

Advice Leaflet 34 Floors – Upgrading the Fire Resistance of Existing Floors

Public Advice Leaflet No 34

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Introduction

The purpose of upgrading the fire resistance of existing floors is to prevent the spread of fire or smoke vertically from one part of a building to another. Depending on the particular circumstances the Fire Authority will specify a fire resistance of thirty minutes or one hour.

Other Authorities You May Need To Consult

It is likely that the upgrading will require approval by the local authority building control department or by an approved inspector.

Other bodies may also need to be consulted such as:

- a) Health and Safety Executive
- b) Environmental Health Department (local authority)
- c) Licensing Justices
- d) Entertainments Licensing Authority (local authority)
- e) Insurers of property

What Is Fire Resisting

Fire resisting can be defined as:

A structure or door which is able to resist the passage of fire, heat and smoke for a minimum period of 30 minutes and meets with the relevant parts of British Standard 476.

Applying Fire Resistance

There are various ways of achieving fire resistance in existing floors, some of which are mentioned below. It is essential to use a method or system that has been subjected to testing according to the relevant part of BS476.

Where a floor is of traditional wooden construction, the following methods may be adopted:

- a. Applying a layer or layers of plasterboard to the underside of an existing floor.
- b. Applying a layer or layers of a lightweight fire resisting board to the underside of an existing floor.
- c. Installing a fire resisting suspended ceiling system beneath an existing floor.

Advice Leaflet 34
Floors – Upgrading the Fire Resistance of Existing Floors

Notes

Before these methods are adopted, it may be necessary to apply extra fire resistance to the floor above and to adapt or remove an existing ceiling.

BS 476 provides exacting tests for fire resisting floors. In order to ensure that an upgraded floor will meet the minimum standards, it is essential that the manufacturer's instructions are followed carefully.

Detailed guidance on upgrading the fire resistance of existing timber floors is available in the Building Research Establishment Digest 208 (see the BIBLIOGRAPHY).

If it is considered essential to preserve an ornate ceiling it is possible to upgrade the fire resistance of an existing floor by applying fire resistance to the floor above and/or the space between the floor and the ceiling below.

Where pipe work or other services pass through a fire-resisting floor, it is essential to ensure that all gaps are sealed with fire-resisting material such as plaster or an intumescent material, to prevent the passage of fire, smoke and other products of combustion.

The joint between the ceiling and any walls must be close fitting to prevent the spread of smoke and fire.

Light fittings

Where light fittings form part of a fire-resisting ceiling, a system should be used which gives the necessary standard of fire resistance.

Where a light diffuser forms part of a fire-resisting ceiling, thermoplastic lighting diffusers should not be used, unless they have been tested as part of the ceiling system.

Further advice regarding the general use of lighting diffusers is contained in Part B2 of the Building Regulations.

Advice Leaflet 34
Floors – Upgrading the Fire Resistance of Existing Floors

Bibliography

Detailed guidance on how to achieve adequate standards of fire resistance may be obtained from the following bibliography.

Listed alongside each document is the organisation from which it may be obtained.

TITLE	AVAILABLE FROM
Building Regulations 1991 Approved Document B	SO
BS 5588: Part 1: Code of Practice for Residential Buildings	BSI
BS 5588-11: 1997 Fire precautions in the design, construction and use of buildings. Part 11: Code of practice for shops, offices, industrial storage and other similar buildings.	BSI
BS 476: Part 20 1987 AMD 1 Fire tests on building materials and structures. Part 20: Method for determination of the fire resistance of elements of construction (general principles) (AMD 6487) dated 30 April 1990	BSI
BS 476: Part 21: Methods for Determination of the Fire Resistance of Load Bearing Elements of Construction	BSI
BS 476: Part 22: Methods for Determination of the Fire Resistance of Non-Load Bearing Elements of Construction	BSI

The above publications are current at the time of preparation of this Public Advice Note.

Publications can be obtained from the following addresses:

SO	The Stationery Office Ltd PO BOX 29 Norwich, NR3 1GN Or Blackwells 21 Blenheim Terrace Leeds, LS2 9HJ	Tel: 0870 600 5522 Fax: 0870 600 5533 e-mail: customer.services@tso.co.uk web: www.tso.co.uk/bookshop/bookstore.asp Tel: 0113 245 2623 Fax: 0113 242 5641 e-mail: osleeds@blackwellsbookshops.co.uk
BSI	British Standards Institution (Sales) 389 Chiswick High Road LONDON, W44 AR	Tel: 0208 996 7003 e-mail: cservices@bsi-global.com web: bsonline.techindex.co.uk
BRE	Building Research Establishment Garston Watford, WD25 9XX	Tel: 01923 894040 e-mail: enquiries@bre.co.uk web: www.bre.co.uk

Advice Leaflet 34
Floors – Upgrading the Fire Resistance of Existing Floors

Further Advice

Further advice on achieving fire-resisting standards may be obtained from:

Your local fire station

The local authority building control office at the address given below:

BRADFORD	Building Control Services 3rd Floor Jacob's Well Nelson Street Bradford, BD1 5RW	Tel: 01274 433807 Fax: 01274 435801 Web: http://www.bradford.gov.uk
CALDERDALE	Calderdale Building Control Services Westgate House Westgate Halifax, HX1 1PS	Tel: 01422 392223 (Answerphone service when closed). Fax: 01422 392203 Email: building.control@calderdale.gov.uk
KIRKLEES	Building Control Department Kirklees Metropolitan Council Property Services PO Box B95 Civic Centre HUDDERSFIELD, HD1 2NA	Tel: 01484 422133 Email: building.control@kirklees.gov.uk Web: http://www.kirklees.gov.uk/
LEEDS	Development Enquiry Centre Leonardo Building, 2 Rossington Street Leeds, LS2 8HD	Tel: 0113 247 8000 Email: PLAN.Building.Control@leeds.gov.uk Web: http://www.leeds.gov.uk
WAKEFIELD	Building Control Services Newton Bar, Leeds Road, Wakefield WF1 2TX	Tel: 01924 306580 e-mail: buildingcontrol@wakefield.gov.uk Web: http://www.wakefield.gov.uk

Other related Public Advice Notes

FS-PAN023 - Doors - general

FS-PAN025 - Doors - upgrading the fire resistance of existing doors

FS-PAN032 - Fire resistance - general standards

FS-PAN046 - Walls - upgrading the fire resistance of existing walls