

Laboratory fume cupboards —

Part 3: Recommendations for selection, use and maintenance

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Laboratory Apparatus Standards Policy Committee (LBC/-) to Technical Committee LBC/18, upon which the following bodies were represented:

- Association for Science Education
- Association of the British Pharmaceutical Industry
- British Furniture Manufacturers' Federation
- British Occupational Hygiene Society
- Chartered Institution of Building Services Engineers
- Chartered Society of Designers
- Chemical Industries' Association
- CLEAPSS School Science Service
- Department for Education
- Department of Health
- Department of the Environment (The Buying Agency)
- Furniture Industry Research Association
- GAMBICA (BEAMA Ltd.)
- Health and Safety Executive
- Manufacturing Science Finance
- Medical Research Council
- National Association of Teachers in Further and Higher Education
- Royal Institute of British Architects
- Royal Society of Chemistry
- Universities Safety Association
- Coopted members

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Foreword

This Part of BS 7258 has been prepared under the direction of the Laboratory Apparatus Standards Policy Committee and supersedes BS 7258-3:1990, which is withdrawn.

This edition introduces technical changes but it does not reflect a full review or revision of the standard, which will be undertaken in due course.

BS 7258 is published in four Parts as follows.

- *Part 1: Specification for safety and performance;*
- *Part 2: Recommendations for the exchange of information and recommendations for installation;*
- *Part 3: Recommendations for selection, use and maintenance;*
- *Part 4: Method for determination of the containment value of a laboratory fume cupboard.*

IMPORTANT NOTE It is essential that this Part be read in conjunction with BS 7258-1.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, 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 Part of BS 7258 gives recommendations for the selection, use and maintenance of laboratory fume cupboards.

This Part of BS 7258 is not intended to cover fume cupboards for such special applications as carrying out work on radioactive materials, perchloric acid, etc.

This Part does not cover microbiological safety cabinets (see BS 5726) and the fume cupboards described should not be used for categorized microbiological work.

NOTE A bibliography on laboratory health and safety in respect of fume cupboards is given in annex A.

2 References

2.1 Normative references

This Part of BS 7258 incorporates, by dated or undated reference, provisions from other publications. These normative references are made at the appropriate places in the text and the cited publications are listed on the inside back cover. For dated references, only the edition cited applies; any subsequent amendments to or revisions of the cited publication apply to this Part of BS 7258 only when incorporated in the reference by amendment or revision. For undated references, the latest edition of the cited publication applies, together with any amendments.

2.2 Informative references

This Part of BS 7258 refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on the inside back cover, but reference should be made to the latest editions.

3 Definitions

For the purposes of this Part of BS 7258, the definitions given in BS 7258-1:1994 apply.

4 Selection

4.1 General

The efficiency of any fume cupboard depends on a number of factors (principally design, siting and use).

The selection of a fume cupboard should be based primarily on the philosophy that the performance should be higher than that demanded by the processes likely to be performed in it. Other considerations that affect the selection, such as economic consequences, the materials of construction, etc. should be secondary.

Before selecting a particular type of fume cupboard, the purchaser should establish that it complies with the performance type test specified in BS 7258-1:1994.

Alternatively, the purchaser may be in a position to make a judgement about a particular model of fume cupboard suiting his needs on the basis of previous test experience. Even so, the purchaser should still verify, by making appropriate tests, that the new or upgraded fume cupboard operates at the correct face velocity and that it does indeed achieve the desired results when installed and in use.

4.2 Health and safety

4.2.1 General

Purchasers should give careful consideration to the following health and safety issues when selecting a fume cupboard for a particular application (or when planning to extend or change the application of an existing fume cupboard):

- a) whether the design, siting and use of the fume cupboard will be such that it will achieve adequate control of exposures of persons to the airborne toxic substances involved in that application;
- b) whether the fume cupboard and the extract system will be otherwise safe and suitable for the application in question, e.g. with respect to the following:
 - 1) materials of construction;
 - 2) provisions for electrical and other services;
 - 3) cleaning and maintenance provisions;
 - 4) location and design of arrangements for the discharge of air from the fume cupboard system.

Since a fume cupboard can be expected to last many years, it can confidently be assumed that a wide variety of processes are likely to be carried out within it. The selection, therefore, should have regard to the most hazardous of these likely processes.

4.2.2 Regulations

Under section 2 of the Health and Safety at Work etc. Act 1974 [1] it is the employers' duty to take all reasonably practicable measures to ensure the health and safety of their employees, and under sections 3 and 4 it is their duty to take the same measures for others. Section 6 puts a duty on manufacturers, designers and suppliers of fume cupboards, being articles supplied for use at work, to ensure that they are constructed and designed to be as safe as reasonably practicable. Thus a fume cupboard should be suitable both for the process to be undertaken and for the hazards to the users.