

**SS 658 : 2020**  
(ICS 91.140.30)

**SINGAPORE STANDARD**

**Code of practice for design, operation, testing  
and maintenance of local exhaust ventilation  
systems**



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*Association of Consulting Engineers Singapore*  
*Association of Property and Facility Managers*  
*Esco Micro Pte Ltd*  
*Ministry of Manpower*  
*Occupational and Environment Health Society*  
*Singapore Institution of Safety Officers*  
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## Foreword

This Singapore Standard was prepared by the Working Group on Local Exhaust Ventilation set up by the Technical Committee on Safety and Health Involving Equipment under the purview of QSSC.

Local exhaust ventilation (LEV) systems are widely used to control toxic gases, vapours, dusts, fumes and aerosols. A proper design, operation, testing and maintenance of LEV systems is essential in the effective removal of airborne contaminants that would otherwise result in safety and health hazards, public nuisance or air pollution.

This standard will be useful to occupiers, employers, facility managers, workplace safety and health practitioners, industrial hygiene practitioners, and persons designing, installing, testing, operating and maintaining or servicing LEV systems. Stakeholders such as occupiers are encouraged to use this standard to help fulfil their duties in respect of providing LEV where appropriate to remove any toxic, dust, fumes or other contaminants produced or given off from any process or work carried on in their workplace.

In preparing this standard, reference was made to the following publications:

1. American Conference of Governmental Industrial Hygienists (ACGIH) Industrial Ventilation – A Manual of Recommended Practice for Design
2. American Conference of Governmental Industrial Hygienists (ACGIH) Industrial Ventilation – A Manual of Recommended Practice for Operation and Maintenance.
3. Guidelines on Design, Operation and Maintenance of Local Exhaust Ventilation Systems, Ministry Of Manpower, Singapore

It is presupposed that in the course of their work, users will comply with all relevant regulatory and statutory requirements. Some examples of relevant regulations and acts are listed in the Bibliography. The Singapore Standards Council and Enterprise Singapore will not be responsible for identifying all of such legal obligations.

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

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1. *Singapore Standards (SSs) and Technical References (TRs) are reviewed periodically to keep abreast of technical changes, technological developments and industry practices. The changes are documented through the issue of either amendments or revisions. Where SSs are deemed to be stable, i.e. no foreseeable changes in them, they will be classified as "Mature Standards". Mature Standards will not be subject to further review, unless there are requests to review such standards.*
2. *An SS or TR is voluntary in nature except when it is made mandatory by a regulatory authority. It can also be cited in contracts making its application a business necessity. Users are advised to assess and determine whether the SS or TR is suitable for their intended use or purpose. If required, they should refer to the relevant professionals or experts for advice on the use of the document. Enterprise Singapore and the Singapore Standards Council shall not be liable for any damages whether directly or indirectly suffered by anyone or any organisation as a result of the use of any SS or TR. Although care has been taken to draft this standard, users are also advised to ensure that they apply the information after due diligence.*
3. *Compliance with a SS or TR does not exempt users from any legal obligations.*



# Code of practice for design, operation, testing and maintenance of local exhaust ventilation systems

## 1 Scope

**1.1** This standard specifies the requirements for the design and construction of local exhaust ventilation (LEV) systems for the removal of air borne contaminants generated or released from any process, operation or work carried on in the workplace. It establishes provisions for operation, testing and maintenance of LEV systems to assure continuous and satisfactory performance of the systems. It also covers competency requirements for designing, testing and maintaining the systems.

**1.2** This standard does not cover applications of LEV for removal of bio-aerosols and radioactive materials. It is also not applicable to mechanical ventilation for pharmaceutical containment, confined spaces, clean rooms and air-conditioning in buildings. However, the principles of LEV often apply in such areas. For kitchen LEV refer to SS 553: 2016 Code of practice for air-conditioning and mechanical ventilation in buildings.

## 2 Normative references

The following referenced documents are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

SS 571 Code of practice for energy lockout and tagout