

Fire safety research commissioned by the Department – 1988 – 2016

Date of paper	Research organisation	Area of research	Departmental response	References	Publicly available (Y/N)
1988 – Present (Reports annually)	BRE	Investigation of real fires project	This research has primarily been used to inform development of ADB, and has itself led to other research projects. ¹	<p>Reports from 2007 to present day:</p> <p>2007-2009: gren001:01336699</p> <p>2009-2011: The Department's Records Team was unable to locate this document.</p> <p>2011- 2012 gren001:00011539 (<i>progress report</i>) gren001:00000878 (<i>end of year report</i>)</p> <p>2012-2013: gren001:02039316</p> <p>2012-2015: gren001:02039314</p> <p>2015-2018: gren001:00477534</p> <p>2018-2019: gren001:02039320</p>	No

¹ gren001:00239378

				2019-2020: gren001:02039318 (vol 1) gren001:02039321 (vol 2) 2020-2021: gren001:02039317 gren001:02039319	
26 May 2000	Warrington Fire Research	Transposition of Euroclasses	ADB was amended in 2002 with the European supplement and the changes were incorporated at the next full revision (2006).	gren001:00062290	No
June 2002	BRE	Tests were carried out as part of a study which involves the review of BR135 “Fire performance of external thermal insulation for walls of multistorey buildings”.	These experiments were conducted to inform the revision of BR 135 into its second edition, to assess the fire performance of existing and new cladding systems and to develop the performance criteria used to assess the suitability of cladding systems.	https://assets.grenfelltoweringuiiry.org.uk/BRE00042045_2002%20Consultation%20-%20Generic%20data%20supporting%20the%20revision%20of%20BR%20135%20prepared%20by%20BRE%20for%20the%20Industry%20Advisory%20Group%20%28IAG%29%20for%20the%20revision%20of%20BR%20135%20and%20the%20joint%20working%20group%20of%20B.pdf	Yes

February 2004 (commissioned 2001)	BRE	The effectiveness of sprinklers in residential premises	Used to inform the consultation published by the Department in July 2005 on the review of Part B of the Building Regulations. ²	https://www.bre.co.uk/page.jsp?id=422	Yes
November 2003 (commissioned)-October 2004 (reported)	BRE	Interaction between risers and their influence on the safety of stairs	The research was used to influence the revision of BS5395- 1:2010. ³ As of 2010, Departmental officials noted that the research may have implications for revisions of Approved Document K. However, we have not been able to find any further documentation. ⁴	gren001:02039307	No
2005	BRE	Production of smoke and burning droplets The objectives of this project were: <ol style="list-style-type: none"> 1. To undertake a review of what other EU Member States do in dealing with smoke and burning droplets. 2. To determine if there is any evidence to 	Departmental documentation from March 2005 notes: “At the time of updating ADB to incorporate the new European fire test methods and classifications it was suggested that the production of smoke and burning droplets from construction products used to form walls and ceilings be controlled within the AD. Provisions in ADB for greater control of smoke production and burning droplets from these	Interim report: gren001:02039308 Full report: https://www.bre.co.uk/filelibrary/pdf/rpts/partb/ODPM_Smoke_Droplets_Report.pdf gren001:00428239	Yes

² gren001:00391759

³ gren001:00085514

⁴ gren001:00085514

		<p>suggest whether it should be controlled.</p> <p>3. To determine what materials are currently in use in UK buildings to form walls and ceilings that produce large amounts of smoke and burning droplets.</p> <p>4. To look at the impact on Industry if the Building Regulations were to demand the control of smoke and burning droplets.</p>	<p>construction products were assessed using a cost-benefit analysis, but the results showed that they could not be justified. The costs to industry in terms of moving to alternative products and re-engineering existing products, as well as the burden of additional testing and certification, amounted to many millions of pounds, whereas the benefits in terms of reduction in risk of death and injury were minimal. As a result, the amendment is not pursued further in ADB or this RIA.”⁵</p>		
22 July 2004	BRE	<p>To consider and compare fire losses experienced in those areas that have Local Act fire safety provisions in place and those that do not</p>	<p>The relevant sections of the Local Acts were repealed, and the new standard set out in the edition of ADB published in 2006.</p> <p>In January 2012 the Department published the impact assessment ‘Removing inconsistency in local fire protection standards’, for which the research formed a basis. The Local Acts were repealed later in 2012.</p>	<p>Impact assessment: gren001:00101803</p> <p>Other supporting references: gren001:00062907 gren001:00392858</p>	No

⁵ gren001:00073650

17 November 2005	FPA	Project report “Sprinkler systems for low-cost domestic premises”	This research led to the ‘Low-Cost Sprinkler System Design Guide’ (also by the FPA) in 2008. ⁶ It also led to a pilot of Lower-Cost Domestic Sprinkler systems commissioned by the Department which is discussed below.	gren001:02039312	No
2005 (guide published in 2006)	BRE	Fire suppression in buildings using water mist, fog or similar systems	The Department commissioned BRE to prepare and publish “An independent guide on water mist systems for residential buildings”.	https://www.bre.co.uk/filelibrary/pdf/rpts/partb/water_mist.pdf https://www.bre.co.uk/filelibrary/pdf/rpts/partb/Water_Mist_Guide_v2.pdf	Yes
2005	BRE	The integrity of compartmentation in buildings during a fire	This research informed the 2006 revision of ADB – volume 2 at paragraph 8.27.	https://www.bre.co.uk/filelibrary/pdf/rpts/partb/compartmentation.pdf	Yes
2005	BRE	The fire resistance of ducts and the effectiveness of dampers	The guidance on dampers was completely rewritten in the 2006 version of ADB.	https://www.bre.co.uk/filelibrary/pdf/rpts/partb/ducts_and_dampers.pdf	Yes
2005	BRE	The performance of smoke ventilation/control measures for common access corridors and stairs in flats and maisonettes	The guidance on ventilation/smoke control was substantially revised in the 2006 version of ADB – volume 2 from para 2.25.	https://www.bre.co.uk/filelibrary/pdf/rpts/partb/Smoke_Ventilation.pdf	Yes
2005	BRE	Cavity barriers	The guidance on cavity barriers was substantially revised in the 2006 version of ADB.	https://www.bre.co.uk/filelibrary/pdf/rpts/partb/CAVITY_BARRIERS_REPORT.pdf	Yes
21 March 2006	BRE	Economic impact of the inclusion of BDAG (Building Disaster Assessment Group)	This research informed 2006 changes to Part B and ADB.	https://www.bre.co.uk/filelibrary/pdf/rpts/partb/Economic	Yes

⁶ gren001:00063609

		proposals for the provision of firefighting equipment and facilities in the revised Part B of the Building Regulations		impact of BDAG proposals.pdf gren001:00392881	
13 July 2006	BRE	Residential sprinkler installation practice to maximise functionality and to prevent possible fire penetration	The findings were used to inform a separate guidance document BRE report number 231137. The guidance document ⁷ is intended to clarify safe installation practices of residential sprinkler systems and for other ceiling penetrations, intended for installers, building control bodies, fire and rescue services and those charged with making judgements on the acceptability of the fire resistance of separating timber floor constructions.	gren001:00428255 https://webarchive.nationalarchives.gov.uk/ukgwa/20100519204706/http://www.communities.gov.uk/publications/planningandbuilding/residentialsprinklerinstallation	Yes
March 2006	BRE	The effectiveness of concealed and recessed pattern sprinklers in residential premises	The results of this study were provided to the relevant British Standards committee for consideration in the development of residential sprinkler standards (BS9251).	https://www.bre.co.uk/page.jsp?id=723	Yes
9 March 2006	BRE	Householder interaction with door closure devices	The requirement for door closure devices for internal fire doors in dwellings was removed in the 2006 version of ADB - volume 1.	https://www.bre.co.uk/filelibrary/pdf/rpts/partb/Collecting_information_on_housholder_interaction.pdf	Yes
24 March 2006	BRE	Sprinklers in warehouses buildings ⁸	The Department gave guidance concerning the maximum size of	https://www.bre.co.uk/filelibrary/pdf/rpts/partb/Sprinkler	Yes

⁷ gren001:02039310

⁸ https://www.bre.co.uk/filelibrary/pdf/rpts/partb/Sprinkler_installation_trends_and_fire_statistics.pdf

			unsprinklered warehouses, in Table 12 of the 2006 version of ADB – volume 2.	installation trends and fire statistics.pdf	
24 March 2006	BRE	Smoke alarms in residential premises	The Department provided revised guidance on the location of smoke detectors in 1.10-1.18 of ADB – volume 1 (2006).	https://www.bre.co.uk/filelibrary/pdf/rpts/partb/BD2538_D2_V2_Final_Report_226779_for_publication.pdf https://webarchive.nationalarchives.gov.uk/ukgwa/20141202130449/http://www.planningportal.gov.uk/uploads/br/BR_PDF_ADB1_2006.pdf	Yes
August 2006 (commissioned *)-March 2008 (reported) *previously commissioned in 2005, but was delayed	BRE	The fire performance of escape stairs	The Department published this report in 2009 alongside a guidance document based on the research.	Report: gren001:00055224 Guidance document: gren001:00055171 https://webarchive.nationalarchives.gov.uk/ukgwa/20121103005554/http://www.communities.gov.uk/publications/planningandbuilding/1350619	Yes
2007 (commissioned)- 2010 (reported)	Entrec Commissioned by DCLG.	Lower Cost Domestic Sprinkler (LCDS) systems - Evaluation of small-scale pilot trials in Fire and Rescue Services	Lower-cost Small Scale Sprinkler Pilots. Communities and Local Government (CLG) and the Chief Fire Officers' Association (CFOA) are working in partnership to undertake small scale pilots for a Lower Cost Domestic Sprinkler (LCDS) system in new build and existing housing. Typically, it is expected	gren001:02039309 http://data.parliament.uk/DepositedPapers/Files/DEP2012-0934/LOWCOSTDOMSPRI NKLERSEVALUATION.pdf	Yes

			that the domestic properties will be social housing accommodating tenants that are at high risk from fire. Fire safety team - now Home Office		
2008	BRE	Draft guidance for the design and implementation of a Lower Cost Domestic Sprinkler System (LCDS system)	Draft report was provided to FPA for use in publishing an industry guide.	gren001:02039311	No
2008 (commissioned) -June 2009 (reported)	BRE DCLG Commissioned.	Tall Buildings – Performance of Passive Fire Protection in Extreme Loading Events – An Initial Scoping Study The purpose of the project was to develop an understanding of the performance of passive fire protection under extreme loading events in order to inform Building Regulations Policy and. If necessary and/or appropriate, to formulate guidance for incorporation in ADB, in support of the fire safety aspects of the Building Regulations.	Findings found no need to go beyond ADB, and therefore we have not been able to find specific information about how the findings of this research was incorporated into any review of the building regulations.	gren001:00075995	Yes, it is available via the Grenfell Inquiry website.

January-August 2009	NERA Economic Consulting	<p>A Cost Benefit Analysis of Options to Reduce the Risk of Fire and Rescue in Areas of New Build Homes</p> <p>Research specifically considered the cost effectiveness of sprinklers in new homes in the Thames Gateway</p>	<p>Report published in February 2010.</p> <p>Research referenced in June 2010 submission from Mike Larking to Minister Bob Neill⁹</p>	https://www.nera.com/content/dam/nera/publications/archive2/PUB_CostBenefitFireFeb2010.pdf	Yes
2010 (commissioned)-2011	BRE	Revision of BR 187- External fire spread: Building separation and boundary distances	BR 187 was revised as a consequence of this.	gren001:02039315	<p>Yes. It must be purchased via the BRE website:</p> <p>https://www.brebookshop.com/details.jsp?id=327392</p>
11 May 2010	Exova Warrington fire	BD2846 Compartmentation in roof voids	The Department published the report in 2010.	gren001:00127086	No
December 2010	BRE	The performance in fire of structural insulated panel systems and the relationship between the results from standard fire tests and performance under realistic conditions	<p>No change in ADB as a result of this as the data was handed over to the industry to develop their own guidance. The work was published online and shared publicly. It was shared with industry organisations including:</p> <p>The industry organisations that received the data are: BRE, the Fire and Rescue Service, Fire</p>	https://webarchive.nationalarchives.gov.uk/ukgwa/20120919132719/http://www.communities.gov.uk/documents/planningandbuilding/pdf/1798045.pdf	Yes

⁹ gren001:00057105

			Brigades Union, Local Authority Building Council, Scottish Building Standards Agency, National House Building Council, RiscAuthority and the UK SIPS Association.		
December 2010	BRE	The impact of fire on the environment and building sustainability	The Department concluded there were no useful conclusions.	https://webarchive.nationalarchives.gov.uk/20120919204115/http://www.communities.gov.uk/documents/planningandbuilding/pdf/1795639.pdf	Yes
June 2011 (commissioned) -March 2013 (reported)	BRE	Eurocodes Representation and Implementation	Eurocodes were adopted; BS EN 1993-1-2 Eurocode 3, Design of steel structures, General rules, Structural fire design [2005] is referenced in ADB.	The Department's Records Team was unable to locate this document.	No
6 February 2015 (Workstream 3b) 24 February 2015 (Workstream 4) 25 February 2015 (Workstreams 2 & 7) 27 February 2015 (Workstream 5)	BRE	Compartment Sizes, Resistance to Fire and Fire Safety Project Workstream 1: Periods of fire resistance Workstream 2: Maximum fire compartment sizes Workstream 3a: Construction details – roof voids, cavity barriers and fire/smoke dampers	Informed technical review of fire safety aspects of the Building Regulations, ADB and primary legislation. BRE carried out a cost benefit analysis of residential sprinklers for the Chief Fire Officers Association (CFOA report). This study looked at houses, flats, houses of multiple occupation and care homes. It used FDR1 fire statistics data from 2003 to 2008 and did not explicitly address the height of buildings.	https://www.gov.uk/government/publications/compartment-size-resistance-to-fire-and-fire-safety-research	Yes

<p>3 March 2015 (Workstreams 1 & 6)</p> <p>4 March 2015 (Workstream 3a)</p>		<p>Workstream 3b: Construction details – guidance document</p> <p>Workstream 4: Fire protection of basements and basement car parks</p> <p>Workstream 5: Sprinkler provisions This 2015 research covered the findings from research completed by BRE and commissioned by CFOA in 2012 on cost benefit analysis of residential sprinklers.</p> <p>Workstream 6: Space separation</p> <p>Workstream 7: Means of escape for disabled people</p> <p>The main aim of this project was described as being “to produce robust evidence and data based on research, experimental fire testing, computer modelling and laboratory testing, where necessary, in a number of linked work streams in relation to fire safety and</p>			
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		associated provisions in Schedule 1 of Part B of the Building Regulations 2010”.			
2016 (final report issued in 2017)	NBS Research	Usability Research - Approved Document B (Fire Safety) and Approved Document M (Access to and use of buildings)	Fed into the style guide for writing Approved Documents.	https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/591028/Usability_Research_ADB_and_M.pdf	Yes