

**TECHNICAL REFERENCE**

**Fabric ducting air distribution system –  
Textile based ventilation**



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## **Foreword**

This Technical Reference was prepared by the Working Group appointed by the Technical Committee on Building Maintenance and Management under the direction of the Building and Construction Standards Committee (BCSC). The BCSC endorsed the Technical Reference on 25 October 2016.

The Technical Reference is intended to provide recommendations and guidelines of fabric ducting to engineers, project managers, energy managers and facility managers working for developers, building owners, M&E consultancy firms, ACMV contractor firms, ESCOs and other stakeholders involved in the design, construction and/or management of air-conditioning and mechanical system in the building industry.

This Technical Reference is a provisional standard made available for application over a period of three years. The aim is to use the experience gained to update the Technical Reference so that it can be adopted as a Singapore Standard. Users of the Technical Reference are invited to provide feedback on its technical content, clarity and ease of use. Feedback can be submitted using the form provided in the Technical Reference. At the end of the three years, the Technical Reference will be reviewed, taking into account any feedback or other considerations, to further its development into a Singapore Standard if found suitable.

In preparing this Technical Reference, reference was made to FSR 10:2014, "Fire safety requirements for the use of plastics in building construction".

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

## Technical Reference for fabric ducting air distribution system – Textile based ventilation

### 1 Scope

The Technical Reference is intended to provide recommendations to developers, consultants and contractors with a set of guidelines for the design and maintenance of fabric ducting for air distribution systems. The guidelines recommend materials and address the issues of flammability, quality management, design and maintenance of fabric ducting.

The Technical Reference covers:

- a) Characteristics of materials;
- b) Fire safety requirements;
- c) Quality management;
- d) Design considerations and typical design;
- e) Installation, maintenance and warranty.

### 2 Normative references

The following referenced documents are indispensable for the application of this Technical Reference. For references, the latest edition of the referenced document, including any amendments, applies.

ASTM E648	Standard test method for critical radiant flux of floor-covering systems using a radiant heat energy source
ASTM E662	Standard test method for specific optical density of smoke generated by solid materials
EN 13501 -1	Fire classification of construction products and building elements. Classification using test data from reaction to fire tests
EN 14041	Resilient, textile and laminate floor coverings – Essential characteristics
EN 45545-2	Railway applications. Fire protection on railway vehicles. Requirements for fire behaviour of materials and components
ISO 5659-2	Plastics – Smoke generation – Part 2: Determination of optical density by a single-chamber test
ISO 9001	Quality management systems – Requirements
ISO 9239-1	Reaction to fire tests for floorings – Part 1: Determination of the burning behaviour using a radiant heat source
NFPA 253	Standard method of test for critical radiant flux of floor covering systems using a radiant heat energy source
NFPA 258	Recommended practice for determining smoke generation of solid materials

- SS 553 Code of practice for air-conditioning and mechanical ventilation in buildings
- SS 554 Code of practice for indoor air quality for air-conditioned buildings