BS 2069:1954

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Specification for

Gas sampling tubes

Co-operating organizations

The Scientific Glassware and Related Laboratory Apparatus Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:—

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Individual manufacturers

This British Standard, having been approved by the Scientific Glassware and Related Laboratory Apparatus Industry Standards Committee and endorsed by the Chairman of the Chemical Divisional Council, was published under the authority of the General Council on
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Amendments issued since publication

Amd. No.	Date	Comments

Contents

Foreword

This standard makes reference to the following British Standard:—

BS 1751, *General purpose glass stopcocks*.

This British Standard has been prepared to cover the conventional types of gas sampling tube fitted with straight bore or double oblique bore stopcocks. The specification forms one of a series suggested by the British Laboratory Ware Association, and the working drawings first prepared by the B.L.W.A. in 1948 have been taken into consideration when preparing the standard.

The need for this standard arises principally from the fact that gas sampling tubes are commonly fitted in carrying cases, so that it is very convenient to the user to be able to obtain replacements from any source of supply to fit the original case. The dimensions affecting interchangeable fitting into a carrying case are the only mandatory ones in the specification because, so long as the stopcocks are ground to prevent leakage, the other features do not, in general, affect the performance or utility of a gas sampling tube.

The nominal capacities of 100 and 250 ml. have been selected as being the most popular in general use. The tubes are designed so that the 100 ml. tube will provide at least one 100 ml. or two 50 ml. samples and the 250 ml. tube twice as many.

The Type 1 tube is included in view of the wide demand for it for general work, but for accurate analysis the Type 2 tube is usually preferred because it enables the connecting tube to be purged before transferring the sample.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 6, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This British Standard specifies two types of gas sampling tube, each in two sizes, suitable for general laboratory use, and allowing interchangeable fitting in carrying cases (see Appendix).

2 Types and sizes

Two types of gas sampling tube are specified:

Type 1. With straight stopcocks, in nominal capacities of 100 and 250 ml.

Type 2. With double oblique bore stopcocks, in nominal capacities of 100 and 250 ml.

3 Material

The tubes shall be made of clear glass, reasonably free from visible defects, and shall be well annealed.

4 Construction

The general design of the tubes shall be as illustrated in Figure 1. The construction shall be sufficiently robust to withstand the normal hazards of transporting from the sampling point to the laboratory.

The tubes are designed to be used one way up. The connecting tube at the upper end shall be ground at right angles to the axis and lightly fire polished so as to give a butt connection to the gas analysis apparatus. The connecting tube at the lower end shall be finished with a nipple as shown in Figure 1 for convenient connection to the displacement reservoir.

5 Dimensions

The tubes shall conform to the mandatory dimensions given in Table 1, including the requirements of BS 1751[1)] appropriate to the stopcocks (and to the capillary tubes adjoining them).

Table 2 lists, for the guidance of manufacturers, additional recommended dimensions for the tubes. These dimensions are not a mandatory part of the specification, but a tube which, on visual inspection, shows any gross departure from them shall be deemed not to comply with the specification.

Table 1 — Mandatory requirements for gas sampling tubes

All linear dimensions are in millimetres

Nominal capacity	Type 1		Type 2	
	100 ml.	250 ml.	100 ml.	250 ml.
Actual capacity, minimum	105 ml.	210 ml.	105 ml.	210 ml.
Length of bulb	155 ± 5	205 ± 5	155 ± 5	205 ± 5
External diameter of bulb	36 ± 2	44 ± 2	36 ± 2	44 ± 2
Distance between centres of stopcocks	220 ± 5	270 ± 5	220 ± 5	270 ± 5
Overall length	290 ± 5	340 ± 5	290 ± 5	340 ± 5
Stopcock designation according to BS 1751[a]	GPC2	GPC2	DBC2	DBC2

[a] BS 1751, "*General purpose glass stopcocks*".

Table 2 — Recommended dimensions for gas sampling tubes

All dimensions are in millimetres

Nominal capacity	Type 1		Type 2	
	100 ml.	250 ml.	100 ml.	250 ml.
Wall thickness of bulb, minimum	1	1.5	1	1.5
Distance from centre of stopcock to end of bulb	35	35	35	35
Overall length of short arm of stopcock	—	—	30	30

[1)] BS 1751, "*General purpose glass stopcocks*".

6 Markings

Each tube shall have permanently and legibly marked on it:

a) The nominal capacity, e.g. “100 ml.”

b) The maker’s or vendor’s name or mark.

c) An area (about 15 mm. diameter) with a surface suitable for marking with pencil.

d) The number of this British Standard, i.e. “BS 2069”.[2)]

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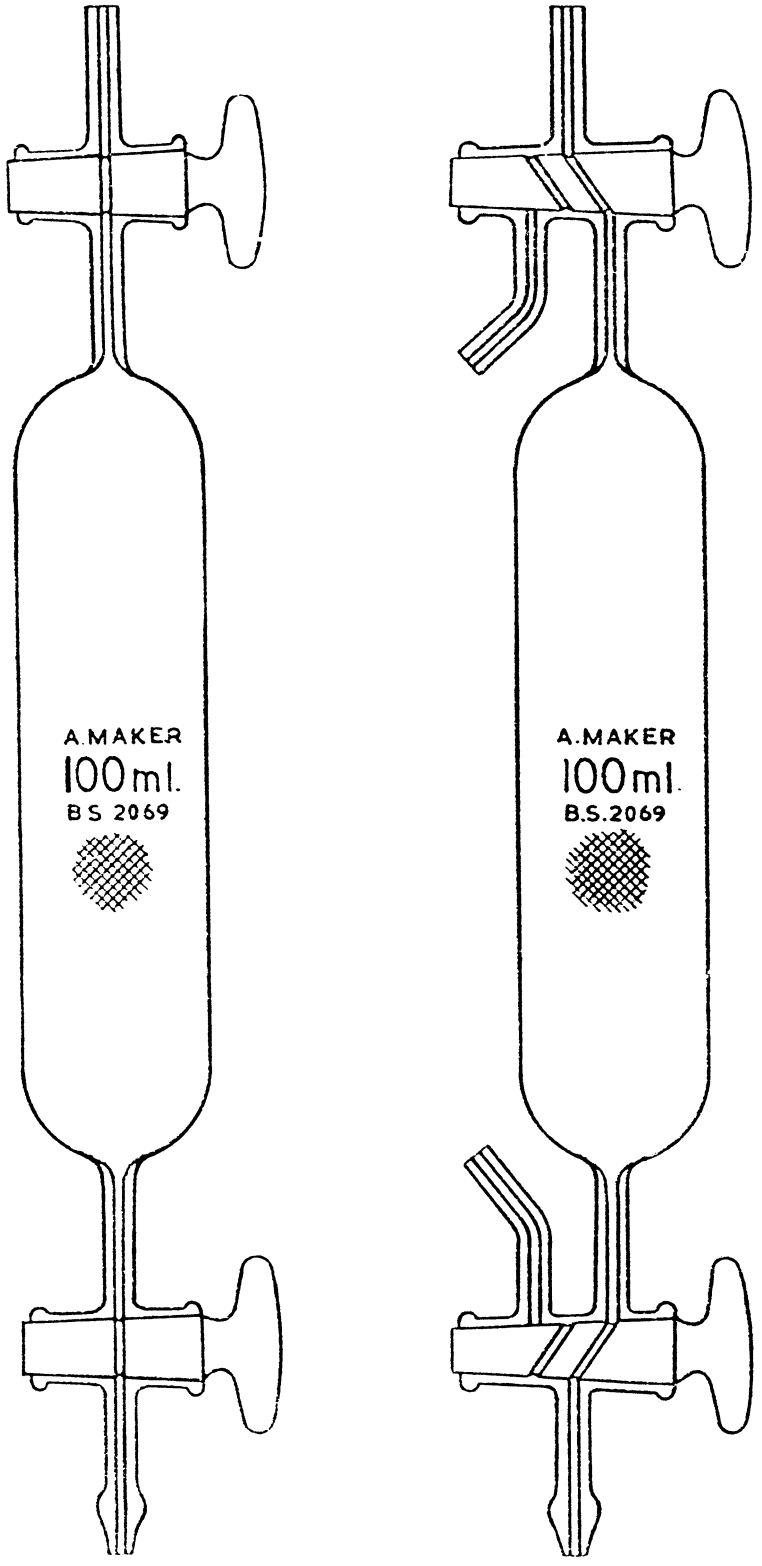
Appendix Carrying cases

Although not a part of the specification for the tubes themselves, Figure 2 and Figure 3 are included for the convenience of manufacturers and users, showing suitable principal dimensions for carrying cases to contain tubes complying with this British Standard.

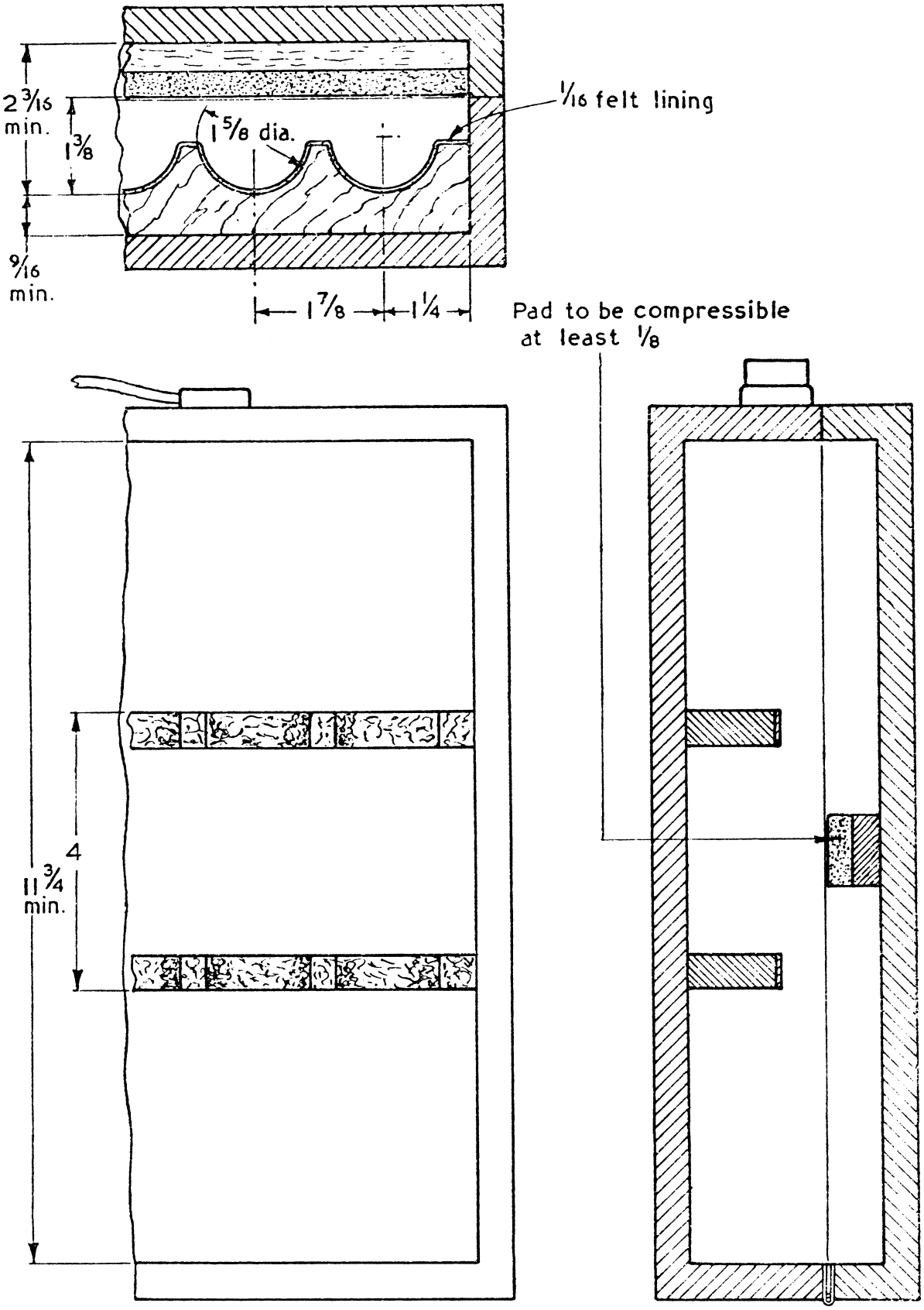


a

b

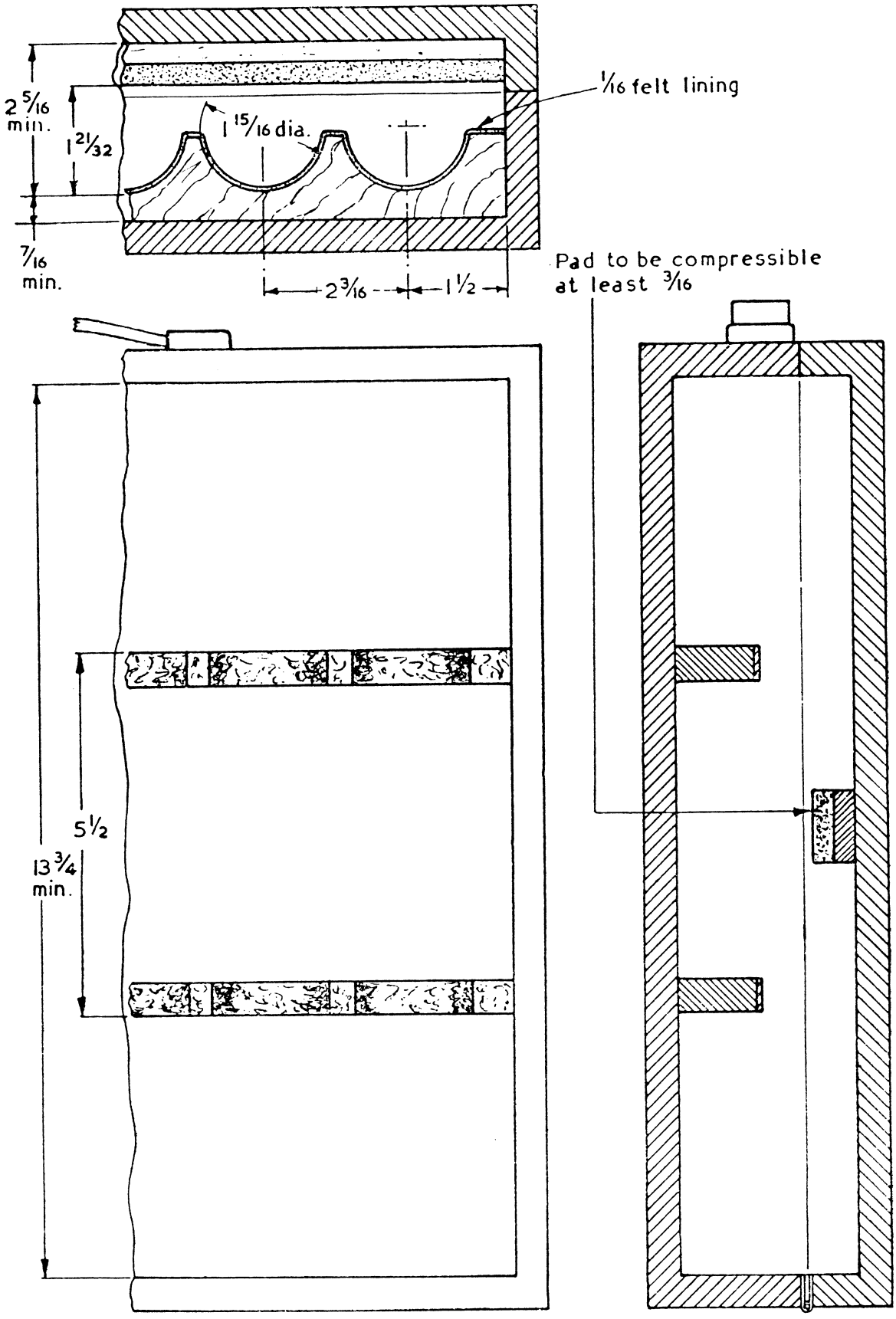
a. Type 1. With straight stopcock
b. Type 2. With double oblique bore stopcock

Figure 1 — General design of gas sampling tubes



All dimensions are in inches

Figure 2 — Diagram showing principal dimensions of case to contain tubes of nominal capacity 100 ml.



All dimensions are in inches

Figure 3 — Diagram showing principal dimensions of case to contain tubes of nominal capacity 250 ml.

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