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Series 1 freight containers — Specification and testing —

Part 4: Non-pressurized containers for dry bulk

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (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, governmental 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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 104, *Freight containers*, Subcommittee SC 2, *Specific purpose containers*.

This second edition cancels and replaces the first edition (ISO 1496-4:1991), which has been technically revised. It also incorporates the Amendment(s) ISO 1496-4:1991/Amd 1:1994.

The main changes are as follows:

— ensure that the main structural tests are consistent with those described in ISO 1496-1;

— introduce testing for box-type bulk containers with bottom discharge;

— reflect the forces on end and side walls when the freight container is being discharged by tipping or rotating;

— ensure that the freight container can operate correctly and safely when fully packed with a bulk cargo.

A list of all parts in the ISO 1496 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

This document replaces the first edition published in 1991 and brings it into line with other parts of this document including Part 1 which provides information on those tests that are consistent for all freight containers.

Freight containers built to transport non-pressurised bulk cargos are considered to be special and therefore not produced in large numbers, and often, freight containers built to meet the requirements of ISO 1496-1 are used in their place. However, when the bulk cargo is classified as a dangerous cargo as identified in the United Nations' Recommendations on the Transport of Dangerous Goods - Model Regulations,[2] such cargoes must be transported in a bulk container as described in 6.8 of those regulations.

A freight container built and tested according to this document are deemed to meet with the requirements for a BK1 or a BK2 bulk container as described in the Recommendations on the transport of Dangerous Goods – Model Regulations.[2] To fully meet these requirements the container will need to be:

— rendered siftproof, either by design or by the addition of a siftproof liner,

— fitted with suitable securing means for service equipment required for packing and unpacking.

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

Freight containers constructed in accordance with ISO 1496-1 may be used for the transport certain non-packed dry bulk solids only if the end walls are strengthened to meet the test requirements of this document and care be taken to ensure that the design loadings are shall not exceeded under operating conditions.

Bulk cargoes that comprise of large particles that have a density greater than 1 200 kg/m^3 and/or are angular can damage the floor structure if dropped from the height of the roof or higher. Such cargoes require additional strengthening to the floor and/or base structure.

The forces involved with packing dry bulk containers are associated with the container being fully horizontal or inclined to a certain degree as stated in the IMO / ILO / UN ECE Code of Practice for packing cargo transport units (CTU Code).[3] Containers tested to this document are not designed for packing with the rear end significantly inclined or at 90° to the horizontal.

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

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Series 1 freight containers — Specification and testing —

Part 4: Non-pressurized containers for dry bulk

1 Scope

This document specifies the basic specifications and testing requirements for series 1 freight containers of the dry bulk container non-pressurized type which are suitable for international exchange and for conveyance by road, rail and sea, including interchange between these forms of transport.

As the density and flow characteristics of dry bulk cargoes vary widely, containers conforming to this document are not expected to be suitable for the carriage of all such cargoes. Therefore, except where otherwise stated, the requirements of this document are minimum requirements.

The container types covered by this document are given in Table 1.

This document does not apply to BK3 flexible bulk containers.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 668:2020, *Series 1 freight containers — Classification, dimensions and ratings*

ISO 830[1)], *Freight containers — Vocabulary*

ISO 1161, *Series 1 freight containers — Corner and intermediate fittings — Specifications*

ISO 1496-1:2013/Amd 1:2016, *Series 1 freight containers — Specification and testing — Part 1: General cargo containers for general purposes*

ISO 6346, *Freight containers — Coding, identification and marking*

ISO 17712, *Freight containers — Mechanical seals*

EN 13374, *Temporary edge protection*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 830 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

1) Under preparation. Stage at the time of publication: ISO/DIS 830:2023.

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