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**Packaging — Plastics drums —**

Part 1:

**Removable head (open head) drums with  
a nominal capacity of 113,6 l to 220 l**

*Emballages — Fûts en matière plastique —  
Partie 1: Fûts à ouverture totale d'une capacité nominale de 113,6 l  
à 220 l*

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 20848-1 was prepared by Technical Committee ISO/TC 122, *Packaging*.

ISO 20848 consists of the following parts, under the general title *Packaging — Plastics drums*:

- *Part 1: Removable head (open head) drums with a nominal capacity of 113,6 l to 220 l*
- *Part 2: Non-removable head (tight head) drums with a nominal capacity of 208,2 l and 220 l*
- *Part 3: Plug/bung closure systems for plastics drums with a nominal capacity of 113,6 l to 220 l*

## Introduction

Throughout the world, a large number of plastics drum types with different dimensions and characteristics are being used. The differences in the minimum filling opening and outer dimensions result in differences in filling, handling and transportation.

ISO 20848 specifies the characteristics and dimensions of plastics drums which are of importance for the worldwide safe handling and transport of substances and for the continued reuse of the drums during their life cycle. Detailed performance requirements and the related test methods are not included as they depend upon the specific application.

Where the drums are intended to be used for the transport of dangerous goods, attention is drawn to the regulatory requirements which govern the transport of those goods in the countries concerned, including capseals/overseals fitted in accordance with the certificate. Depending upon the mode of transport, this means meeting the requirements of:

- **UN** (United Nations) — *Recommendations on the Transport of Dangerous Goods*,
- **ICAO** (International Civil Aviation Organization) — *Technical Instructions for the Safe Transport of Dangerous Goods by Air*,
- **IMO** (International Maritime Organization) — *International Maritime Dangerous Goods (IMDG) Code*.

This involves the certification and marking of the drums according to the regulations.

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# Packaging — Plastics drums —

## Part 1:

# Removable head (open head) drums with a nominal capacity of 113,6 l to 220 l

## 1 Scope

This part of ISO 20848 specifies the characteristics and dimensions of removable head (open head) plastics drums with a nominal capacity of 113,6 l to 220 l.

## 2 Normative references

The following referenced documents are indispensable for the application 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 20848-3, *Packaging — Plastics drums — Part 3: Plug/bung closure systems for plastics drums with a nominal capacity of 113,6 l to 220 l*

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## 3 Terms and definitions

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

### 3.1

#### removable head (open head) drum

##### OH

flat-ended or convex-ended circular cross-section packaging, the top end of which can be removed as a lid and is closed by means of a closing ring or other device

### 3.2

#### nominal capacity

##### NC

capacity in litres which, by convention, is used to represent a class of drums of similar brimful capacities

### 3.3

#### brimful capacity

##### BC

volume of water in litres held by the drum when filled through the filling orifice to the point of overflowing

NOTE Annex A specifies the method for measuring brimful capacity.

**3.4**  
**total capacity**  
**TC**

volume of water in litres held by the drum, with its lid on, when filled completely, i.e. following the removal of any air trapped in the drum

NOTE Annex A specifies the method for measuring total capacity.

**3.5**  
**overall height,  $h_o$**

height of the finished drum, including the lid with closing ring secured, from the base to the highest point

NOTE See Figure 1.

**3.6**  
**overall diameter,  $d_o$**

maximum diameter of the drum, where relevant

NOTE See Figure 1.

**3.7**  
**minimum opening,  $d_m$**

minimum drum body opening size

NOTE See Figure 1.

**3.8**  
**drum mass**

mass of the empty drum including all closures

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**4 Requirements**

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**4.1 Dimensions**

The dimensions and tolerances of the drum shall be as listed in Table 1 and as shown in Figure 1. The measurements shall be conducted at ambient conditions but shall not be made within 48 h of manufacture.

NOTE Apart from the dimensions specified, there are no restrictions on drum shape.

**Table 1 — Dimensions of removable (open head) drums with a nominal capacity of 113,6 l to 220 l (30 US gal to 58,1 US gal)**

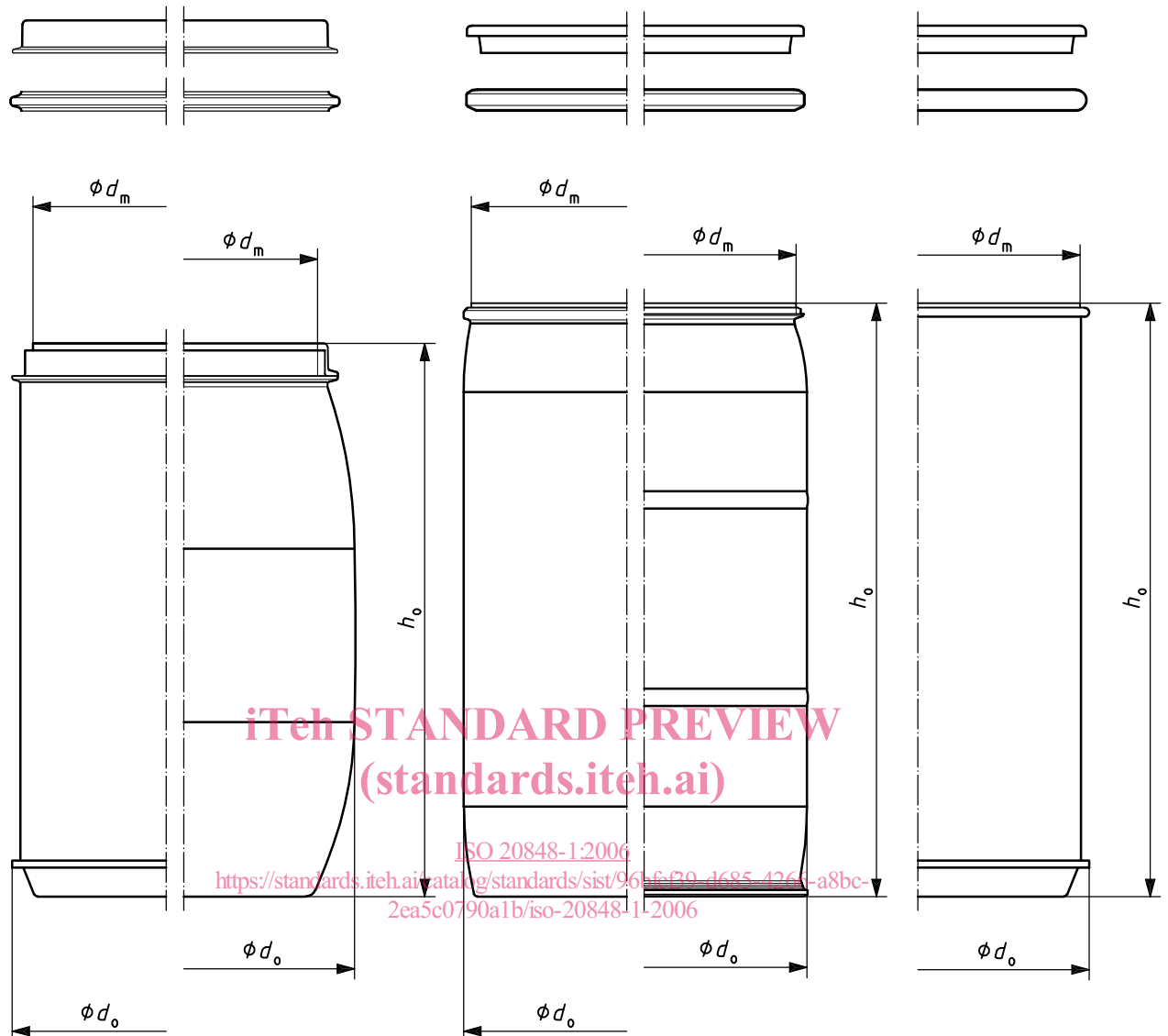
Nominal capacity, NC l (US gal)	Minimum total capacity, TC l (US gal)	Overall diameter, $d_o$ mm	Minimum opening, $d_m$ mm	Overall height, $h_o$ mm
113,6 (30)	118,1 (31,2)	$480 \pm 10^a$	$450 \pm 10^a$	$745 \pm 10^a$
120 (31,7)	125 (33)	$495 \pm 5$	380	$805 \pm 10^a$
132,5 (35)	137,8 (36,4)	$480 \pm 10^a$	$450 \pm 10^a$	$850 \pm 10^a$
150 (39,6)	155 (41)	$500 \pm 10$	380	$965 \pm 10^a$
208,2 (55)	216,5 (57,2)	$575 \pm 10^a$	$545 \pm 10^a$	$900 \pm 10^a$
220 (58,1)	224 (59,2)	$581 \pm 5$	380	$935 \pm 10^a$
220 (58,1)	224 (59,2)	$595 \pm 5$	380	$985 \pm 10^a$

NOTE 1 Dimensions  $d_o$ ,  $d_m$  and  $h_o$  are applicable to empty drums.

NOTE 2 1 US gal = 3,785 l.

<sup>a</sup> It is intended that these tolerances may be reduced to  $\pm 5$  mm after the five-year review period.



**Key** $d_o$  overall diameter $d_m$  minimum opening $h_o$  overall height (with lid on and closing ring secured)**Figure 1 — Removable head (open head) drum****4.2 Drum mass**

The mass tolerance of the drum shall be  $\pm 3\%$ .

NOTE The defined mass should be agreed between the purchaser and the supplier.

**4.3 Material identification symbol**

All the plastics components, excluding gaskets, shall be permanently marked with the relevant material identification symbol, i.e. the symbol identifying the material from which the component is made, as shown in Annex B.