International Standard

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AMENDMENT 2
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Series 1 freight containers — Specification and testing —

Part 1: General cargo containers for general purposes

AMENDMENT 2

Conteneurs de la série 1 — Spécifications et essais —

Partie 1: Conteneurs d'usage général pour marchandises diverses

AMENDEMENT 2

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This document was prepared by Technical Committee ISO/TC 104, *Freight containers*, Subcommittee SC 1, *General purpose containers*.

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

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Series 1 freight containers — Specification and testing —

Part 1:
General cargo containers for general purposes

AMENDMENT 2

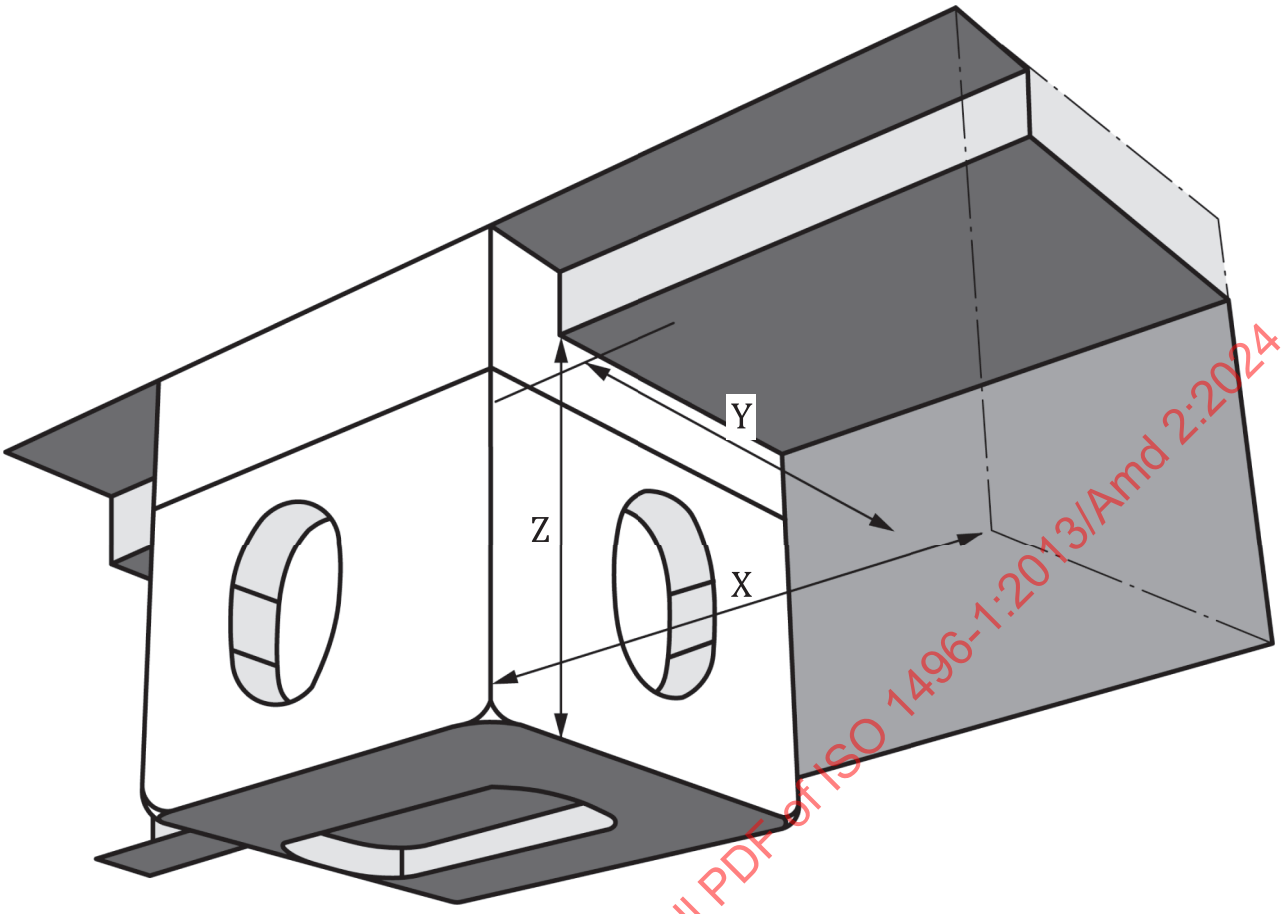
5.3.6

Replace with the following:

1EEE and 1EE units shall have recesses longitudinally outboard of each of their fittings in the 1AAA/1AA/1A positions. These recesses shall extend vertically to permit full access to the outboard aperture of the fittings in the 1AAA/1AA/1A position, shall extend longitudinally from the longitudinal outward faces of the fittings in the 1AAA/1AA/1A position outboard, to not less than 150 mm from the outboard face of the fittings in the 1AAA/1AA/1A position and shall extend laterally from the external width of the container inboard not less than 154 mm.

Figure 1

Replace with the following:



Key

X longitudinal (outboard) ≥ 150 mm

Y laterally ≥ 154 mm

Z vertical – shall allow full access to the aperture

Figure 1 — Lower intermediate fitting recess for a 45-foot container

6.9.1

Replace with the following:

6.9.1 General

This test shall be carried out in accordance with Annex E to simulate and prove the ability of a container floor (floorboards and understructure) to withstand the concentrated dynamic loading imposed during cargo operations involving powered industrial trucks or similar devices.

Floorboards manufactured to meet ISO container flooring requirements shall be identified by having permanent markings on the side edge of the board showing production batch number, date and "T7" indicating that the board was manufactured to have enough strength to pass the test described in 6.9.2.2.

Laminated floorboards shall comply with Rigidity Modulus "MOR" and Elasticity Modulus test "MOE" (see ISO 16978).

6.9.2

Replace with the following:

6.9.2 Procedure

6.9.2.1 The test shall be made with the container resting on four level supports under its four bottom corner fittings, with its base structure free to deflect. Access to the underside is required.

6.9.2.2 The test shall be performed using a test vehicle:

a) that is equipped with solid or pneumatic tyres;

b) that has an axle load of 7 260 kg (i.e. 3 630 kg on each of the two tyres);

c) where each wheel has a maximum contact area between the tyre and the flat continuous surface of the floor of 142 cm^2;

d) where each tyre has a width of 180 mm (-0, +5);

e) where the length of contact with the floor of each tyre shall not exceed 100 mm in the direction of travel (movement), the actual dimension will depend on:

   1) whether the tyre is solid and has a flat surface in which case the dimension shall be no more than 79 mm; or

   2) is a pneumatic tyre with a tread in which case the dimension shall be no more than 100 mm;

f) where the distance between wheel centres should be nominally 760 mm;

g) the width of the test load should not protrude beyond the outside faces of the wheels.

6.9.2.3 The test vehicle shall be manoeuvred slowly (at a maximum speed of 152 mm per second or 0,5 foot per second), in such a way that the entire floor area is covered. Care should be taken to avoid impact or other dynamic loads by starting, stopping, and rolling the test vehicle gently and slowly.

6.9.2.4 The test vehicle shall be manoeuvred to cover the entire floor area for a total of five cycles, but the floor area close to gooseneck tunnel shall be covered for three times. One cycle is a complete pass into the container from the door to the front panel and from the front panel to the door and out of the container. The wheels of the test vehicle shall follow the same path on the inward and outward passes.

6.9.2.5 The test vehicle should be repositioned outside the container between cycles to avoid imposing any dynamic loads on the container floor.

6.9.2.6 As the test vehicle rolls over the floor, the base structure should be observed to trace any abnormal sounds indicating potential breakage.

Annex E

Add the following new annex after Annex D:

Annex E
(normative)

Testing method

E.1 Scope of testing

All batches of production should be tested. The first container of each production batch and one container randomly picked by the buyer's representative, or Classification Society inspector in absence of buyer's, representative out of no less than every 100 units built thereafter, or as otherwise agreed between parties, should be tested as below.

Test units should be moved directly to the testing area after they are off lined. Prototype units shall be tested following the same steps.

Testing shall continue until all five cycles are completed or until a failure is detected in any floor panel. If there are obvious signs of failure such as waives, bulges, or cracks that occur at any time during the test, prior to the completion of the fifth cycle, the container has failed the floor test, and the test should be stopped.

E.2 Floor pass/fail criteria

For flooring materials, not covered by this standard, in service today, or newly developed in the future, defect analysis testing procedure will have to be developed.

For composite or laminated flooring, representing the majority of flooring materials to-date, at the end of the fifth cycle the inspector should, using a hammer, tap the floor in search of hollow sounds, which will indicate delamination between floor panel components. In addition, the inspector should look for other obvious signs of failure such as waviness and/or bulges on the outer plies, and cracks in the outer (usually lower) plies of the tested boards.

If tapping the floorboards produces a hollow sound but there are no obvious signs such as waviness, bulges, or cracks as mentioned above, the area should be marked for removal and further inspection of the cross section presenting delamination signs.

E.3 Breakage

Any breakage constitutes failure of the floor tested. Breakage is defined as follows:

— Any delamination/ply separation resulting from the internal shearing of the veneer or failure of the adhesive including peeling of the surface plies such that the panel no longer acts as a single, composite structure.

— Any visible cross-grain or transverse cracks failed units.

— Any mechanical properties alteration or permanent deformation for other materials.

Should breakage be found, a second container from the same batch of 100, or as agreed by the container's buyer, shall be tested as above.

If the second container passes the test, the batch is considered acceptable.

If the second container fails, the container batch is failed, and the buyer shall be contacted for instructions.