ENGELS
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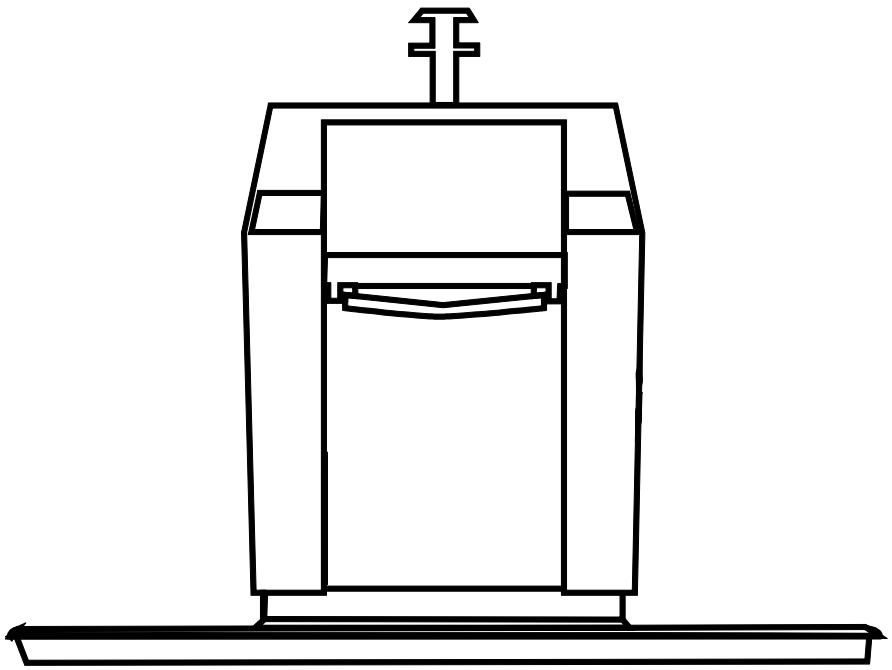
Test report for underground waste containers

Lifting apparatuses: 1 hook, 2 hooks, 3 hooks and Kinshofer

Report: 2016-EN-1



All tests were executed at the site of Engels Logistiek BV, Boven Zijde 9, Eindhoven. Every test, described in this report was successfully completed. No deficiencies have been identified.

This report was drafted by G.J.E. van Himbergen from the Engels Group NV in April 2016.

All tests were carried out by the Engels Group NV in cooperation with TÜV Nederland QA BV on behalf of:

Engels Logistiek BV
Boven Zijde 9
5626 EB Eindhoven
Nederland

Engels Group NV

Postbus 28013 - NL-5602 JA Eindhoven
Boven Zijde 9 - NL-5626 EB Eindhoven
tel: +31 40 2629 222 fax: +31 40 2629 200
group@engels.eu www.engelsgroup.com

Engels Group NV is parent of the Engels companies in
The Netherlands, Belgium, Germany, France and Portugal

KVK Brabant: 57356130 BTW/VAT: NL852545083B01
IBAN: NL38INGB0007974676 BIC: INGBNL2A

VERKLARING VAN OVEREENSTEMMING
DECLARATION OF CONFORMITY

TÜV NEDERLAND
Member of TÜV NORD Group

TÜV Nederland QA B.V.

Verklaart dat het ontwerp en de bouw van het hieronder vermelde product voldoet aan de fundamentele veiligheids- en gezondheidseisen, zoals gesteld in Europese normenbladen

- EN 13071-1:2008/AC:2010 - Stationaire afvalcontainers met een inhoud tot 5.000 l, aan de bovenkant gehesen, onderlossend - Deel 1: Algemene eisen
- EN 13071-2:2008/AC:2010 - Deel 2: Aanvullende eisen voor ondergrondse of gedeeltelijk ondergrondse systemen

Declares that the design and build of the here below mentioned product meets the essential safety and health requirements, as mentioned in the European Standards

- EN 13071-1:2008/AC:2010 - Stationary waste containers up to 5.000 l, top lifted and bottom emptied – Part 1: General requirements
- EN 13071-2:2008/AC:2010 - Part 2: Additional requirements for underground or partly underground systems

Opdrachtgever Reference of applicant	Engels Logistiek B.V. Bovenzijde 9 5626 EB Eindhoven Nederland
Merk/ type Make / type	Apyra
Uitvoering: Version:	Dubbele klep Two lids
Productomschrijving Product-description	Ondergrondse containers, met nominale volumia: Underground containers, with nominal volumes: • 5 m^3 / 4 m^3 / 3 m^3
Certificaatnummer Certificate-number	2012-A-081-1
Rapport Report	2012-A-081
Aanvullende opmerking(en) Additional remarks	• Ledigingssysteem: 1-klep (1-haak) / 2-klep (Kinshofer, 2-haak of 3-haak). Emptying device: 1-hatch (1-hook) / 2-hatches (Kinshofer, 2-hook or 3-hook). • Veiligheidssytemen: veiligheidshek / veiligheidsvloer. Safety systems: safety barrier / safety floor.
Opgesteld Drawn-up	29-05-2013
Geldig tot Valid until	29-05-2018

A.C. Boon
Managing Director

Het is de verantwoordelijkheid van de opdrachtgever te onderzoeken welke Europese Richtlijnen van toepassing zijn op dit product.

Opdrachtgever dient TÜV Nederland QA B.V. (verder TÜV), op de hoogte te brengen van alle, zelfs geringe, wijzigingen die hij heeft aangebracht of overweegt aan te brengen aan onderhavig product. TÜV onderzoekt of deze wijzigingen een hernieuwd onderzoek vereisen, of dat onderhavige certificaat zijn geldigheid behoud.

Ingevolge de Algemene wet bestuursrecht kan tegen dit certificaat bezwaar worden gemaakt. Daartoe moet binnen zes weken na de datum van verzending van dit certificaat een bezwaarschrift worden ingediend bij TÜV NEDERLAND QA B.V., Postbus 120, 5680 AC te Best. In dit bezwaarschrift moet worden aangegeven waarom dit certificaat niet juist gevonden wordt. Verzocht wordt bij dit bezwaarschrift een kopie van dit certificaat en van eventuele andere op de zaak betrekking hebbende stukken te voegen.

It is the responsibility of the applicant to investigate which European Directives are applicable for this product.

The applicant shall inform TÜV Nederland QA B.V. of any modifications, even of a minor nature, which he has made or plans to make to the related product. TÜV shall examine those modifications and inform the applicant whether the examination certificate remains valid or renew examinations are required.

In accordance with the General Administrative Law Act, an objection may be lodged against this certificate. In such a case, an official objection must be submitted to TÜV NEDERLAND QA B.V, P.O. Box 120, 5680 AC Best within six weeks after the date this certificate was posted. In this objection, it must be stated why this certificate is thought to be incorrect. Please enclose a copy of this certificate with this objection, as well as any other documents pertaining to the matter.

TÜV NEDERLAND QA B.V. – Postbus 120 – 5680 AC Best – bezoekadres: de Waal 21C – 5684 PH Best
☎ 0499-339500 – 🖷 0499-339509 – e-mail: info@tuv.nl – website: www.tuv.nl

Test report for underground waste containers

Lifting apparatuses: 1 hook, 2 hooks, 3 hooks and Kinshofer

Features

Underground waste container type Apyra consisting of a concrete outer pit, containing a steel inner container of 3 m^3, 4 m^3 or 5 m^3. The inner container is a nailed version. When the inner container is lifted out of the concrete pit, a safety protection (floor or barrier) will appear that prevents people from falling into the concrete pit.

The top of the inner container is equipped with a pedestrian platform with a column where the waste can be deposited. The column is available in different variations and has a modular structure with double drum, glass- or paper insert opening and is mounted independently of the lifting apparatus.

The inner container is equipped with a single emptying hatch, double- or triple emptying hatches.

The column is equipped with a 1 hook, 2 hooks, 3 hooks or Kinshofer lifting apparatus to lift and eventually empty the inner container.

Type

We have tested the containers with the largest capacity (5 m^3). The tested containers are the version with one, two or three bottom hatches. Most tests have been carried out in cooperation with TÜV Nederland QA BV. They have recorded the results of these tests in a report with number 2012-A-81. On request we can send a copy of this report.

Maximum load

2000 kilogram (specific gravity waste 400 kilogram/m^3).

Own weight

Depending on specifications of the column 500/700 kilogram.

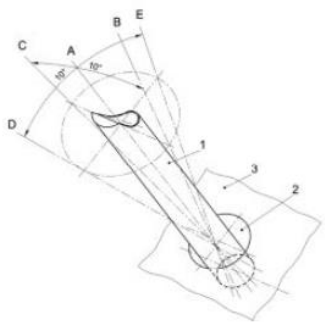
EN13071:2008/AC:2010 Part 1	pass	fail	N.A.	remarks
4 General requirements				
4.1 Design				
Filling apertures shall be designed to prevent injuries to users in normal use. In addition, filling apertures shall be designed so that they prevent any person falling accidentally into the container. For round filling aperture having a diameter less than 200 mm or rectangular ones with one dimension less than 150 mm, no specific design is required.	√			Depending on the column. All dimensions of the filling apertures are within the requirements.
4.2 Filling aperture height				
Filling aperture height shall be 1.700 mm maximum. Where fitted, the filling aperture height for disabled persons shall be 1.200 mm maximum	√			Depending on the column. All dimensions of the filling apertures are within the requirements.
4.3 Total height				
Total height shall be 6.000 mm maximum	√			The highest version has a height of 3.990 mm.
4.4 External surfaces / edges				
Sharp edges shall be avoided in all cases. Rounded edges with a radius more than 1,4 mm are not considered as sharp edges.	√			No sharp edges could be identified.
4.5 Lifting connection position				
The lifting connection shall be positioned so that, when empty and with the emptying hatch(es) closed, the container shall hang vertically.	√			The lifting connection is positioned exactly in the middle so the containers hang vertically.
4.6 Total permissible mass				
The total permissible mass shall not exceed 2.500 kg.	√			The permissible mass is recorded on the data sheet.
4.7 Total usable volume				
The total usable volume shall be obtained by calculation, and shall be within ± 10 % of the nominal volume.	√			The usable volume of all containers (3 m^3, 4 m^3 and 5 m^3) has been calculated and meet this requirement.
4.8 Waste spillage				
The container shall be designed so that at all times during the emptying operation, no waste shall spill.	√			

5 General requirements	pass	fail	N.A.	remarks
5.1 General				
All tests shall be carried out on new containers.	√			
5.2 Temperature requirements				
The tests shall be carried out at the following temperatures: *T1* = (23 ± 5) °C; *T2* = (-18 + 0/-2) °C.	√			Metal containers, test temperature 7 °C.

6 Test Methods	pass	fail	N.A.	remarks
6.1 General				
Where a family of containers is produced from identical components, the testing of the components on the smaller containers can be omitted, providing the larger container's components have passed the tests.	√			The most critical containers have been tested.
6.2 Test methods on empty containers				
6.2.1 Stability test				
6.2.1.1 Requirement				
During the test according to 6.2.1.2, the container shall not tip over before an angle of 10° is obtained.	√			
6.2.1.2 Procedure				
Apparatus: • a sloping surface of sufficient dimension to accommodate the whole base of the container. So that the container does not slide before tipping over, the surface shall be covered with a rubber plaque of hardness 60 IRHD1) ± 5 IRHD according to ISO 48 and density 1,35 ± 0,05 g/cm3, and a static friction coefficient μ = 0,6 ±0,1; • a tilting device. Temperature: • *T1* Method: • the container is placed on its base on the sloping surface facing the steepest direction (if in doubt, carry out the test in several positions); lift the side opposite the pivoting point in order to obtain the predetermined angle. This action should be realised at an angular speed less than 1°/s.	√			The container was placed on a wooden pallet. The pallet was slowly lifted with a forklift until the 10° angle was reached.

6.2.2 Resistance to interior impacts	pass	fail	N.A.	remarks
6.2.2.1 Requirement				
After the test, carried out according to 6.2.2.2, the functionality of the container shall not be compromised.	√			
6.2.2.2 Procedure				
Apparatus (see Figure 1): • Steel balls of mass 2 ± 0,1 kg (diameter 80 mm max.); • A tube for guiding the balls into the inside of the container. The inner diameter of the tube shall measure between 85 mm and 90 mm and allow a 500 mm ± 5 mm guidance length for the ball. Temperature: • Generally: 23 ± 5 °C • For emptying hatch with thermoplastic parts: *T2*. Method (see Figures 1 and 2): • Place the end of the tube successively in each filling aperture only 100 mm ± 5 mm into the inside of the container. The tube rests by means of its own weight on the lowest point of the filling aperture; • Direct and guide the tube to each of the 5 positions indicated in Figures 1 and 2; • Place one ball at the top of the guiding tube. Let the ball go with no initial speed so that it falls into the container by the force of gravity alone. • For emptying hatches including plastic parts, the emptying hatch will be conditioned to *T2*. The test will be conducted as if the complete container was present.	√			 Test 1: angle 30° relative to horizontal Test 2: angle + 10°relative to test 1 Test 3: angle - 10° relative to test 1 Test 4: angle 30° + 10° left Test 5: angle 30° + 10° right

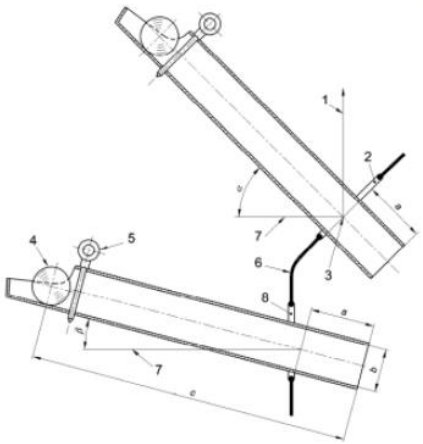
Dimensions in millimetres



Key
A Position 1
B Position 2
C Position 3
D Position 4
E Position 5
1 Guidance tube
2 Filling aperture
3 Container

Figure 2 — Slant of positions 2 and 5 in relation to position 1

Dimensions in millimetres



Key
1 Vertical axis
2 Inclined filling aperture
3 Centre of the guiding tube
4 Ball, diameter max. 80 mm
5 Releasing pin
6 Container wall
7 Horizontal plane
8 Vertical filling aperture
a 100 ± 5 mm
b 85 mm $^{+3}_{0}$ mm
c 500 ± 5 mm
α 45° max.
β 15° min.

Figure 1 — Description of the guiding tube and its position 1 according to the slope of the filling aperture

6.2.3 Free fall test	pass	fail	N.A.	remarks
6.2.3.1 Requirement				
After the test, carried out according to 6.2.3.2, the locking system and the emptying device shall remain fully operational. There shall not be any malfunction when the container is lifted, emptied and replaced in accordance with the manufacturer's instructions.	√			
6.2.3.2 Procedure				
Apparatus: • a device whereby the suspended container can be set to free fall; • a base conforming to EN 22248 / 4.4 *4.4 Impact surface, horizontal and flat, massive enough to be immovable and rigid enough to be non-deformable under test conditions.* *NOTE: In normal circumstances, the impact surface provided shall be* *- integral with a mass at least 50 times that of the heaviest package to be tested;* *- flat, such that no two points on its surface differ in level by more than 2 mm;* *- rigid, such that it will not be deformed by more than 0,1 mm when an area of 100 mm² is loaded statically with 10 kg anywhere on the surface;* *- sufficiently large to ensure that the test package falls entirely upon the surface.* Temperature: • Generally: 23 ± 5 °C Method: • lift the container with its attached components to the predetermined height, then let it fall by the force of gravity alone: • height of fall: 0,2 m; • number of drops: 30; • falling position: flat on to the base.	√			The double emptying hatch version has been dropped 48 times.

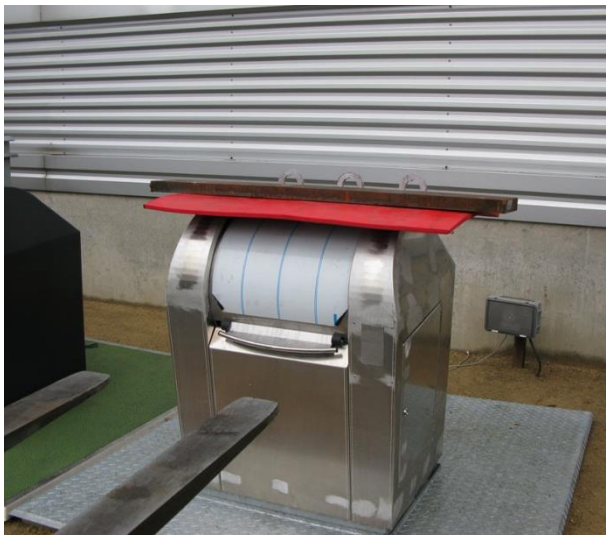
footage of test 6.2.3

testing the single emptying hatch

setting up and eventually testing the double emptying hatches

6.2.4 Resistance of the roof	pass	fail	N.A.	remarks
6.2.4.1 Requirement				
The aim of the test is to check the resistance of the roof to climatic conditions and other overloads. After the test, carried out according to 6.2.4.2, the roof shall remain fully operational and no permanent deformation or rupture capable of hampering the designed use is allowed.	√			
6.2.4.2 Procedure				
Apparatus: • a device whereby a load can be installed on the roof. Method: • a load of 100 kg/m² shall be uniformly installed on the roof. The value of the load shall be calculated as follows: $L = 100 \times S$ where L is the load in kg; S is the surface of the roof in m². • The minimum duration of the test shall be 6 hours.	√			Surface = 0,6 m² Load = 60 kg We have tested with a load of 75 kg.

footage of test 6.2.4



6.3 Tests methods on loaded containers	pass	fail	N.A.	remarks
6.3.1 Resistance to exterior impacts				
6.3.1.1 Requirement				
After the test, carried out according to 6.3.1.2, the functionality of the container shall not be compromised.	√			Some deformations in the sheet material, the container after the test is functioning properly.
6.3.1.2 Procedure				
Temperature: • T1. Test load: • *TL*1 which is calculated as follows: *TL*1 = *V*n x › where *TL*1 is the test load in kg; *V*n is the nominal volume in dm³; › is the density of the waste (see 5.3). Apparatus: • device conforming to EN ISO 2244 (see Figure 3); • container loaded to *TL*1 with ballast bags of HDPE granules of 4 kg maximum with granules having a bulk density of 0,5 kg/dm³; • wooden bar with a cross section 100 mm x 100 mm and with a length greater than the container side dimension. Method: • position the container on the carriage to ensure that the container will hit the impact surface, with the square cross sectioned bar placed at a predetermined height *X*; • move the carriage up the length of the slope to the height that will result in the desired impact speed, then release it. • impact speed: 1,3 m/s. • number of lateral impacts: 8, of which 4 are located at *X* = 0,4 m, and 4 where *X* is half the height of the body of the container (see Figure 3). • The direction of the impacts to be applied shall be determined by the shapes of the containers as indicated in Figure 4.	√			500 bags containing 4 kg of granulate = 2.000 kg The containers have been tested on two flat sides and two corners at 40 cm and 120 cm height.

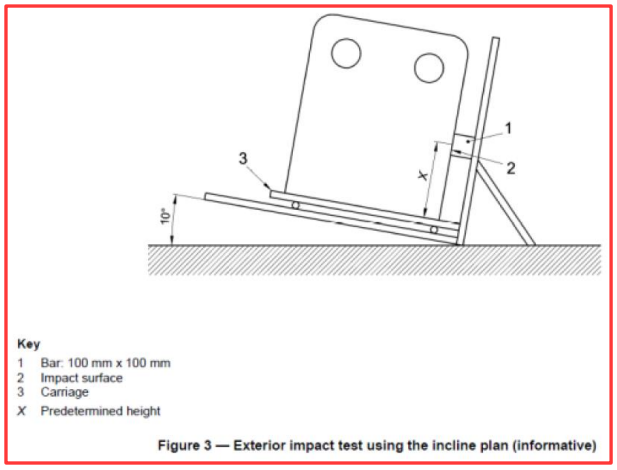


Figure 3 — Exterior impact test using the incline plan (informative)

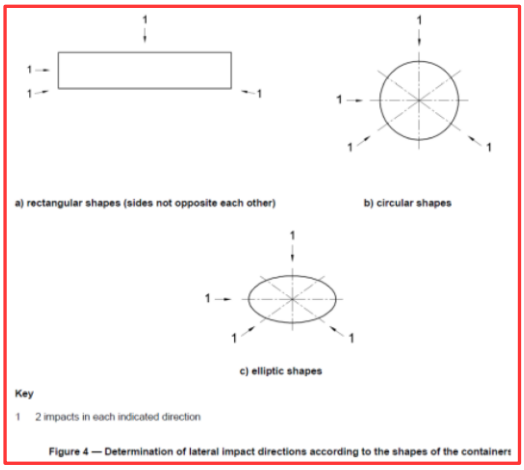


Figure 4 — Determination of lateral impact directions according to the shapes of the containers

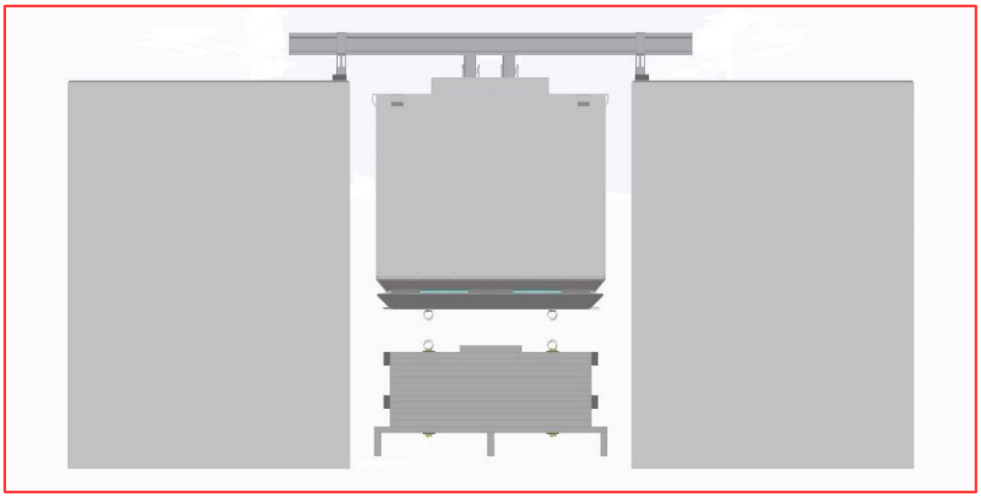
footage of test 6.3.2

the container is positioned on the carriage

after the test the deformations can be seen

the container is lifted of the carriage for the next test

6.3.2 Emptying device/Locking system	pass	fail	N.A.	remarks
6.3.2.1 Requirement				
After the test, according to 6.3.2.2, the opening and locking mechanisms shall remain fully operational and shall not malfunction when the container is lifted and replaced.	√			
6.3.2.2 Procedure				
Temperature: • T1. Test load: • *TL2* where *TL2* = *TL*1 x 1,5 (for *TL*1 see 6.3.1.2). Apparatus: • lifting device; • test load *TL2* of solid material of suitable density to allow free movement of the emptying device under test conditions; • device for securing the test load to the emptying device. The method for securing the test load shall be recorded on the test report. Method: *Stage 1* • The container is suspended by the lifting mechanism. The test load *TL2* is secured to the emptying device. • The container is lifted, the emptying device is unlocked, the emptying device is allowed to partially open to 150 mm from the closed position, the locking mechanism is closed and the container is replaced according to the manufacturer's data sheet. For double emptying devices the measurement applies vertically. • The position of the test load shall not hinder the unlocking and opening of the emptying device. • The sequence is repeated 200 times. *Stage 2* • The test load is removed and the locking mechanism is operated 50 times. The container is lifted to a position of sufficient height that for each test the emptying device can open and swing freely without obstruction.	√			2 metal weights of 1.500 kg each



schematic illustration of the test setup

footage of test 6.3.2

the test load hangs freely underneath the container

opening of the bottom hatch containing the test load

closing of the bottom hatch containing the test load

this sequence is repeated 200 times

6.3.3 Mechanical resistance of the lifting components	pass	fail	N.A.	remarks
6.3.3.1 Requirement				
At the end of stage 1, according to 6.3.3.2, any permanent warping, permanent deformation or the beginning of ruptures shall not be allowed. At the end of stage 2, according to 6.3.3.2, permanent warping/deformation, even if significant, is allowed, this does not include the rupture/cracking of the lifting mechanism or components of its structure.	√			
6.3.3.2 Procedure				
The test includes two successive stages, and is carried out on a container with variable test loads corresponding to stages 1 and 2. Temperature: • *T*1. Apparatus: • appropriate device for lifting the container; • test load to the value stipulated in stages 1 and 2 of sufficient density to allow it to be fixed securely inside the container. Method: • for each stage the test load is placed in such a way that the resistance of the lifting mechanism and the structure of the container are effectively tested. The method for securing the test load to the container shall be recorded on the test report. The same description shall be given for the various components of the test load and their distribution. • each stage shall be carried out in a gradual manner; this involves maintaining the test load on the container for a period of (5+1 min) and then withdrawing it. The applying and the withdrawing periods are to be approximately equal and at a rate less than 100 kg/s. Test load stage 1: *TL*3 where *TL*3 = *TL*1 x 2,5 (for *TL*1 see 6.3.1.2) Test load stage 2: *TL*4 where *TL*4 = *TL*1 x 3,5 (for *TL*1 see 6.3.1.2)	√			3.000 kg is freely hanging underneath the container. For each stage an additional 2.000 kg is stacked on the container. 5.000 kg 7.000 kg

footage of test 6.3.3, stage 1

stage 1, 2.000 kg stacked on top of the container

stage 2, 4.000 kg stacked on top of the container, 3.000 kg hangs freely underneath the container

6.4 Measurement of the sound level emitted by falling glass inside the containers	pass	fail	N.A.	remarks
The test shall be carried out according to the European Directive 2000/14, Annex III, item 22 (5).	√			See report CE 0044 - 377 13 001 5 001
6.5 Corrosion				
The container shall be resistant to corrosion. The manufacturer shall use surface treatments or materials that guarantee its performance. Components that are hot dip galvanized after completion shall meet the requirements of EN ISO 1461. Zinc electro-plated parts shall meet the requirements of ISO 2081. Components that are made out of continuously hot-dip zinc coated steel sheets shall meet the requirements of EN 10327	√			
6.6 Weathering (for thermoplastics only)				
			X	

7 Data sheet	pass	fail	N.A.	remarks
- name of the manufacturer, identification code;				Engels Group NV Boven Zijde 9 5626 EB EINDHOVEN THE NETHERLANDS
- reference to this document including definition of base dimensions (Type A or B);	√			Apyra container EN 13071-1:2008 EN 13071-2:2008 EN-13071-3:2011 Type B
- nominal volume;				3/4/5 m³
- overall dimensions;				See drawing AP-1837015
- total permissible mass;				2500 kg
- materials from which the container is manufactured;				Galvanized steel
- method of operation of emptying the container and relevant safety devices;				1, 2, 3 hook(s), Kinshofer
- for containers for glass the sound power level				106 dB

8 Data sheet				
Each container complying with the requirements of this document shall be durably marked in a visible part with: - a reference to this document including definition of base dimensions (Type A or B); - the nominal volume; - the total permissible mass in kg; - the manufacturer's name or trademark; - the month and year of manufacture; - for containers for glass the sound power level.	√			

9 Test report				
The test report shall include the following: - name and place of the testing body; - description of the container, including dimensions, construction specifications, materials used, the accessories and devices later added and references to the manufacturing plans/designs (photographs or documentation from the manufacturer); - mass of the container when empty; - test method, where it needs to be specified. - results of each test	√			

EN13071:2008/AC:2010 Part 2	pas	fail	N.A.	remarks
4 Requirements				
4.2 Design				
The liner shall be resistant to withstand ground pressure and shall be secured against floating or sinking.	√			
The liner shall be designed and built to allow easy cleaning and pumping out of any fluids that have leaked from the container.	√			
The container shall retain residual liquids up to a minimum of 2 % of the nominal volume.	√			
Safety devices shall be resistant to all weather conditions, moisture and dirt that could negatively affect their functionality.	√			
For maintenance and cleaning, all parts of the underground or partly underground system shall be easily accessible.	√			
If present, the pedestrian platform shall be designed in order to prevent accidental slipping and tripping of pedestrians.	√			
4.3 Safety requirements				
4.3.1 Hole				
During supervised operations, the hole if deeper than 500 mm measured at any point shall be equipped with safety device(s) in order to prevent anyone accidentally falling into it, or being injured by any moving parts of the system. The safety device can be either a safety floor or a safety barrier. If, when the container is removed, the emergent part is a minimum of 900 mm above ground level at any point, no other safety device will be required to protect accidental falls into the hole. In all cases, the safety device(s) shall be highly visible or sensitive to pedestrians. If the hole is left unsupervised, it shall be covered by a specific device that shall resist a minimum load of 500 kg on every point applied on a circle of a diameter of 200 mm.	√			

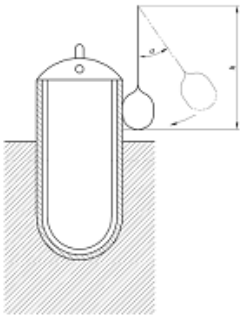
4.3.2 Pedestrian platform	pass	fail	N.A.	remarks
When the container is in place, pedestrian and other sidewalk traffic shall be able to safely pass over it. In any case, the pedestrian platform shall resist a minimum load of 500 kg/ on every point applied on a circle of a diameter of 200 mm. Precautions shall be taken when locating the system to restrict access by vehicles on to the pedestrian platform.	√			
4.3.3 Safety floor				
The safety floor shall move to the safe position automatically when the container is removed from the liner. In its safe position, the safety floor shall not be positioned deeper than 210 mm below the top of the liner at all points. The safety floor shall resist a minimum load of 150 kg on every point applied on a circle of a diameter of 300 mm without moving down more than 150 mm.	√			
4.3.4 Safety barrier				
The safety barrier shall move to the safe position automatically when the container is removed from the liner. Safety barriers shall be a minimum of 900 mm high from ground level to the top of the barrier, at all points around the hole, with no interruption greater than 200 mm. The safety barriers shall have a ground clearance of 400 mm maximum and the distance between two open horizontal members shall not exceed 400 mm. The safety barrier shall resist a minimum force of 180 N applied perpendicularly to the vertical plane.	√			The safety barrier has been tested with 230 N.
6.2.1 Resistance of the safety barrier				
6.2.1.1 Requirement				
The aim of the test is to check the resistance of the barrier to shocks or force while the container is not present. After the test, carried out according to 6.2.1.2, the barrier shall remain fully operational and no permanent deformation nor rupture capable of hampering the designed use is allowed.	√			
6.2.1.2 Procedure				
The equipment is composed of a device whereby a force of 180 N can be applied horizontally. Test method: a force of 180 N shall be applied on a surface of maximum 200 mm diameter at the top of the barrier. For square or rectangular barriers, the force shall be applied on the middle of each face of the barrier. For round barriers, the force of 180 N shall be applied on 4 points of the barrier, every 90°. The minimum duration of the test shall be 1 minute.	√			

footage of test 6.2.1

6.2.2 Resistance of the safety floor	pass	fail	N.A.	remarks
6.2.2.1 Requirement				
The aim of the test is to check the resistance of the safety floor to overloads while the container is not present. During the test, carried out according to 6.2.2.2, the safety floor shall not move down more than 150 mm. After the test, the device shall remain fully operational and no permanent deformation or rupture capable of hampering the designed use is allowed.	√			The safety floor fixated with latches. There is absolutely no movement.
6.2.2.2 Procedure				
The equipment is composed of a device whereby a weight of 150 kg shall be applied vertically, on a surface of maximum 300 mm diameter (EN 13071-2:2008/AC:2010). Test method: the weight of 150 kg shall be applied on a minimum of 8 points of the safety floor. When selecting the locations, the design of the safety floor shall be considered and the test shall be focused on the area's most vulnerable to movement or breakage. The minimum duration of each test shall be 1 minute.	√			

footage of test 6.2.2

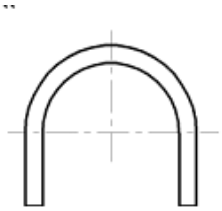
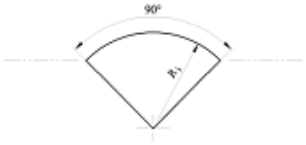
6.2.3 Functionality of the safety floor and safety barrier	pass	fail	N.A.	remarks
6.2.3.1 Requirement				
The aim of the test is to check the functionality of the safety device throughout the lifetime of the underground or partly underground system. After the test, carried out according to 6.2.3.2, the safety device shall remain fully operational and no permanent deformation or rupture capable of hampering the designed use is allowed.	√			
6.2.3.2 Procedure				
The equipment is composed of a lifting device whereby the complete operational cycle of the safety device according to the manufacturer's specifications can be carried out. Test method: the complete operational cycle of removing and replacing the container to activate the safety device is carried out 250 times.	√			
6.2.4 Resistance of the pedestrian platform				
6.2.4.1 Requirement				
The aim of the test is to check the resistance of the pedestrian platform to accidental overloads caused by vehicles or other heavy items. After the test, carried out according to 6.2.4.2, no permanent deformation or rupture capable of hampering the designed use is allowed.	√			
6.2.4.2 Procedure				
The equipment is composed of a device whereby a weight of 500 kg can be applied vertically, on a surface of maximum 200 mm diameter. Test method: the weight of 500 kg shall be applied on 8 points of the pedestrian platform. When selecting the locations, the design of the pedestrian platform shall be considered and the test shall be focused on the most vulnerable areas. The minimum duration of the test shall be 10 min. applied on each of the 8 points.	√			

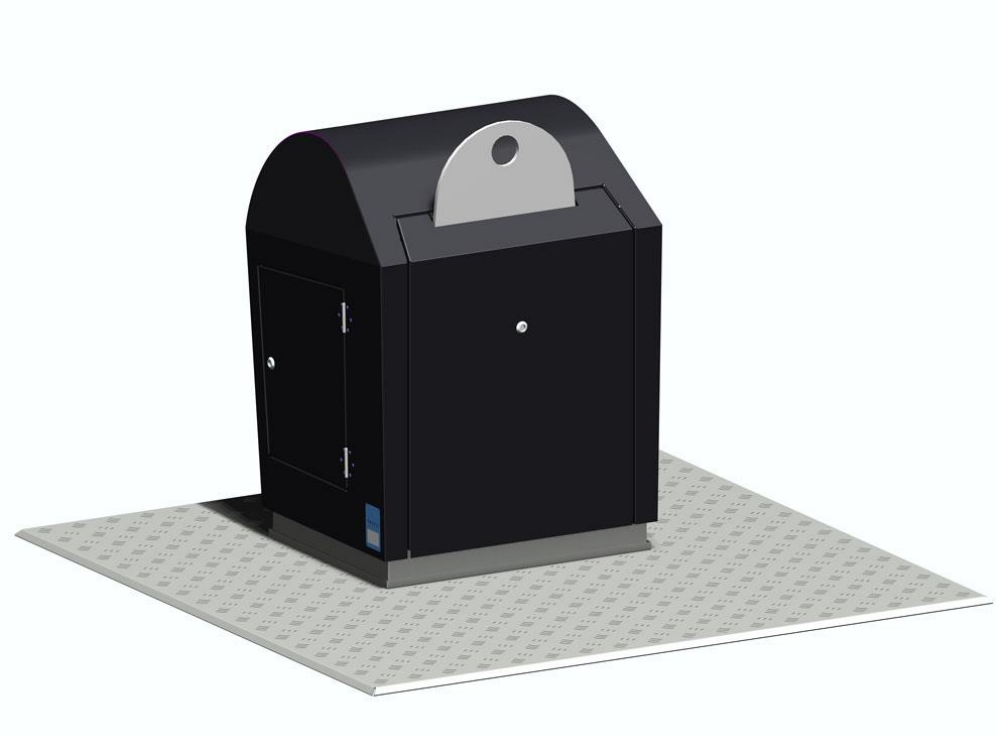
6.2.5 Resistance of the emergent part to exterior impacts	pass	fail	N.A.	remarks
6.2.5.1 Requirement				
The aim of the test is to check the resistance of the emergent part against bumps or shocks during the emptying cycle or due to accidents or vandalism. After the test, carried out according to 6.2.5.2, no permanent deformation or rupture capable of hampering the designed use is allowed.			X	
6.2.5.2 Procedure				
The equipment is composed of the following: - a test load of 50 kg ± 0,1 kg made of a bag containing 3 mm diameter glass marbles, the empty bag length being about 500 mm; - an oscillation arm. Test method: the resistance of the emergent part shall be checked by 4 impacts of the test load at mid-height of the emergent part. For square or rectangular emergent parts, the impacts shall be applied on the middle ofeach emergent part side. For round emergent parts, the impacts shall be applied on 4 points of the emergent part, every 90°. The test load shall be pre-positioned as follows: - the test load touches the face of the emergent part; - the vertical distance between the oscillation point and the bottom of the bag is 1 500 mm ± 50 mm. Impacts shall be obtained by pulling the test load to form an angle of 35° ± 1° and then releasing it to fall with no initial speed against the emergent part (see Figure 2). All observations made during the test shall be noted on the test report.  Key α oscillation angle h vertical distance between oscillation point and bottom of the bag Figure 2 — Example of resistance of emergent part to exterior impacts			X	
6.3 Corrosion				
Components that are hot dip galvanized after completion shall meet the requirements of EN ISO 1461. Zinc electro-plated parts shall meet the requirements of ISO 2081. Components that are made out of continuously hot-dip zinc coated steel sheets shall meet the requirements of EN 10327.	√			

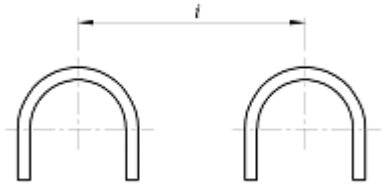
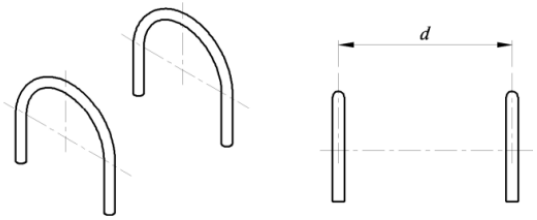
6.4 Weathering (for thermoplastics only)	pass	fail	N.A.	remarks
6.4.1 Requirement				
After testing the specimen of 3 mm thickness, according to 6.4.2, the value of the impact tensile strength shall not be below 50 % of the initial value.			X	
6.4.2 Procedure				
Method: preparation of samples, conditions of exposure, sequence of exposure, test methods to measure performance of new and irradiated samples are defined in EN ISO 4892-2 (see also Annex A of EN 13071-1:2008). The material tested shall contain all the additives of the basic plastic at the rate used to mould the container, i.e. stabilizers pigments or colorants, and, if any, fillers, other plastic, etc. These additives may influence the effects of weathering on the plastic. The results of weathering on plastic containers shall include: - ageing of the plastic material; - changes of colour.			X	
6.5 Sequence of tests				
One underground or partly underground system is necessary for the execution of all tests and dedicated samples for the corrosion and weathering tests. The tests shall be carried out according to the sequence shown in Table 1. The figures indicate the order of the tests for the container. It is recommended that the tests in Part 2 are carried out prior to the tests in EN 13071-1:2008				

Table 1 — Sequence of the tests

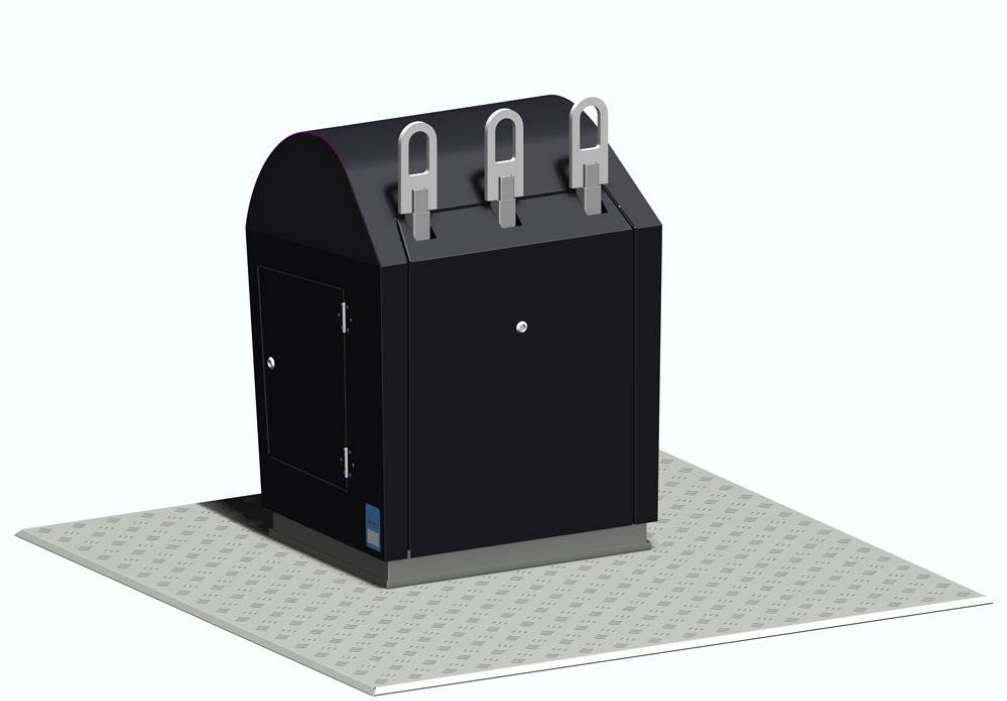
Reference	Test	Order of tests	
6.2.1	Resistance of the safety barrier	1	√
6.2.2	Resistance of the safety floor	2	
6.2.3	Functionality of the safety floor and safety barrier	3	
6.2.4	Resistance of the pedestrian platform	4	
6.2.5	Resistance of the emergent part to exterior impacts	5	
6.3	Corrosion	Dedicated sample/specimens	
6.4	Weathering	Dedicated sample/specimens	

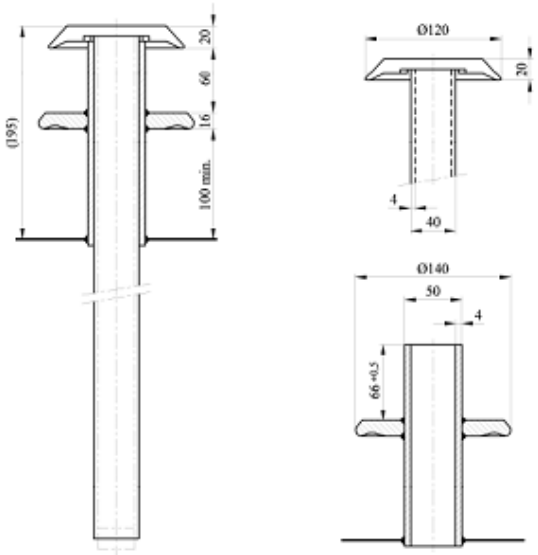
EN13071:2011 Part 3	pas	fail	N.A.	remarks
4.2.2 Loop				
4.2.2.1 Single loop				
Dimensions shall allow the handling of the container by hooks that are covered by EN 1677.   Legende R_i Innenradius = 45 mm ± 5 mm für mindestens 90° an der oberen Vertikalachse.	√			



4.2.2.2 Two loops in line	pass	fail	N.A.	remarks
Dimensions shall allow the handling of the container by hooks that are covered by EN 1677. Interaxial distance between the two loops is 240 mm ± 10 mm. 			X	
4.2.2.3 Two loops parallel				
Dimensions shall allow the handling of the container by hooks that are covered by EN 1677. Interaxial distance between the two loops is 100 mm ± 40 mm. 	√			

4.2.2.4 Three loops in line	pass	fail	N.A.	remarks
Dimensions shall allow the handling of the container by hooks that are covered by EN 1677. Interaxial distance between the loops is 280 mm ± 50 mm. 	√			



4.2.3 Mushroom	pass	fail	N.A.	remarks
Dimensions have to allow the handling of the container by a mushroom handling system. An example is shown in the Annex B. 	√