

Application of fire safety engineering principles to the design of buildings —

Part 5: Fire service intervention (Sub-system 5)

ICS 13.220.10

Committees responsible for this Published Document

The preparation of this British Standard was entrusted by FSH/24, Fire safety engineering, to Subcommittee FSH/24/6, upon which the following bodies were represented:

- Association of Building Engineering
- BRE/LPC Laboratories
- Chief and Assistant Chief Fire Officer's Association
- DETR
- DoH — NHS Estates
- District Surveyors Association
- Fire Safety Development Group
- Home Office
- Fire Brigades Union
- Fire Service
- London Fire and Emergency Planning Authority

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Foreword

This Published Document (PD) was published under the Fire Standards Policy Committee. Other parts published or about to be published are as follows:

- *Part 0: Guide to design framework and fire safety engineering procedures;*
- *Part 1: Initiation and development of fire within the enclosure of origin;*
- *Part 2: Spread of smoke and toxic gases within and beyond the enclosure of origin;*
- *Part 3: Structural response and fire spread beyond the enclosure of origin;*
- *Part 4: Detection of fire and activation of fire protection systems;*
- *Part 6: Evacuation;*
- *Part 7: Probabilistic risk assessment.*

These Published Documents are intended to be used in support of BS 7974:2001, *Application of fire safety engineering principles to the design of buildings — Code of practice.*

It has been assumed in the drafting of this PD that the execution of its provisions is entrusted to appropriately qualified and competent people.

Drafting of this publication was completed in July 2001.

Acknowledgement is made to the contribution of Mr G. Harris of Smoke and Fire Technology Ltd and Mr G. E. Evans of the Fire Brigades Union in the preparation of this publication.

Summary of pages

This document comprises a front cover, an inside front cover, pages i to ii, pages 1 to 15 and a back cover.

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Introduction

This Published Document is one of a series of documents intended to support BS 7974. The Code of Practice provides a framework for developing a rational methodology for design using a fire safety engineering approach through the application of scientific and engineering principles to the protection of people, property and the environment from fire.

The Published Documents (PDs) contain guidance and information on how to undertake quantitative and detailed analysis of specific aspects of the design. They are a summary of the state of the art and it is intended that they be updated as new theories, calculation methods and/or data become available. They do not preclude the use of appropriate methods and data from other sources. Figure 1 shows the structure of the Code of Practice and the Published Documents.

BS 7974 can be used to define one or more fire safety design issues to be addressed using fire safety engineering. The appropriate PDs can then be used to set specific acceptance criteria and/or undertake detailed analysis.

Figure 1 shows the Published Documents. Figure 2 shows how the Sub-systems interact.

A fire safety engineering (FSE) approach that takes into account the total fire safety package can often provide a more fundamental and economical solution than more prescriptive approaches to fire safety. It may in some cases be the only viable means of achieving a satisfactory standard of fire safety in some large and complex buildings.

Fire safety engineering can have many benefits. The use of BS 7974 will facilitate the practice of fire safety engineering and in particular it will:

- a) provide the designer with a disciplined approach to fire safety design;
- b) allow the safety levels for alternative designs to be compared;
- c) provide a basis for selection of appropriate fire protection systems;
- d) provide opportunities for innovative design;
- e) provide information on the management of fire safety for a building.

Fire is an extremely complex phenomenon and there are still gaps in the available knowledge. When used by suitably qualified persons, experienced in fire safety engineering, the series of documents will provide a means of establishing acceptable levels of fire safety economically and without imposing unnecessary constraints on aspects of building design.

Application of fire safety engineering principles to the design of buildings – Code of Practice
BS 7974
(Framework Document Philosophy)

Published Documents
(Handbooks providing supporting information and guidance)

PD 7974-0	PD 7974-1 (Sub-system 1)	PD 7974-2 (Sub-system 2)	PD 7974-3 (Sub-system 3)	PD 7974-4 (Sub-system 4)	PD 7974-5 (Sub-system 5)	PD 7974-6 (Sub-system 6)	PD 7974-7
Guide to design framework and fire safety engineering procedures	Initiation and development of fire within the enclosure of origin	Spread of smoke and toxic gases within and beyond the enclosure of origin	Structural response and fire spread beyond the enclosure of origin	Detection of fire and activation of fire protection systems	Fire service intervention	Evacuation	Probabilistic risk assessment
Design approach QDR Comparison with criteria Reporting and presentation	Design approach Acceptance criteria Analysis Data References	Design approach Acceptance criteria Analysis Data References	Design approach Acceptance criteria Analysis Data References	Design approach Acceptance criteria Analysis Data References	Design approach Acceptance criteria Analysis Data References	Design approach Acceptance criteria Analysis Data References	Design approach Acceptance criteria Analysis Data References

Figure 1 — BS 7974 and the Published documents