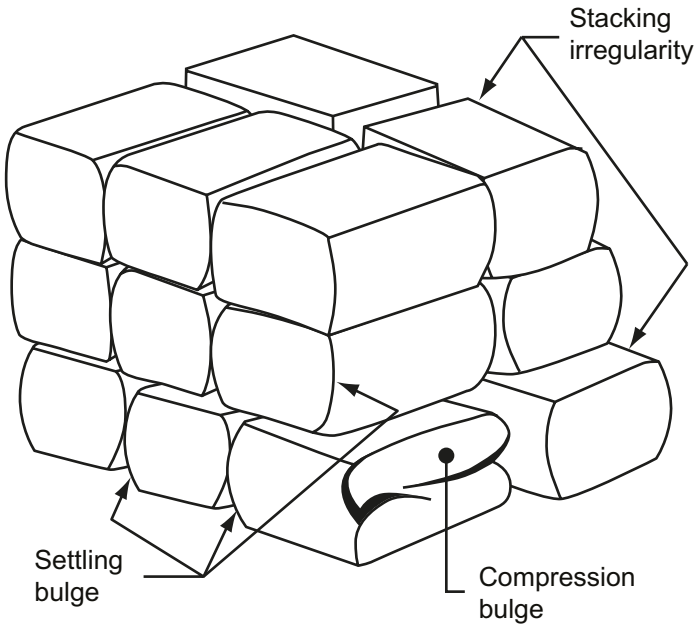

Figure 1 — Dimensional deviations for unit loads

Indian Standard

PACKAGING — COMPLETE, FILLED TRANSPORT PACKAGES AND UNIT LOADS — UNIT LOAD DIMENSIONS

(First Revision)

1 Scope

This International Standard is based on the concept of a modular system and specifies the plan dimensions for unit loads suitable for the distribution of goods, which comprises all activities for the movement of products from their origin to their destination.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1496-1, *Series 1 freight containers — Specification and testing — Part 1: General cargo containers for general purposes*

ISO 21067, *Packaging — Vocabulary*

EN 284, *Swap bodies — Non-stackable swap bodies of class C — Dimensions and general requirements*

EN 452, *Swap bodies — Swap bodies of Class A — Dimensions and general requirements*

CEN/TS 13853, *Swap bodies for combined transport — Stackable swap bodies type C 745-S16 — Dimensions, design requirements and testing*

CEN/TS 14993, *Swap bodies for combined transport — Stackable swap bodies type A 1371 — Dimensions, design requirements and testing*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21067 and the following apply.

3.1
distribution of goods
movement of products from their point of origin to their destination and consisting of the following basic elements: packaging, unit loads, material-handling systems, storage facilities and means of transportation

3.2
system
entity consisting of interdependent components

3.3
modular system
system consisting of components which are related to the module

3.4
plan dimensions
dimensions of the rectangle defined on a horizontal surface by the four vertical planes intersecting at right angles which enclose a unit load free-standing on that surface

NOTE See Figure 2.

3.5
module
reference measurement to which the dimensions of the components of the distribution system can be related arithmetically

3.6
unit load
items or packages held together by one or more means and shaped or fitted for handling, transporting, stacking and storing as a unit

NOTE The term is also used to describe a single large item suitable for the same purpose.

4 Plan dimensions

4.1 Dimensions: 1 200 mm × 1 000 mm

The plan dimensions of the preferred modular unit load shall be 1 200 mm × 1 000 mm. This unit load is derived from the basic 600 mm × 400 mm module, and as such it is an element of the modular distribution system.

4.2 Dimensions: 1 200 mm × 800 mm

This International Standard also recognizes the plan dimensions of 1 200 mm × 800 mm for a unit load.

4.3 Dimensions: 1 100 mm × 1 100 mm

This International Standard also recognizes the plan dimensions of 1 100 mm × 1 100 mm for square unit loads.

4.4 Dimensions: 1 219 mm × 1 016 mm

The International Standard also recognizes the plan dimensions of 1 219 mm × 1 016 mm for a unit load.

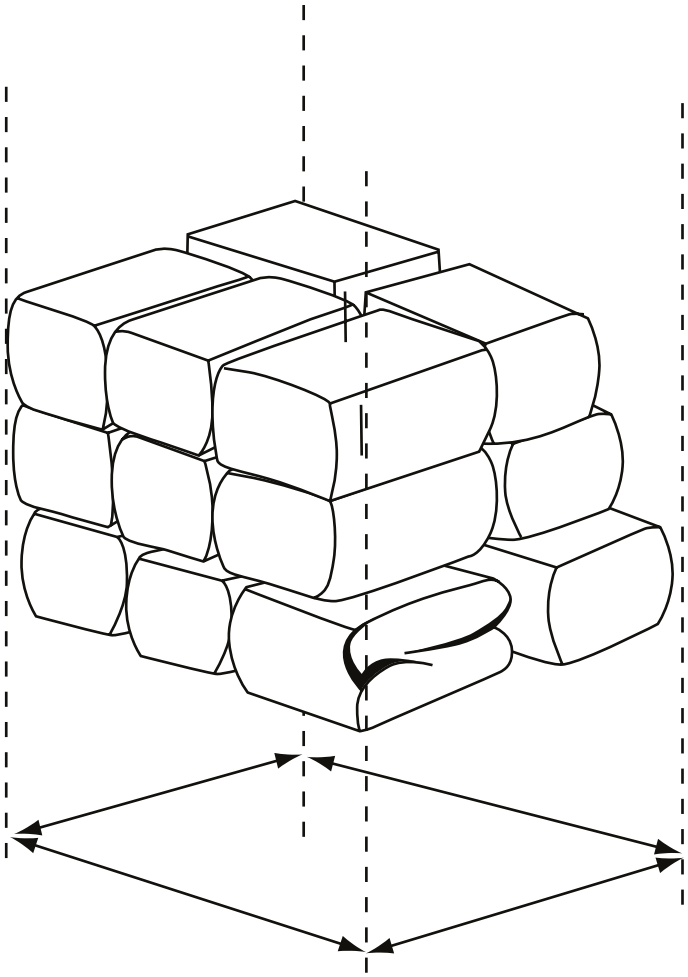

Figure 2 — Plan dimensions

5 Dimensional deviations

5.1 Nominal dimensions

The plan dimensions of the modular unit load outlined in 4.1 and the other two unit loads specified in 4.2, 4.3, and 4.4 are nominal dimensions.

5.2 Maximum dimensions

The permissible maximum dimensions, as the deviation from the nominal dimensions defined in 4.1, 4.2, 4.3, and 4.4, shall be defined considering the width of the road vehicle, freight container, etc.

The permissible maximum dimensions of the unit load shall be based on ISO 1496-1, EN 284, EN 452, CEN/TS 13853 and CEN/TS 14993. See Annex A for an example.

Annex A
(informative)

Example of the way to define the maximum unit load dimensions

A.1 How to define the maximum unit load dimensions

Table A.1 shows how to define the maximum unit load dimensions based on 5.2.

Table A.1 — Example of how to define the maximum unit load dimensions

All units expressed in millimetres

Area using wide type container and road vehicle. For example, the width of container and/or road vehicle is about 2,55 m [a].	Area using ISO series 1 freight container and road vehicle whose width is maximum 2,5 m [b].
Based on EN 284, EN 452, CEN/TS 13853, CEN/ TS 14993.	Based on ISO 1894, which was withdrawn and replaced by ISO 1496-1.
1 200 × 1 000 1 200 × 800	1 240 × 1 040 [c] 1 140 × 1 140

[a] The area is assumed to use the containers and road vehicles, in order to put the unit load of 1 200 mm inside in parallel.

[b] The area is assumed to use the ISO series 1 freight containers and road vehicles. The total width of the unit loads, which were put in two lines inside of the series 1 freight container, is 2 280 mm (i.e. work allowance is 50 mm), in order to fit the minimum inside width of 2 330 mm of an ISO series 1 freight container.

[c] It is assumed that 1 240 mm and 1 040 mm are combined and equal to 2 280 mm and loaded inside of the container and road vehicle. It is necessary to set the maximum dimension of 1 200 mm × 1 000 mm when unit loads are transported to areas using wide type containers and road vehicles.

Bibliography

[1] ISO 1894[1)], *General purpose series 1 freight containers — Minimum internal dimensions*

[2] ISO 3394, *Packaging — Completed, filled transport packages and unit loads — Dimensions of rigid rectangular packages*

[3] ISO 6780, *Flat pallets for intercontinental materials handling — Principal dimensions and tolerances*

1) Withdrawn and replaced by ISO 1496-1:1990.

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 latest issue of 'BIS Catalogue' and 'Standards: Monthly Additions'.

This Indian Standard has been developed from Doc No.: TED 24 (1037).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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Published by BIS, New Delhi