INTERNATIONAL STANDARD

ISO 1496-4

> First edition 1991-12-15

Series 1 freight containers — Specification and testing —

Part 4: Non-pressurized containers for dry bulk

Conteneurs de la série 1 — Spécifications et essais — Partie 4: Conteneurs non pressurisés pour produits solides en vrac



Reference number ISO 1496-4:1991(E)

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International Organization for Standardization Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standard podies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, govern-mental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the international Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 3% of the member bodies casting a vote.

International Standard ISO 1496-4 was prepared by Technical Committee ISO/TC 104, Freight containers, Sub-Committee SC 2, Specific purpose containers.

ISO 1496 consists of the following parts, under the general his Series 1 freight containers — Specification and testing:

- Part 1: General cargo containers for general purposes
- Part 2: Thermal containers
- Part 3: Tank containers for liquids, gases and pressurized dry bulk
- Part 4: Non-pressurized containers for dry bulk
- Part 5: Platform and platform-based containers
- Part 6: International cargo-security devices

tated by FLY. Annexes A, B, C, D and E form an integral part of this part of ISO 1496. Annexes F and G are for information only.

7.	Introduction	
1500	The following grouping of container types is used for specific poses in ISO 1496:	ication pur-
OC,	Part 1	
C/S	General purpose	00 to 09
2	Specific purpose	
C	closed, vented/ventilated	10 to 19
	open top	50 to 59
	J.	
	Part	
	Thermal	30 to 49
	Part 3	
	Tank	70 to 79
	Dry bulk, pressurized	85 to 89
	Part 4	
	Bulk, non-pressurized thox type)	20 to 24
	Buik, non-pressurized (ropper type)	80 to 84
	Part 5	
	Platform (container)	60
	Platform-based with incomplete superstructure and fixed ends	61 and 62
	Platform-based with incomplete superstructure and folding ends	63 and 64
	Platform-based with complete superstructure	65 to 69
	NOTE 1 Containers types 90 to 99 are reserved for air/surface con ISO 8323).	itainers (see

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Series 1 freight containers — Specification and testing —

Part 4: Non-pressurized containers for dry bulk

1 Scope

1.1 This part of ISO 1496 specifies the basic specifications and testing requirements for ISO to be a freight containers of the dry bulk container propressurized type which are suitable for international exchange and for conveyance by road, rail and seal including interchange between these forms of transport.

1.2 As the density and flow characteristics of dry bulk cargoes vary widely, containers complying with this part of ISO 1496 are not expected to be suitable for the carriage of all such cargoes. Therefore, except where otherwise stated, the requirements of this International Standard are minimum requirements.

Containers to be used for the carriage of dangerous goods may be subject to additional international and national requirements as applied by competent authorities.

1.3 The container types covered by this part of ISO 1496 are given in table 1.

1.4 The marking requirements for these containers shall be in accordance with the principles embodied in ISO 6346.

NOTE 2 Some types of freight containers constructed in accordance with ISO 1496-1 may satisfactorily be used for the transport of certain non-packed dry bulk solids. Where such containers are used for this purpose, it is essential that care be taken to ensure that the design loadings are not exceeded under operating conditions.

Table 1 –	Container	types
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T	Type code designation ¹⁾	
туре	Box types	Hopper types
Dry bulk non- pressurized,		
closed	20	80
vented	21	81
ventilated	22	82
airtight	23	83
[spare]	24	84
1) maccordance with	n ISO 6346.	<u> </u>

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 1496. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 1496 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 668:1988, Series 1 freight containers — Classification, dimensions and ratings.

ISO 830:1981, *Freight containers* — *Terminology*, and its amendments: ISO 830:1981/Amd.1:1984 and ISO 830:1981/Amd.2:1988.

ISO 1161:1984, Series 1 freight containers — Corner fittings — Specification.

ISO 6346:1984, *Freight containers* — *Coding, identification and marking,* and its amendment: ISO 6346:1984/Amd.1:1988.

3 Definitions

For the purposes of this part of ISO 1496, the definitions given in ISO 830, together with the following, apply. However, for practical reasons, certain definitions taken and adapted from ISO 830 are given below.

3.1 non-pressurized dry bulk container: Container for the transport of dry bulk solids, capable of withstanding the loads resulting from filling, transport motions and discharging of non-packaged dry bulk solids, having filling and discharge apertures and fittings and complying with the requirements of this part of ISO 1496.

3.1.1 box type: Dry bulk non-pressurized container for tipping discharge having a parallelepiper cargo space and a door opening at least at one end, which therefore may also be used as a general-purpose freight container.

3.1.2 hopper type: Dry bulk non-pressurized container for horizontal discharge having no door opening, which therefore may not be used as a general-purpose freight container.

NOTE 3 For the sake of simplicity, dry bulk containers will be referred to as containers in this part of ISO 1496.

3.2 dry bulk solids: Assemblies of separate solid particles normally substantially in contact with one another which are, or which may be rendered, capable of fluid flow.

3.3 openings for cargo loading: Openings provided in a container for the filling of dry bulk solids.

3.4 openings for cargo discharging: Openings provided in a container for the discharge of dry bulk solids.

3.5 interface for external fumigation device: Point(s) at which the connection between the container and any external fumigation device is connected or disconnected.

3.6 dangerous goods: Those substances classified as dangerous by the United Nations committee of experts on the transport of dangerous goods or by the competent authority as defined in 3.7.

3.7 competent authority: The authority or authorities designated as such in each country or in each specified case by the governments concerned, for the approval of dry bulk containers.

3.8 bulk density: The mass per unit volume of a dry bulk solid measured when the dry bulk solid is in a loose or non-compacted condition.

3.9 cargo space: The space bounded by the container walls or shell when all apertures are closed.

4 Dimensions and ratings

4.1 External dimensions

The overall external dimensions and tolerances of the freight containers covered by this part of ISO 1496 shall be those establised in ISO 668, except that containers may be of reduced height, in which case they shall be designated 1AX, 1BX, 1CX and 1DX. No part of the container, its associated fittings and/or equipment shall project beyond these specified overall external dimensions.

4.2 Internal dimensions

Internal dimensions of containers shall be as large as possible but, in any case, 1AA, 1A, 1BB, 1B, 1CC, 1C and 1D box type containers (type code 20 to 24) shall have a minimum internal width of 2 330 mm¹⁾. This dimension applies when measured at a temperature of 20 °C (68 °F). Measurements taken at other temperatures shall be adjusted accordingly.



The values of the rating R, the maximum gross mass of the container shall be those specified in ISO 668. However, taking account of the high density of many fluid cargoes, the values of the rating R chosen for the design and testing of 1BB, 1B, 1CC and 1C tank containers may be higher than those specified in ISO 668. For all containers in operation, such values shall in no case exceed the rating allowed for 1AA and 1A containers in ISO 669.



5.1 General

All containers shall be capable of fulfilling the following requirements.

5.1.1 The strength requirements for containers are given in diagrammatic form in annex A (these requirements are applicable to all containers as complete units except where otherwise stated).

^{1) 2 330} mm = 91 3/4 in