



BSI Standards Publication

Mobile waste and recycling containers

Part 3: Containers with 4 wheels with a capacity up to 1 300 l with dome lid(s), for trunnion and/or comb lifting devices — Dimensions and design

National foreword

This British Standard is the UK implementation of EN 840-3:2012. It supersedes BS EN 840-3:2004, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/508/1, Waste containers and associated lifting devices on refuse collection vehicles.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Date	Text affected
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EUROPEAN STANDARD

EN 840-3

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December 2012

ICS 13.030.40

Supersedes EN 840-3:2004

English Version

Mobile waste and recycling containers - Part 3: Containers with 4 wheels with a capacity up to 1 300 l with dome lid(s), for trunnion and/or comb lifting devices - Dimensions and design

Conteneurs roulants à ordures ménagères et recyclables -
Partie 3 : Conteneurs à 4 roues de capacité jusqu' à 1 300 l
à couvercle(s) bombé(s), pour lève-conteneurs par tourillon
et/ou à peigne - Dimensions et conception

Fahrbare Abfall- und Wertstoffbehälter - Teil 3: Behälter mit
4 Rädern und einem Nennvolumen bis 1 300 l mit
Schiebedeckel(n), für Schüttungen mit Zapfenaufnahme
und/oder für Kammschüttungen - Maße und Formgebung

This European Standard was approved by CEN on 22 September 2012.

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Foreword

This document (EN 840-3:2012) 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of an identical text or by endorsement, at the latest by June 2013, and conflicting national standards shall be withdrawn at the latest by June 2013.

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

This document supersedes EN 840-3:2004.

Technical changes since the latest edition:

- The content has been adapted to the current state of the art and revised editorially.
- Figure 3 has been deleted.
- Frontal receivers Form B and C have been deleted. Figure 2 (now Figure 4) has been changed accordingly.

This European Standard is one part of the series of standards of EN 840 with the main title *Mobile waste and recycling containers* comprising the following parts:

- *Part 1: Containers with 2 wheels with a capacity up to 400 l for comb lifting devices — Dimensions and design;*
- *Part 2: Containers with 4 wheels with a capacity up to 1 300 l with flat lid(s), for trunnion and/or comb lifting devices — Dimensions and design;*
- *Part 3: Containers with 4 wheels with a capacity up to 1 300 l with dome lid(s), for trunnion and/or comb lifting devices — Dimensions and design* (the present document);
- *Part 4: Containers with 4 wheels with a capacity up to 1 700 l with flat lid(s), for wide trunnion or BG-and/or wide comb lifting devices — Dimensions and design;*
- *Part 5: Performance requirements and test methods;*
- *Part 6: 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies dimensions and design requirements of mobile waste and recycling containers with 4 wheels, with dome lid(s) and capacity up to 1 300 l to be used by trunnion and/or comb lifting device.

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 840-2:2012, *Mobile waste and recycling containers — Part 2: Containers with 4 wheels with a capacity up to 1 300 l with flat lid(s), for trunnion and/or comb lifting devices — Dimensions and design*

EN 840-5, *Mobile waste and recycling containers — Part 5: Performance requirements and test methods*

EN 840-6:2012, *Mobile waste and recycling containers — Part 6: Safety and health requirements*

EN 1501-1, *Refuse collection vehicles — General requirements and safety requirements — Part 1: Rear loaded refuse collection vehicles*

EN 1501-5:2011, *Refuse collection vehicles — General requirements and safety requirements — Part 5: Lifting devices for refuse collection vehicles*

EN ISO 11469, *Plastics — Generic identification and marking of plastics products (ISO 11469)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

NOTE Terms for components of mobile waste containers and lifting devices in three languages are given in Annex A of EN 840-1:2012.

3.1 mobile waste container

appropriately designed container fitted with wheels intended to temporarily store waste

3.2 lifting device

structure which picks-up, tilts and empties containers

3.3 comb lifting device

lifting device in which the picking-up system consists of a row of teeth and a locking system to retain the container during emptying

3.4 trunnion lifting device

lifting device in which the picking-up system consists of a pair of arms with automatic locking mechanism to fit the trunnion to retain the container during emptying

3.5 volume

total space inside the container when the lid is closed

3.6

nominal volume

capacity

volume stated by the manufacturer

Note 1 to entry: See Table 1 without tolerances.

Note 2 to entry: The English term "capacity" and the French term "capacité" are translated in the German version by the term "Nennvolumen".

3.7

nominal mass

mass, which is calculated as given in Clause 6

3.8

total permissible mass

mass of the container plus the nominal load

3.9

functional and safety dimensions

essential dimensions which ensure the functionality and interchangeability of the container with the compatible lifting device and which are necessary for the operator's safety and health

4 Volumes

This part of EN 840 identifies the two classes of containers:

- Class I - small size (nominal volume up to 1 000 l);
- Class II - large size (nominal volume between 1 000 l and 1 300 l).

Within the two above-mentioned classes of containers the following volumes are identified: 770 l, 1 000 l, 1 100 l and 1 300 l. Nominal volumes different from those referenced can be used by agreement between user and manufacturer. The tolerance of the volumes shall be $\pm 5\%$ maximum measured according to EN 840-5.

5 Dimensions and design

5.1 The design of the containers need not correspond to the drawings given in Figures 1 to 3. The functional dimensions given in Table 1 shall be respected. Recommendations for manufacturers of lifting devices are given in Annex A (see also EN 1501-1).

5.2 The container shall be constructed so that when it is unloaded or loaded with a nominal load (see Clause 6), it fits on an approved compatible lifting device. It shall be automatically locked safely into the lifting device during the lifting operation. If the container is equipped with a comb receiver, it shall correspond to Figure 4 and Figure 6.

5.3 The lid(s) shall cover the opening of the container completely. It shall be opened easily by the lifting device during the emptying cycle. It/they shall be made with at least two fixing points and have at least one means of opening.

5.4 Handles fitted in front of the trunnion shall have a measurement over the handles of 10 mm less than the actual measurement in Table 1, dimension N° 33. The handles and their location also shall be designed so that they do not damage the operator.

5.5 If the container has ribs in the frontal receiver they shall meet the requirements of Figure 4 and Figure 6.

5.6 The container shall have 4 swivel castors. Each swivel castor shall be capable of withstanding 1/3 of the total permissible mass. Each castor shall meet the requirements of EN 840-5. The container shall have facilities for mounting the castor platine according to at least one of the measurements as shown in Figure 7.

5.7 All the surfaces of the container including design features shall be smooth and free of any foreign bodies or flaws.

5.8 The container should have a drain plug.

5.9 When direction locks are fitted they shall be fixed on at least two castors.

5.10 The container should be fitted with two braked wheels to requirements of EN 840-5. In case of centralized braking and locking system the brake pedal and the lock shall be fixed on a lateral side of the container. The centralized locking shall be able to be unlocked with a standard triangular key as shown in Figure 8. The effectiveness of this centralized braking system shall conform to EN 840-5.

6 Nominal mass

The container shall be constructed strongly enough to carry a mass of $0,4 \text{ kg/dm}^3 \times \text{nominal volume}$. Containers with a nominal volume of more than 1 100 l shall be constructed strongly enough to carry a load of 440 kg.

7 Safety and health requirements

The container shall meet the safety and health requirements according to EN 840-6.

8 Testing

The container shall fulfil the performance requirements and the tests of EN 840-5.

9 Marking

9.1 Each container complying with the requirements of this part of EN 840 shall be durably and readably marked on the body in a visible part with:

- number of this European Standard (EN 840-3);
- nominal volume;
- manufacturer's name or trademark;
- total permissible mass, in kilograms;
- year and month of manufacturing.

9.2 Additional marking for quality, recycling, etc. is allowed. Starting five years after the publication of this standard, plastic parts of containers, lids and wheels shall be marked in accordance with EN ISO 11469. The use of recycled materials is allowed, presuming that all requirements of this standard are complied with.

10 Designation

The container complying with the requirements of this European Standard shall be designated as follows:

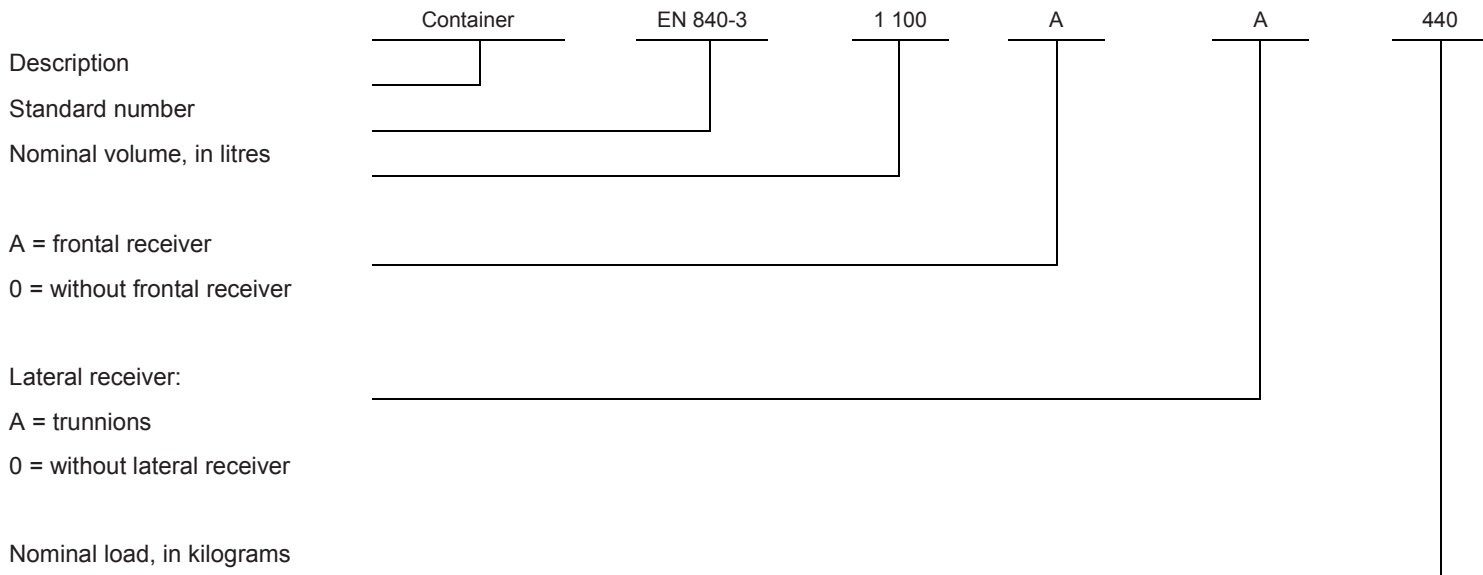


Table 1 — Dimensions

Dimensions in millimetres

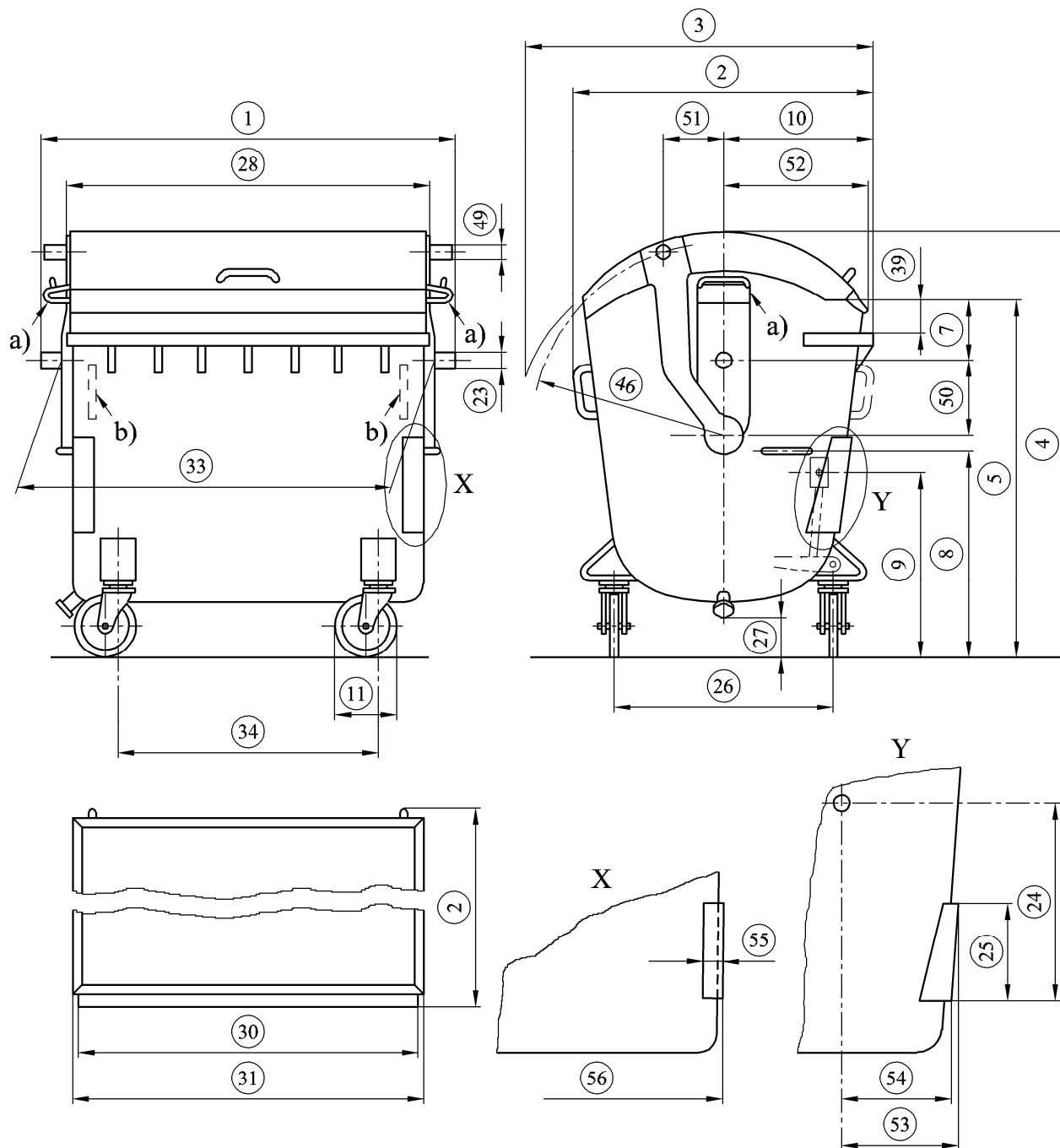
Dimension N ^o a	Class I - Small sizes < 1 000 l	Class II - Large sizes ≥ 1 000 l		Remarks
	770 l	1 100 l	1 300 l	
1	1 370 ± 10	1 370 ± 10	1 370 ± 10	In case of trunnions
2	820 max.	1 115 max.	1 115 max.	
3	1 100 max.	1 245 max.	1 245 max.	
4	1 425 max.	1 470 max.	1 480 max.	
5	860 min.; 1 290 max.	860 min.; 1 290 max.		Tipping edge
6	-	855 ± 50	855 ± 50	Only design B
7	135 min.; 280 max.	135 min.; 280 max.	135 min.; 280 max.	
8	550 min.; 700 max.	650 min.; 850 max.	650 min.; 850 max.	Handle position if required
9	600 to 850	600 to 850	600 to 850	Lock position if presented
10	405 ⁺²⁵ ₋₅	550 ⁺¹⁰ ₋₄₀	550 ⁺¹⁰ ₋₄₀	For design A
	-	500 ± 15	500 ± 15	For design B
11	∅ 200 ± 2 ^{*)}	∅ 200 ± 2 ^{*)}	∅ 200 ± 2 ^{*)}	^{*)} ∅ min 160 optional according to 5.3 of EN 840-6:2012
12	19 min.	19 min.	19 min.	In case of frontal receiver
13	13 ⁺⁵ ₋₃	13 ⁺⁵ ₋₃	13 ⁺⁵ ₋₃	In case of frontal receiver
14	21 ⁺² ₋₂	21 ⁺² ₋₂	21 ⁺² ₋₂	In case of frontal receiver
15	-	-	-	This dimension is no more used
16	26 ± 1	26 ± 1	26 ± 1	In case of frontal receiver
17	58 max.	58 max.	58 max.	In case of frontal receiver
18	20 min.	20 min.	20 min.	In case of frontal receiver
19	130 max.	130 max.	130 max.	When ribs are fitted
20	15 max.	15 max.	15 max.	
21	33 ⁺⁸ ₋₁	33 ⁺⁸ ₋₁	33 ⁺⁸ ₋₁	In case of frontal receiver. For design B
23	∅ 40 ± 2	∅ 40 ± 2	∅ 40 ± 2	In case of trunnions
24	670 ⁺³⁰ ₀	670 ⁺³⁰ ₀	670 ⁺³⁰ ₀	The front of the plastic container beneath the ribs of the lifting comb shall be smooth. No constructions shall protrude in this area.
25	350 ⁺⁴⁰ ₋₁₀	350 ± 10	350 ± 10	Clearance for lifting device
26	535 ± 85	750 ⁺⁵⁰ ₋₄₀	750 ⁺⁵⁰ ₋₄₀	
27	130 min.	130 min.	130 min.	Ground clearance
28	1 275 max.	1 275 max.	1 275 max.	Lid
29	1 185 min.	1 185 min.	1 185 min.	Inside operating length of frontal receiver
30	1 200 ⁺¹⁵ ₀	1 200 ⁺¹⁵ ₀	1 200 ⁺¹⁵ ₀	Overall frontal receiver

Table 1 (continued)

Dimensions in millimetres

Dimension N ^a	Class I - Small sizes < 1 000 l	Class II - Large sizes ≥ 1 000 l		Remarks
	770 l	1 100 l	1 300 l	
31	1 265 max.	1 265 max.	1 265 max.	Overall length of the body rim or handles
32	5 ⁺⁸ ₀	5 ⁺⁸ ₀	5 ⁺⁸ ₀	Optional (see Annex A of EN 840-2:2012)
33	1 260 ⁺²⁰ ₋₁₀	1 260 ⁺²⁰ ₋₁₀	1 260 ⁺²⁰ ₋₁₀	Around the center lifting trunnion there shall be a radius of 150 mm. there shall not be any projection beyond the trunnion boss (see Figure 5).
34	880 ⁺²⁰ ₋₅₀	880 ⁺²⁰ ₋₅₀	950 ± 120	
35	1 090 ± 70	1 090 ± 70	1 090 ± 70	The outer corners shall be designed according to dimension W2 of EN 1501-5:2011, Table Fig. A.3-1.
36	150 ± 3	150 ± 3	150 ± 3	When ribs are fitted (centres)
37	7 max.	7 max.	7 max.	When ribs are fitted
38	6 ⁺² _{-4,5}	6 ⁺² _{-4,5}	6 ⁺² _{-4,5}	In case of frontal receiver
39	160 ⁺⁵ ₋₃₀	130 max.	130 max.	In case of frontal receiver
40	R 4 max.	R 4 max.	R 4 max.	In case of frontal receiver
41	10 min.	10 min.	10 min.	
42	∅ 16 max.	∅ 16 max.	∅ 16 max.	
43	∅ 6,6 ^{+0,2} ₀	∅ 6,6 ^{+0,2} ₀	∅ 6,6 ^{+0,2} ₀	
44	8,3 ^{+0,1} ₀	8,3 ^{+0,1} ₀	8,3 ^{+0,1} ₀	
45	≈ 50	≈ 50	≈ 50	
46	635 ⁺¹⁰ ₋₁₅	635 ⁺¹⁰ ₋₁₅	635 ⁺¹⁰ ₋₁₅	
47	-	0 to 40	0 to 40	Only design B
48	-	0 to 25	0 to 25	Only design B
49	∅ 40 ± 2	∅ 40 ± 2	∅ 40 ± 2	
50	240 ± 5	215 ⁺³⁰ ₀	215 ⁺³⁰ ₀	
51		205 ± 10	205 ± 10	For design A and C
	265 ⁺⁵⁰ ₀	260 ± 10	260 ± 10	For design B
52	400 ⁺⁵ ₋₃₅	500 ⁰ ₋₄₀	500 ⁰ ₋₄₀	
53	345 ⁺³⁰ ₋₅	440 ± 5	440 ± 5	Bracket position
54	310 ⁺³⁰ ₋₅	400 ± 5	400 ± 5	Bracket position
55	80 ⁺¹⁰ ₀	80 ⁺¹⁰ ₀	80 ⁺¹⁰ ₀	Bracket position
56	1 200 ⁺¹⁰ ₋₂₀	1 200 ⁺¹⁰ ₋₂₀	1 200 ⁺¹⁰ ₋₂₀	Bracket position
57	50±5	-	-	Only design C

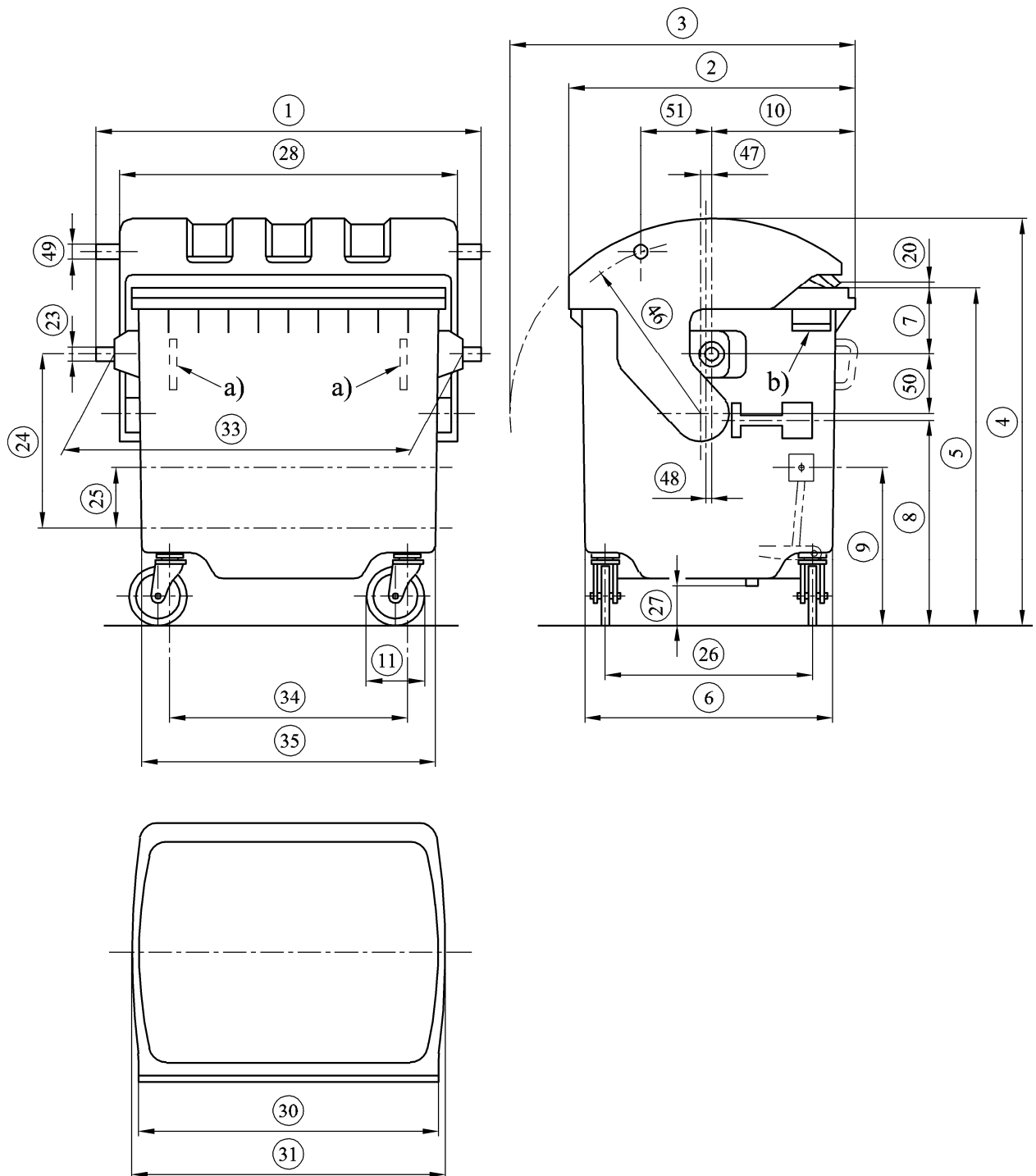
^a Compulsory dimensions for functional and safety reasons. The other dimensions indicated are suggested recommended values.



Key

- a) requirements for handle if it is above trunnion (see EN 840-6:2012, Figure 3)
- b) handles to be fitted if the container is without frontal receiver

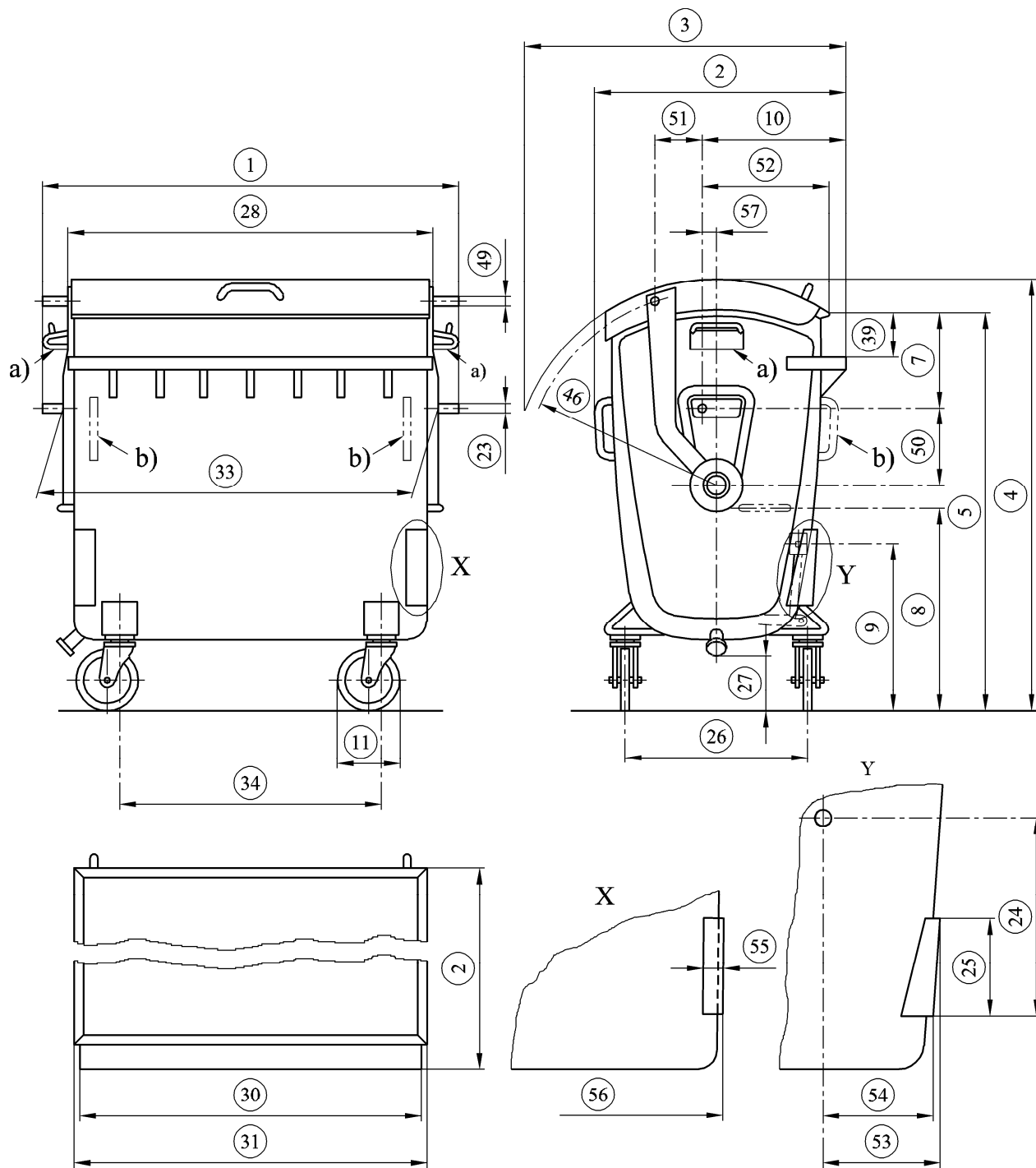
Figure 1 — System dimensions design A (type metal)



Key

- a) handles to be fitted if the container is without frontal receiver (see EN 840-6:2012, Figure 3)
- b) requirements for handle if in front of trunnion (see 5.4)

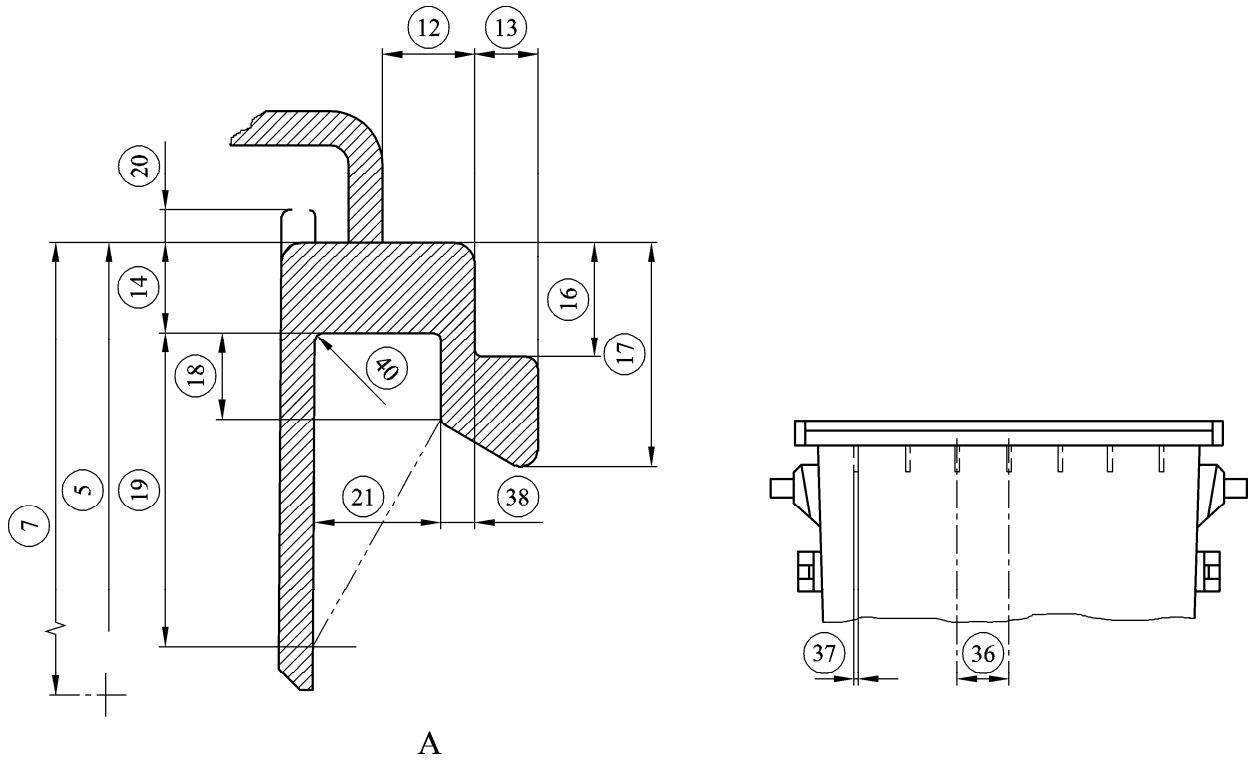
Figure 2 — System dimensions design B (type plastic)



Key

- a) requirements for handle if above trunnion (see EN 840-6:2012, Figure 3)
- b) handles to be fitted if the container is without frontal receiver.

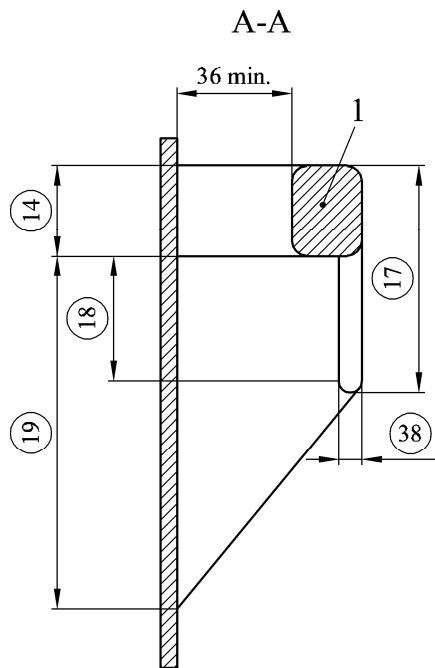
Figure 3 — System dimensions design C (type metal)



Key
A form A

Figure 4 — Frontal receiver

Dimensions in millimetres



Key
1 handle

Figure 5 — Handle

Dimensions in millimetres

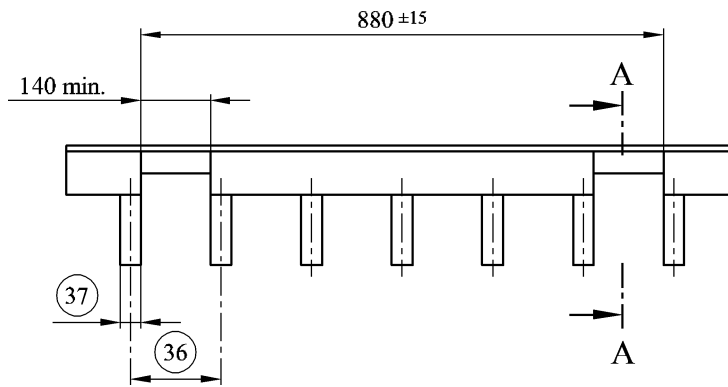


Figure 6 — Frontal receiver with integrated handles

Dimensions in millimetres

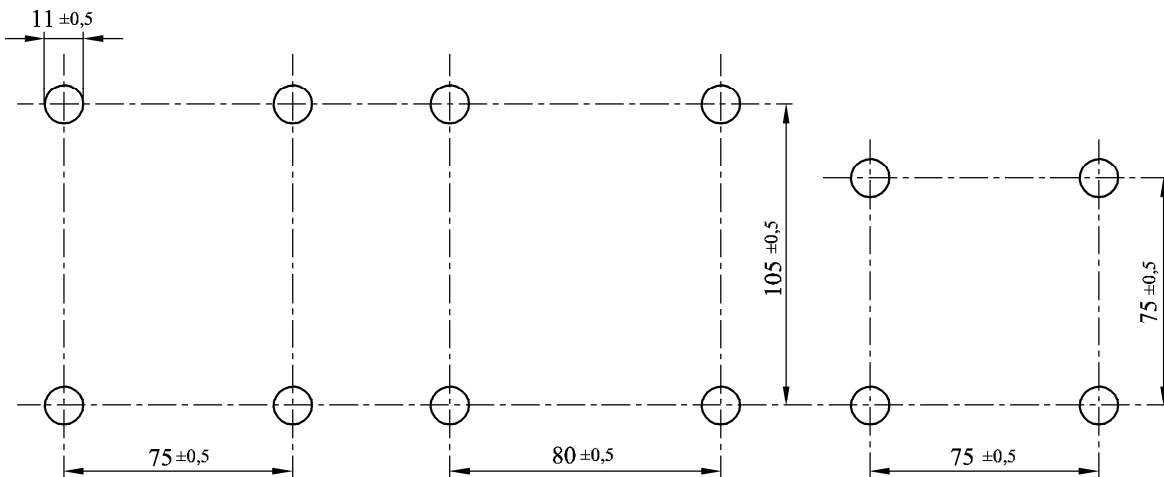


Figure 7 — Distance between centres of castor wheels

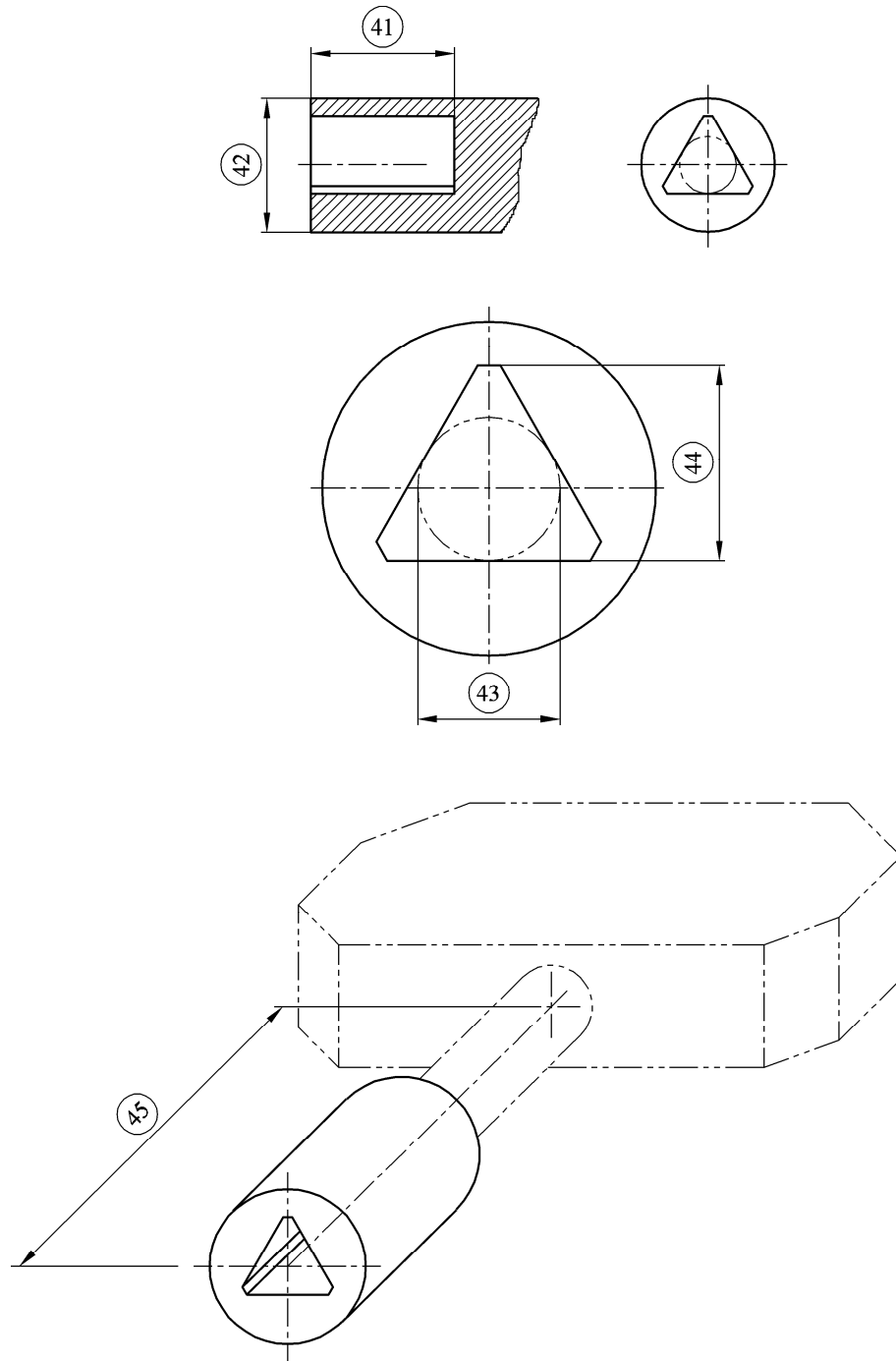
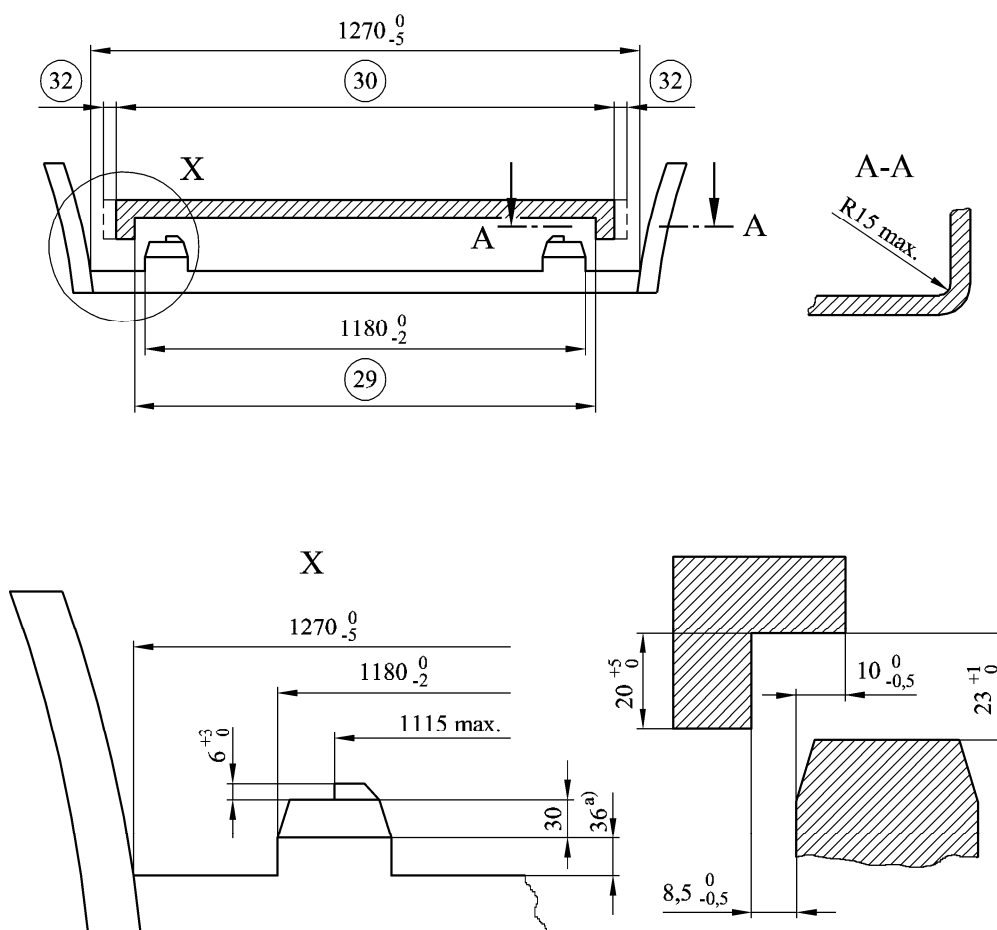


Figure 8 — Standard triangular key

Annex A (informative)

Recommendations for manufacturers of lifting devices

Dimensions in millimetres



Key

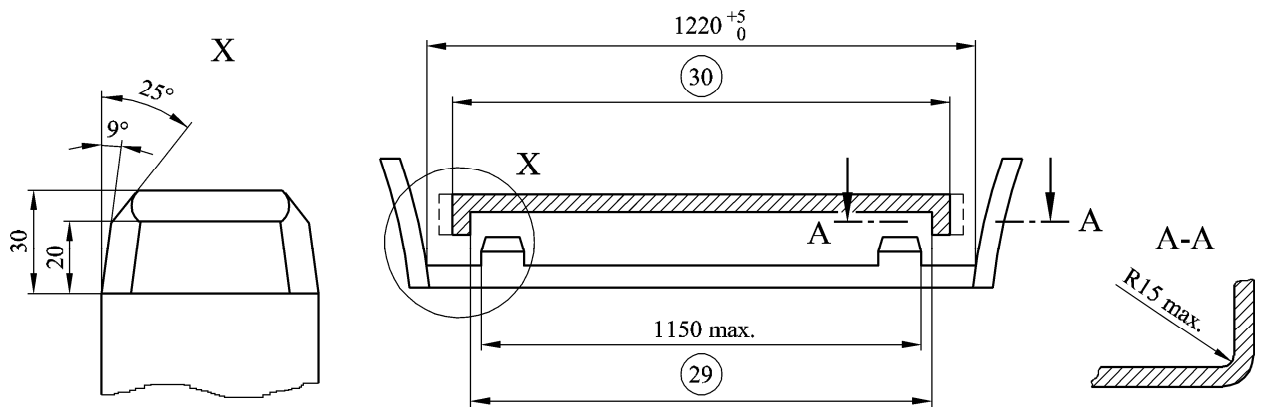
a) nominal

NOTE For more details regarding the dimensions 29, 30 and 32, see Table 1.

Figure A.1 — Form D, general

For any single container not exceeding dimension N° 30 and any combination of containers (maintaining a minimum gap between them of 10 mm) which do not exceed a dimension of 1 200 mm.

Dimensions in millimetres



NOTE For more details regarding the dimensions 29 and 30, see Table 1.

Figure A.2 — Form E

Annex B (informative)

A-Deviations

A-Deviation: National deviation due to regulations, the alteration of which is for the time being outside the competence of the CEN-CENELEC-member.

This European Standard does not fall under any Directive of the EU. In the relevant CEN-CENELEC-countries these A-deviations are valid instead of the provisions of the European Standard until they have been removed.

DENMARK

EN 840-1 to EN 840-6 do not fulfil the national Danish legislation regarding requirements for health and safety. This legislation is based on *EEC-Directive 89/391/EC of 12 June 1989* and *EEC-Directive 90/269/EEC of 29 May 1990*.

The Danish legislation is written down in "Executive Order No. 867 of 13 October 1994 concerning Performance of Work" and in "Executive Order No. 1164 of 16 December 1994 concerning Manual Handling" both given by the Minister of Work. The Legal understanding of the Executive Orders are written in the Danish Working Environment Service (WES) guidelines. WES-guideline No. 4.1.0.1 of 1993 describes "Manual handling and transportation of domestic garbage" and No. 4.1.0.2 describes "Construction of technical systems and equipment for handling domestic garbage" (former WES circular-order No. 10/1990).

Therefore the manual handling and use of containers described in EN 840-1 to EN 840-6 can be met in Denmark with additional requirements.

Bibliography

- [1] EN 840-1:2012, *Mobile waste and recycling containers — Part 1: Containers with 2 wheels with a capacity up to 400 l for comb lifting devices — Dimensions and design*
- [2] EN 1501-2, *Refuse collection vehicles and their associated lifting devices — General requirements and safety requirements — Part 2: Side loaded refuse collection vehicles*
- [3] EN 1501-3, *Refuse collection vehicles and their associated lifting devices — General requirements and safety requirements — Part 3: Front loaded refuse collection vehicles*
- [4] EN 14803, *Identification and/or determination of the quantity of waste*

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