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Packaging — Plastics drums —

Part 3: Plug/bung closure systems for plastic drums with a nominal capacity of 113,6 l to 220 l

Emballages — Fûts en matière plastique —

Partie 3: Systèmes de fermeture à bondes pour fûts en matière plastique d'une capacité nominale de 113,6 l à 220 l

ICS 55.140

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 ISO/DIS 20848-3

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 20848-3 was prepared by Technical Committee ISO/TC 122, *Packaging*.

ISO 20848 consists of the following parts, under the general title *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*

Annexes A to H form normative parts of this part of ISO 20848.

Introduction

Throughout the world a large number of plastics drums types with different dimensions and characteristics are being used. The differences in types of closures may result in differences in filling and handling.

This standard specifies the characteristics and dimensions of closures for 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 Organisation) – Technical Instructions for the safe transport of dangerous goods by air.
- **IMO** (International Maritime Organisation) – 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 3:

Plug/bung closure systems for plastic drums with a nominal capacity of 113,6 l to 220 l

1 Scope

This International Standard specifies the characteristics and dimensions of plug/bung closure systems i.e. for internally threaded openings in plastics drums.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads - Part 1: Dimensions, tolerances and designation*

ISO 16104, *Packaging – Transport packaging for dangerous goods – Test methods*
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3 Terms and definitions

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

3.1

plug/bung closure system (BCS)

system of one or more components which enables an internally threaded container to be filled or emptied and then secured to provide a leakproof seal for subsequent transport or storage (see figures A.1-G.1).

3.2

plug/bung

device, provided with an external thread, which closes an opening in a drum

3.3

plug/bung housing or neck

that part of the container designed to receive the plug/bung

3.4

gasket (washer)

component which, under compression, facilitates a leakproof seal between the plug/bung and plug/bung housing

3.5

gasket sealing faces

those areas of the plug/bung or plug/bung housing designed to contact the gasket and make the seal

3.6 capseals/overseals

cap or fitting attached to the plug/bung housing which incorporates a facility for providing tamper evidence and provides protection against the ingress of foreign matter into the closure

4 Requirements

4.1 Dimensions

The dimensions and tolerances of the closure systems shall conform to the appropriate Annexes as given in table 1.

Measurements shall be conducted at ambient conditions but shall not be made within 48 h of manufacture.

For plug/bung housings, diameter measurements shall be the mean of at least two readings orientated at 90 ° to each other.

Table 1

Type BCS	Annex
BCS 70 x 6	A
BCS 56 x 4	B
BCS 38 x 6	C
BCS 24 x 4	D
BCS G2 x 5	E
BCS G2 x 11,5	F
BCS G3/4 x 14	G

4.2 Gaskets

Gaskets shall be positioned correctly on the plug/bung.

4.3 Closure torque

A closure torque, including tolerance, shall be recommended. In addition the appropriate tooling for closing shall be specified.

4.4 Material identification symbol

All the plastics components, excluding gaskets, of the closure systems 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 H.

4.5 Materials

The plug/bung and gasket, where used, shall be manufactured from materials appropriate to the physical and chemical requirements of their intended use.

4.6 Thread

See figures A.1 to G.2.

4.7 Plug/bungs

The plug/bung shall be designed so that they can be inserted or removed by means of a simple tool.

4.8 Vented plug/bungs

For ease of identification when fitted in drums, vented plugs should be coloured yellow.

NOTE 1 Vented plugs used for drums destined to contain dangerous goods should be in accordance with the applicable regulations.

NOTE 2 Plastic plugs should be fitted with special holed cap seals/overseals to ensure venting is not impeded.

4.9 Finish

The nature of the internal and external finish of the plug/bung and gasket shall be appropriate to the physical and chemical requirements of their intended use.

NOTE The nature of the internal and external finish should be agreed between the purchaser and the supplier.

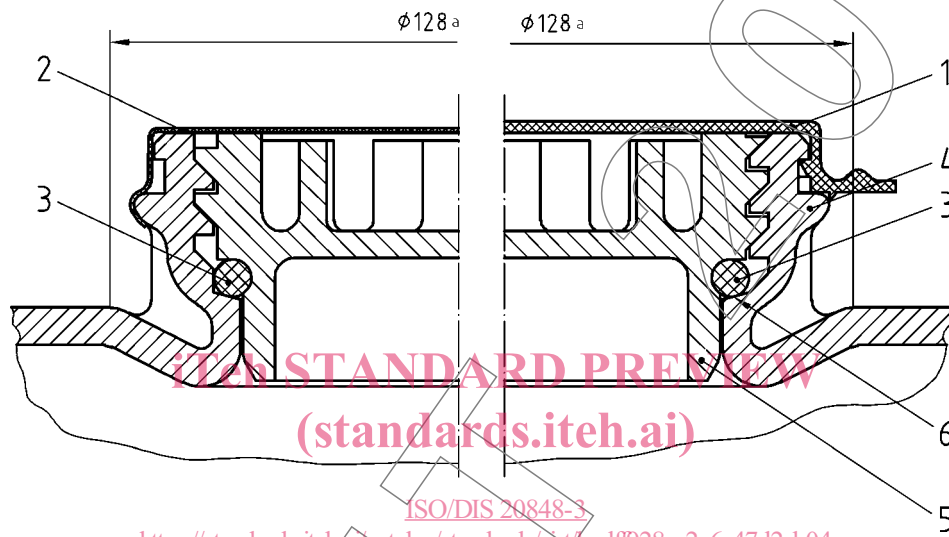
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Annex A
(normative)

Plug/bung closure system BCS 70 x 6

A.1 Nomenclature for closure system



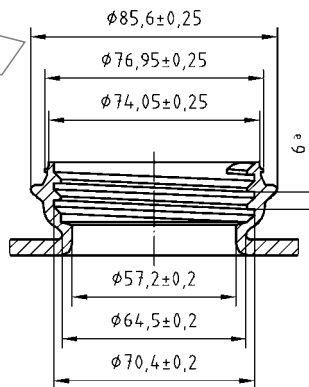
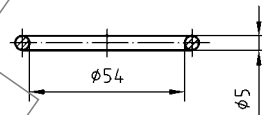
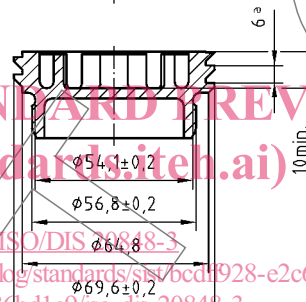
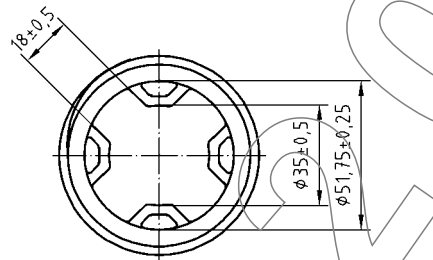
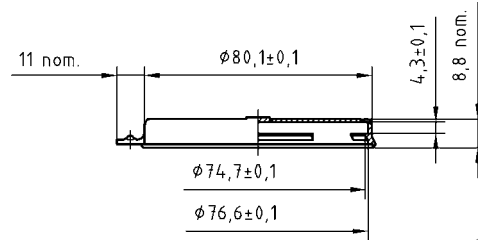
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Key

- 1 plastics capseal
- 2 metal plastics capseal
- 3 gasket
- 4 bung housing
- 5 bung
- 6 gasket sealing faces
- a min. clearance for crimping tool

Figure A.1 — Plug/bung closure system BCS 70 x 6 / General view

A.2 Dimensions for closure system



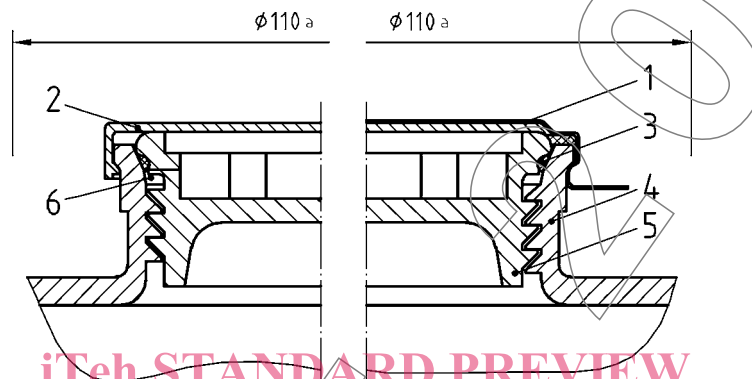
Key
a pitch

Figure A.2 — Plug/bung closure system BCS 70 x 6 with plastics capseal

Annex B
(normative)

Plug/bung closure system BCS 56 x 4

B.1 Nomenclature for closure system



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Key

- 1 metal capseal
- 2 plastics capseal
- 3 gasket
- 4 bung housing
- 5 bung
- 6 gasket sealing faces
- a min. clearance for crimping tool

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Figure B.1 — Plug/bung closure system BCS 56 x 4 / General view