
International Standard



6556

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Laboratory glassware — Filter flasks

Verrerie de laboratoire — Fioles à filtrer

First edition — 1981-07-15

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UDC 542.231.3 : 542.67

Ref. No. ISO 6556-1981 (E)

Descriptors : glassware, laboratory glassware, filter flasks, construction, dimensions, capacity, specifications.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 6556 was developed by Technical Committee ISO/TC 48, *Laboratory glassware and related apparatus*, and was circulated to the member bodies in July 1979.

It has been approved by the member bodies of the following countries:

Australia	Hungary	Poland
Brazil	India	Romania
Canada	Israel	South Africa, Rep. of
Chile	Italy	Spain
Czechoslovakia	Korea, Rep. of	United Kingdom
Egypt, Arab Rep. of	Libyan Arab Jamahiriya	USSR
France	Mexico	
Germany, F. R.	Netherlands	

The member body of the following country expressed disapproval of the document on technical grounds:

USA

Laboratory glassware — Filter flasks

1 Scope and field of application

This International Standard specifies requirements for filter flasks for general laboratory purposes.

2 References

ISO 383, *Laboratory glassware — Interchangeable conical ground joints.*

ISO 718, *Laboratory glassware — Methods for thermal shock tests.*¹⁾

3 Series of capacities

The series of capacities of filter flasks is as follows :

100, 250, 500, 1 000 and 2 000 ml.

4 Construction

4.1 Pressure resistance

Filter flasks shall be so constructed as to withstand a pressure differential (external-internal) of 2 bar*, i.e. twice the pressure in normal use, when tested in accordance with the test method specified in the annex.

For this purpose, the essential dimensions given in table 1 shall be observed.

4.2 Material

Filter flasks shall be made from glass of suitable chemical and thermal properties.

Internal stress and visible defects in the glass (such as bubbles near the surface) shall be reduced to a level sufficient to minimize the possibility of fracture due to thermal or mechanical shock.

NOTE — If information is required by the purchaser on the thermal shock resistance of filter flasks of any particular size and wall thickness, a test should be carried out in accordance with ISO 718. The temperature differential to be applied in the test should be the subject of agreement between the interested parties.

4.3 Shape

Filter flasks shall be conical. The base of the flasks shall be so constructed that they stand vertically without rocking or spinning when placed on a level surface (see figure 1).

4.4 Radius of curvature of base

The base of the flask shall have a suitable radius of curvature in order to provide a smooth transition between the base and the side. The radius shall be not less than that given in table 1.

4.5 Wall thickness

The flask shall be blown so as to achieve a good distribution of glass in the mould without sudden changes in wall thickness. In order to meet the requirements of 4.1, the thinnest areas, at the maximum outside diameter, shall have a thickness not less than the minimum value specified in table 1.

1) At present at the stage of draft. (Revision of ISO/R 718.)

* 1 bar = 10⁵ Pa

4.6 Vacuum connection (side-arm)

The vacuum connection shall be placed just below the finish of the neck (see figure 1).

Three types of vacuum connection are described, as follows :

- a) Tubulure side-arm

This shall be constructed as shown in figure 2.

- b) Integral side-arm

Integral side-arms may be provided

- with an olive end (see figure 3);
- with a corrugated tubulation (see figure 4);
- with a glass round thread (see figure 5).

- c) Detachable side-arm

A typical arrangement with a resilient grommet is shown in figure 6. A detachable side-arm may also be provided with an appropriate glass round thread.

Other types of connection may be chosen on national option.

4.7 Neck

The top of the neck shall be suitably strengthened as shown in figure 1.

The neck may be slightly tapered or cylindrical or, alternatively, it may be manufactured with an interchangeable joint of appropriate size selected from ISO 383.

5 Dimensions

The flask shall comply with the dimensions given in table 1. The remaining dimensions, listed in table 2, are included for the guidance of manufacturers, but a filter flask which, on visual inspection, shows any gross departure from them shall be deemed not to comply with this International Standard.

Recommended dimensions for the tubulure side-arm are shown in figure 2 and for integral side-arms in figures 3 and 4 and table 3.

6 Inscriptions

The following inscriptions shall be permanently and legibly marked on all filter flasks :

- a) the nominal capacity of the flask, for example "100 ml";
- b) the maker's and/or vendor's name or mark;
- c) the type of glass from which the flask is made, if not identified by the maker's name or mark.

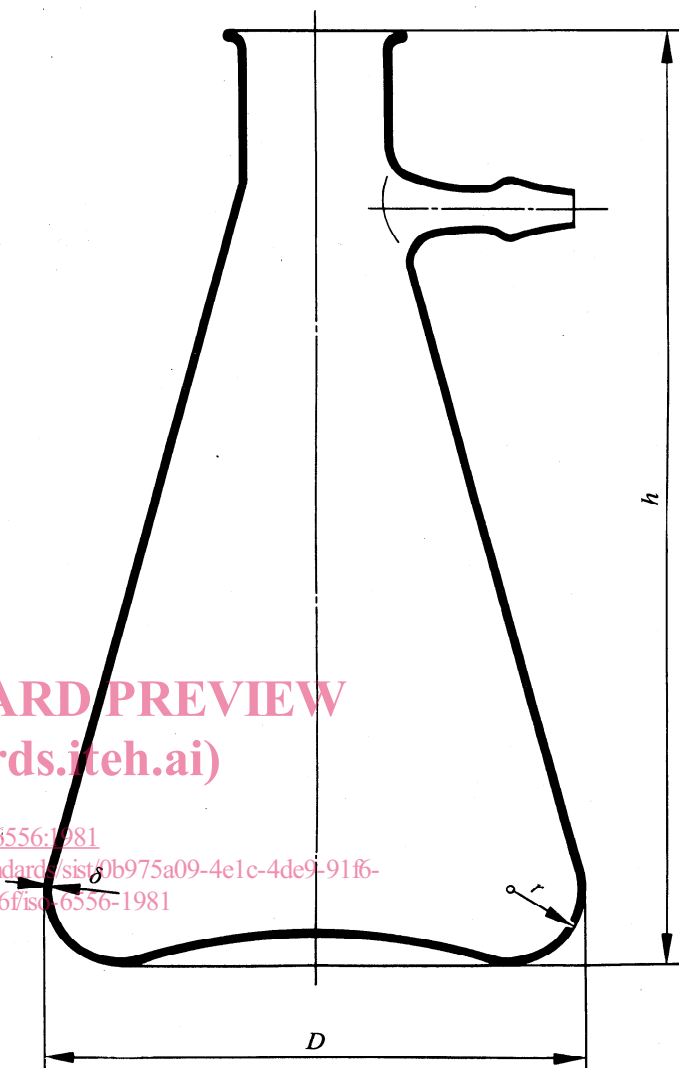


Figure 1 – Conical-shape filter flask

Table 1 – Filter flasks – Essential dimensions

Dimensions in millimetres

Essential dimensions	Nominal capacity				
	100 ml	250 ml	500 ml	1 000 ml	2 000 ml
Minimum wall thickness δ at maximum outside diameter D	1,8	1,8	2,0	2,0	2,5
Radius of curvature of base r min.	12	12	15	20	23

Table 2 – Filter flasks – Recommended dimensions

Dimensions in millimetres

Recommended dimensions	Nominal capacity				
	100 ml	250 ml	500 ml	1 000 ml	2 000 ml
Overall height <i>h</i>	105	145	175	230	275
External diameter <i>D</i>	70	85	105	135	165
Internal diameter at top of neck	24	35	35	45	45

Dimensions in millimetres

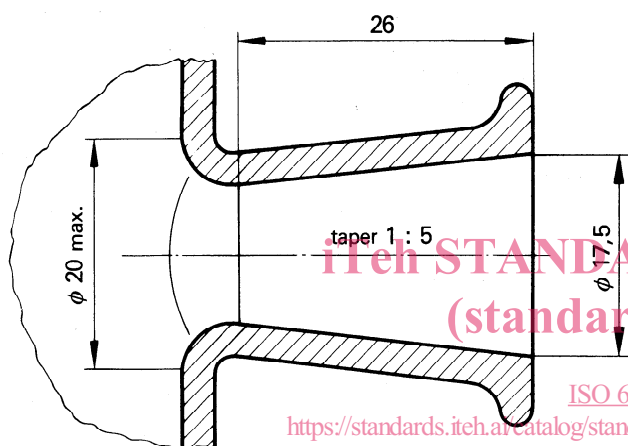
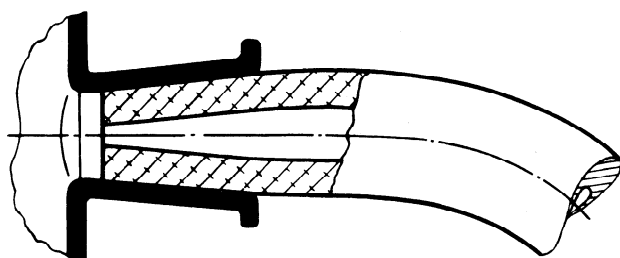


Figure 2 – Tubulure side-arm

NOTE – The method of use of filter flasks with tubulure side-arm is as follows :

The vacuum rubber tubing is simply inserted into the tubulure side-arm as shown in the following sketch.



The connection is sufficiently tight due to the outside pressure.

The use of tubulure side-arms of filter flasks presents two main advantages :

- the risk of breaking and, thus, the danger of injury to the operator is minimized;

– vacuum connection or disconnection can very easily be made by one-hand operation.

Dimensions in millimetres

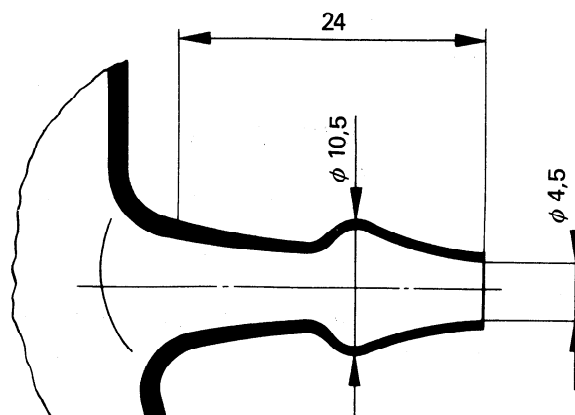


Figure 3 – Integral side-arm with olive ending – Recommended dimensions

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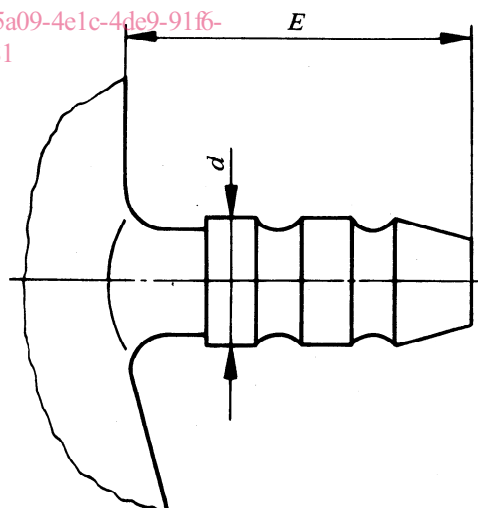


Figure 4 – Integral side-arm with corrugated tubulation

Table 3 – Integral side-arm with corrugated tubulation – Dimensions

Dimensions in millimetres

Dimension	Nominal capacity				
	100 ml	250 ml	500 ml	1 000 ml	2 000 ml
<i>E</i>	27				32
<i>d</i>	10				

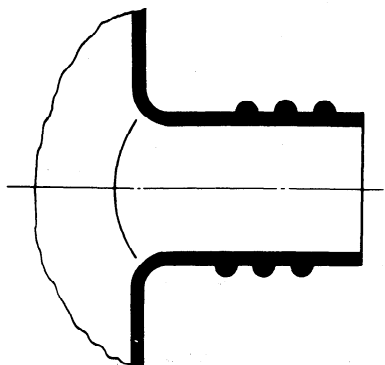


Figure 5 — Integral side-arm with glass round thread

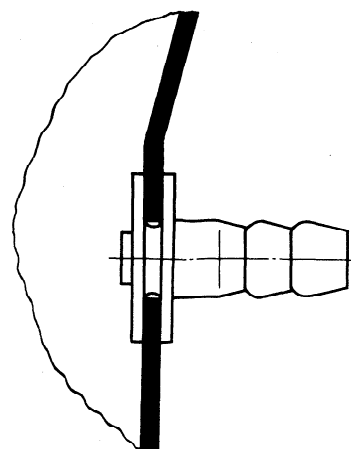


Figure 6 — Detachable side-arm

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