SLOVENSKI STANDARD
SIST EN 12574-2:2017

01-april-2017

Nadomešča:
SIST EN 12574-2:2006

Nepremični zabojniki za odpadke - 2. del: Izvedbene zahteve in preskusne metode

Stationary waste containers - Part 2: Performance requirements and test methods

Stationäre Abfallsammelbehälter - Teil 2: Anforderungen an die Ausführung und Prüfverfahren

Conteneurs fixes à déchets - Partie 2 : Exigences de performance et méthodes d'essais

Ta slovenski standard je istoveten z: EN 12574-2:2017

ICS:

13.030.40	Naprave in oprema za odstranjevanje in obdelavo odpadkov	Installations and equipment for waste disposal and treatment

SIST EN 12574-2:2017 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12574-2

February 2017

ICS 13.030.40

Supersedes EN 12574-2:2006

English Version

Stationary waste containers - Part 2: Performance requirements and test methods

Conteneurs fixes à déchets - Partie 2 : Exigences de performance et méthodes d'essais

Stationäre Abfallsammelbehälter - Teil 2: Anforderungen an die Ausführung und Prüfverfahren

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 12574-2:2017) has been prepared by Technical Committee CEN/TC 183 “Waste management”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2017, and conflicting national standards shall be withdrawn at the latest by August 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12574-2:2006.

This European Standard is one part of the series of standards EN 12574 about “Stationary waste containers” comprising the following parts:

— *Part 1: Containers with a capacity up to 10 000 l with flat or dome lid(s), for trunnion, double trunnion or pocket lifting device — Dimensions and design;*

— Part 2: Performance requirements and test methods;

— Part 3: Safety and health requirements;

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This part of EN 12574 specifies the test methods for stationary waste containers (in the text also called containers) according to EN 12574-1:2017. It also specifies the target requirements to be reached either during or after the tests.

2 Normative references

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

EN 1501-1, *Refuse collection vehicles and their associated lifting devices - General requirements and safety requirements - Part 1: Rear-end loaded refuse collection vehicles*

EN 1501-2, *Refuse collection vehicles and their associated lifting devices - General requirements and safety requirements - Part 2: Side loaded refuse collection vehicles*

EN 1501-3:2008, *Refuse collection vehicles and their associated lifting devices - General requirements and safety requirements - Part 3: Front loaded refuse collection vehicles*

EN 1501-5, *Refuse collection vehicles - General requirements and safety requirements - Part 5: Lifting devices for refuse collection vehicles*

EN 10346, *Continuously hot-dip coated steel flat products for cold forming - Technical delivery conditions*

EN 12574-1:2017, *Stationary waste containers - Part 1: Containers with a capacity up to 10 000 l with flat or dome lid(s), for trunnion, double trunnion or pocket lifting device - Dimensions and design*

EN ISO 105-B02, *Textiles - Tests for colour fastness - Part B02: Colour fastness to artificial light: Xenon arc fading lamp test (ISO 105-B02)*

EN ISO 1461, *Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods (ISO 1461)*

EN ISO 4892-2, *Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc lamps (ISO 4892-2)*

EN ISO 8256, *Plastics - Determination of tensile-impact strength (ISO 8256)*

ISO 2081, *Metallic and other inorganic coatings - Electroplated coatings of zinc with supplementary treatments on iron or steel*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12574-1:2017 apply.

4 Tests

4.1 General

The following tests refer to EN 12574-1:2017.

Before and after the tests a visual inspection of the container shall be done for the purpose of:

a) checking that the container is not damaged and has no visual defect;

b) checking that the manufacturing characteristics of the container to be tested are those specified in EN 12574-1:2017;

c) comparing the condition of the container before and after the sequence of tests.

After completing the tests some deformation of the container is permissible, however, it shall remain entirely functional.

4.2 Control before the tests

4.2.1 Visual aspects

Conformity of the container to EN 12574-1:2017, no damage, no cracks, bubbles, large flashes or sharp edges shall be present. No surface defects (unsmooth areas; trails in colour) perceivable from a distance of 1 m by a naked eye shall be visible.

4.2.2 Correspondence with EN 12574-1:2017

4.2.2.1 Components

Body, lid, wheels and other fittings shall be tested in line with the relevant container standard.

4.2.2.2 Sizes and dimensions

Dimensions of the containers and components shall correspond to EN 12574-1:2017.

4.2.2.3 Capacities

Capacities of the container and its parts shall correspond to EN 12574-1:2017.

a) For the body, by tank method (see 4.2.2.4), up to 1 700 l, and by calculation for containers over 1 700 l;

b) for the lid, if possible by tank method (see 4.2.2.4), if not by calculation;

c) for the container, add the results obtained in a) and b) minus any duplicated capacities.

4.2.2.4 Tank method

The test equipment shall consist of a tank with sufficient capacity to receive the container to be tested.

The test procedure is as follows:

a) place the empty container in a tank, the container shall not be inclined;

b) simultaneously fill the tank and the container with water at a temperature of (15 ± 5) °C;

c) measure the quantity of water inside the container.

The result of measurement shall be ± 1 % of the stated capacity of the container.

4.2.3 Masses limit deviations

The limit deviations on the claimed container mass are ± 5 % for all materials.

4.2.4 Colour

The colour shall be defined and agreed upon between customer and supplier.

4.2.5 Marking

The marking of the container shall correspond to EN 12574-1:2017, Clause 10.

4.3 Control after the tests

In spite of variations in deflection and sizes, it shall be possible to lift and tilt the container loaded according to 4.5 with nominal load safely on a designated lifting device and to move the container on its wheels if any.

4.4 Conditions of the tests

The tests shall be carried out at the following temperatures:

T_1 = (23 ± 5) °C

T_2 = (-18^{0}_{-2})°C.

The minimum duration of conditioning before testing shall be 12 h. If the test is carried out outside the conditioned room and if the duration of the test is more than 5 min, then for each 5 min period of testing the container shall be reconditioned for at least 15 min before continuing the test.

For special purposes a temperature lower than −18 °C or higher than +23 °C can be agreed; in this case it shall be indicated in the test report.

4.5 Test load

For the calculation of test loads either of the two following density values shall be taken:

— 0,25 kg/dm³ for light waste (e.g. for plastics, plastic bottles, flasks, mixed waste);

— 0,40 kg/dm³ for heavy waste (e.g. for glass, paper, organic waste, cardboard).

The test load shall be the value of density as above multiplied by nominal volume and shall be HDPE granules in 25 kg bags having a specific mass of 0,5 kg/dm³ but no more than 2 500 kg.

4.6 Tests on the containers

4.6.1 General

All tests shall be carried out on new containers, as per the sequence of tests in 4.10.4.

4.6.2 Impact test by ball drop

The ball drop test is not compulsory for steel containers.

The ability of the sensitive points such as welds and corners of the container to resist under impacts at temperature T_2 shall be tested.

The stationary containers shall stand on their wheels (if they are fitted) or on their supports.

Ball drop test shall be carried out using a 5 kg steel cylinder, diameter 65 mm, with hemispheric end radius of 32,5 mm. The steel cylinder is guided in a vertical pipe with a slot or with holes in order to allow the air to escape during the drop.

The following areas of containers shall be tested by impact test according to the conditions shown below:

a) on the inside of the bottom:

   1) at least 3 points beginning at the injection point(s) (less than 20 mm from sprue point) and other potentially weak points (i.e. drain holes for instance);

   2) with a drop height of 1,5 m;

   3) with a frequency of 3 times per measuring point.

b) at protrusions on the body (handle, top rim, etc.), junctions between lid and body, hinges at the lid and protruding areas on the lid:

   1) with a drop height of 0,8 m; and

   2) with a frequency of 2 impacts per measuring point.

After tests, no permanent deformations or ruptures capable of hampering designed use are allowed.

The device shall be according to Figure A.1.

A test of segments is allowed with segments of approximately a quarter of a square metre.

At least the following critical area shall be sawn from the container and shall be tested:

— positioning wheel suspensions (see area 1 in Figure 1): this area shall be cut out from the bottom at a height of approximately 500 mm;

— frontal receiver (see area 2 in Figure 1): both corner parts shall be tested. The area should be 300 mm × 300 mm;

— hinge area (see area 3 in Figure 1): both corner parts shall be tested. The area should be 300 mm × 300 mm;

— lid (see area 4 in Figure 1): an area from the hinges to the injection points shall be tested.

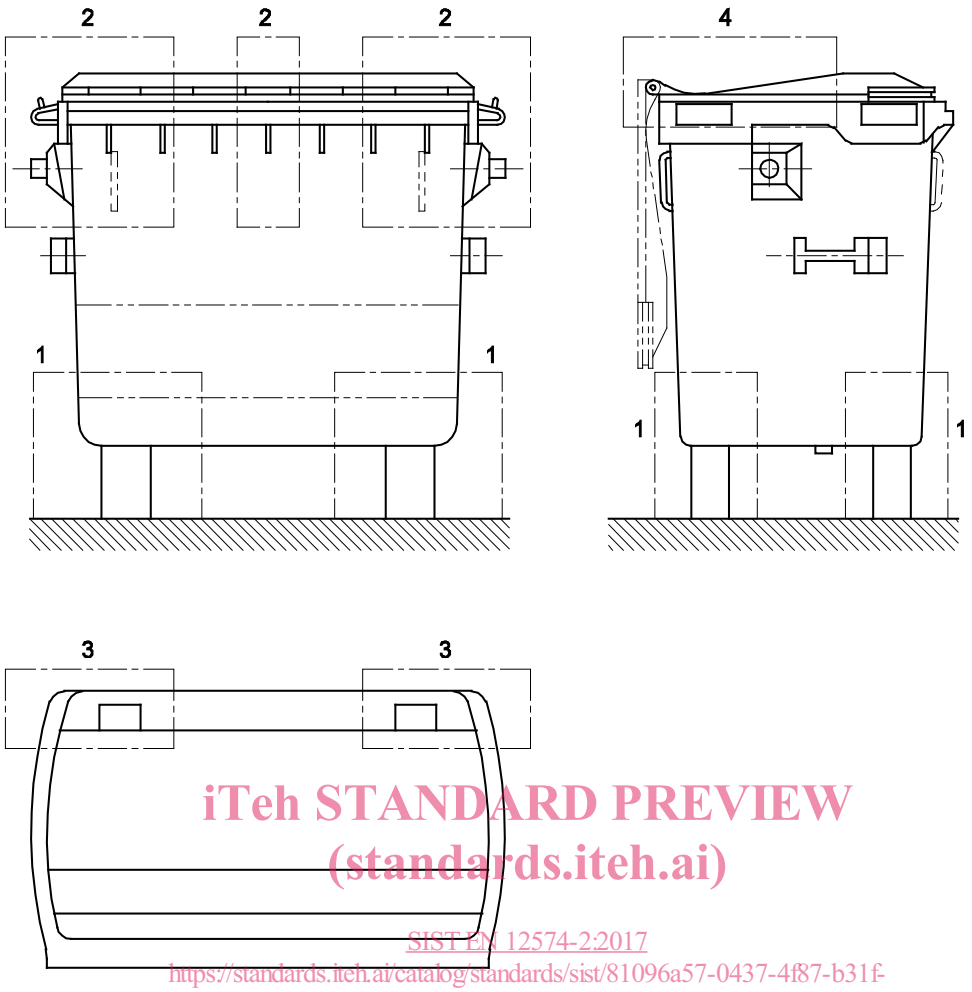

Figure 1 — Segments to be tested

4.6.3 Impact on an inclined plane

The stationary containers shall be tested with impact on each wall of the body and on each corner to check the resistance to straining and breaking of sensitive areas, including protruding areas and fittings. The test conditions shall be:

— temperature T_1;

— ballast according to 4.5;

— impact against a wall perpendicular to the direction of movement;

— a total of 16 impacts according to (the sequence in) Table 1.

During the procedure the lid shall be closed. The loaded container shall be placed on a trolley with an inclination of 10° (ten degrees) (relative to the horizontal). Precautions shall be taken to avoid accidental tipping of the container during the test (see Figure B.1).

An example of suitable apparatus is shown in Annex B.

Other apparatus could be used if it allows the same impact and velocity conditions.

The impact velocity shall be 1,85 m/s when one face is tested and 1,3 m/s when one corner is tested.

The vertical faces of the container shall be numbered from 1 to 4, the face marked 1 being that which interfaces with the RCV. Corners are marked 1.2, 2.3, 3.4 and 4.1.

After completing the tests some deformation of the container is permissible, however, it shall remain entirely functional.

Table 1 — Sequence of the lateral impacts

Impact N°	Face or corner tested	No of impacts
1 to 2	Face 1	2
3 to 4	Corner 1.2	2
5 to 6	Face 2	2
7 to 8	Corner 2.3	2
9 to 10	Face 3	2
11 to 12	Corner 3.4	2
13 to 14	Face 4	2
15 to 16	Corner 4.1	2

4.7 Stability test

The static stability of the empty and loaded containers on a slope of 10° (ten degrees) to the horizontal shall be tested at first on empty containers and after that on containers filled with the nominal load.

The test shall be carried out in still air conditions.

For 4-wheeled containers (for positioning only), the brakes, if any, should prevent them from rolling. Other arrangements shall be made to prevent containers from sliding or rolling without hindering tipping.

4.8 Dynamic tests

4.8.1 General

The aim of these tests is to check the handling and immobilization of the containers.

4.8.2 Pulling test

The strength required to start and maintain the container movement is to be measured. The pulling force defined as horizontal force is measured and the result is to be stated in the instruction for use.

The test shall only be carried out on empty containers with 4 wheels for positioning purpose only.

The maximum forces for sustained pulling shall not exceed 285 N.

In order to get comparable results all forces tests shall be carried out under the following conditions:

— new container;

— ground shall be a plane, smooth concrete horizontal surface [slope = 1° (one degree) maximum];

— pulling force shall generate a speed of 0,1 m/s ± 0,005 m/s;

— pulling distance shall be 3 m minimum;

— temperature in test area and of the tested container shall be T_1;