

RESIDENTIAL SPRINKLERS FOR FIRE PROTECTION

Part 1: Introduction

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Automatic fire sprinkler systems are increasingly being installed to complement other fire protection measures in domestic and residential buildings in the UK. This two-part Digest introduces the subject and gives guidance on installing sprinklers in accordance with BS 9251 (*Sprinkler systems for residential and domestic occupancies – Code of practice*).

This first part of the Digest provides information on residential sprinklers for non-specialists. It covers a wide range of issues: background; research and development studies; description and how the sprinkler systems work; current UK standards; planning, specification, design, installation, commissioning, maintenance and system continuity issues; and use of certified contractors and approved products. It also gives references, further reading and where to obtain further information.

Part 2 provides a detailed commentary on BS 9251. Part 2 is aimed primarily at sprinkler contractors in the LPCB LPS 1301 scheme and other interested parties.



Glossary of terms

Dwellings

Buildings occupied by households, excluding hotels, hostels and residential institutions and including mobile homes

Domestic buildings

Individual dwellings for occupation as single family units used, constructed or adapted to be used wholly or principally for human habitation. This includes dwelling houses, individual flats, maisonettes and transportable homes

Residential buildings

Buildings for multiple occupation. This includes apartments, residential care homes, houses in multiple occupation (HMOs), blocks of flats, boarding houses, nursing homes, residential rehabilitation accommodation and dormitories. This does not include secure accommodation or asylum centres

Residential sprinkler systems

Fixed, automatic fire sprinkler systems suitable for use in domestic and residential buildings

1 INTRODUCTION AND BACKGROUND

Consequences of fires in dwellings

According to UK fire statistics^[1], each year most fires in buildings attended by local authority fire and rescue services are fires in dwellings, and most fire deaths and injuries occur as a result of people being overcome by smoke or toxic gases. Accidental fires which result in deaths in dwellings most frequently start in rooms defined as 'the lounge, living or dining room' followed by rooms defined as 'the bedroom or bed sitting room'.



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Part 2: Installation

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This is the second part of a two-part Digest. Part 2 is a guide to BS 9251 (*Sprinkler systems for residential and domestic occupancies – Code of practice*). The guide clarifies, amplifies and provides additional requirements to BS 9251. It also includes the need for full hydraulic calculations in preparing the design, and the water supply requirements, and clarifies when BS EN 12845 should be used in preference to BS 9251 because of the building occupancy and hazards to be protected.

Part 2 is aimed primarily at sprinkler contractors approved in the LPCB LPS 1301 certification scheme but will also be of relevance to other interested parties.

Part 1 provides an introduction to residential sprinklers for non-specialists including the reasons for, and the benefits of, installing a domestic or residential sprinkler system.

1 INTRODUCTION

BS 9251 (*Sprinkler systems for residential and domestic occupancies – Code of practice*)^[1] provides recommendations for the design, installation and maintenance of domestic and residential sprinkler systems but this standard is not comprehensive. An accompanying guide is needed to interpret BS 9251 and make it more useable.

The commercial and industrial sprinkler standard BS EN 12845 (*Fixed firefighting systems – Automatic sprinkler systems – Design, installation and maintenance*)^[2] and the accompanying *LPC rules for automatic sprinkler installations*^[3] can also be used for residential buildings depending on the circumstances.



The LPS 1301 certification scheme^[4] is a third-party certification scheme for residential sprinkler installers in the UK and Ireland, operated by the Loss Prevention Certification Board (LPCB) and applicable to domestic and residential buildings. This scheme is aimed at helping clients select companies to design, install and service domestic and residential sprinkler systems to BS 9251 to ensure that the sprinkler systems are appropriate for occupancy and/or hazard class of the premises in which they are installed and will operate reliably in the event of a fire.

This Digest is primarily for sprinkler contractors approved in the LPCB LPS 1301 certification scheme. It will also be of relevance to other interested parties.

This Digest provides guidance on how to design, install and maintain automatic domestic and residential sprinkler systems in relation to BS 9251. It does not cover sprinkler systems designed to other sprinkler standards, eg BS EN 12845. It is not relevant to other sprinkler contractor certification schemes, eg LPCB LPS 1048-1^[5].

It is intended that this Digest will be updated periodically, and particularly when BS 9251 is revised.