

Defra / Environment Agency
Flood and Coastal Defence R&D Programme

R&D Technical Summary W5A-071/2/TS

Improved Guidance and Standards for Local Flood Protection

Background to the R&D

The interim Government guidance on *Preparing for Floods – Improving the Flood Resistance of Domestic and Small Business Properties* was published in early 2002. It explains the importance of assessing and if necessary improving the flood resistance of the building fabric if a property is to be protected against flood damage by using removable household flood products (e.g. flood boards). It also explains that consideration should be given to use of freestanding temporary barriers to keeping water away from the property.

Following on from this, two R&D projects have now been completed to support the informed use of local flood protection products. These cover (1) guidance on the use of different types of flood products, and the other measures – such as improving the flood resistance of walls and floors – that need to be considered, and (2) performance standards for flood products. Both projects were led by the Department for Trade and Industry under its Construction Industry *Partners in Innovation* scheme. The R&D was supported by a large number of stakeholders, including Defra, the Environment Agency, ABI, Council for Mortgage Lenders, Flood Protection Association and Building Research Establishment. Each project is summarised below.

Standards for the repair of buildings following flooding (PII Ref F-01-CIR48)

CIRIA (Construction Industry Research & Information Association) has an ongoing project to develop standards for repairing or adapting buildings that have been or may be affected by flooding. This will provide detailed specifications and guidance on the construction of flood resistant walls, floors, sanitary fittings, including the related use of expert services, to minimise damage in the event of future flooding.

This follows up the two CIRIA / EA flood booklets on (a) Damage Limitation, and (b) Repair and Restoration. The CIRIA standards will be available Autumn 2004. Interim guidance and advice has been published in May 2003.

Evaluation of the performance of products to resist flooding of buildings (PII Ref O-HRW0023)

HR Wallingford has now completed the development of the test installation and performance specifications for testing temporary flood protection products which are installed in the event of an imminent flood and removed when the flood hazard is over. The first two were published in May 2003 on (a) removable household products for installation across building apertures such as doors and airbricks, and (b) temporary freestanding barriers that are assembled close to, but not in contact with, building(s). A third on flood skirts is still under development.

Results of the R&D

The two R&D products have been co-ordinated and steered by the same steering group. The CIRIA project has drawn together currently available information on good practice so as to provide interim guidance. It has not spent time in assessing and refining current knowledge – this is a task for the main ongoing project.

The HR Wallingford project has successfully developed a test facility and related test protocols. An initial group of flood products have been assessed and test certificates awarded to some products.

R&D Outputs and their Use

CIRIA has produced a third publication in its series of practical advice guides on helping the public to take action to reduce the impact of floods. The publication “*Flood Products*” can help homeowners with DIY or other technical experience to assess the risk of flooding to their home and to understand the different routes through which floodwater may enter. It explains what protection can be expected from flood

protection products as well as other measures that can be taken to reduce floodwater entering the property. To accompany “*Flood Products*”, CIRIA has produced a series of advice sheets with more technical information on improving the flood resistance of buildings. These will help homeowners and others to work out the most appropriate approach to improving the flood resilience of any particular property. The advice sheets are also useful to when instructing builders, surveyors and other specialist contractors.

HR Wallingford has developed “Publicly Available Specifications” (PAS) under a British Standards Institute (BSI) “Kitemark” scheme for assessing flood products against selected loading conditions. The PAS can now be used in conjunction with a test facility at HR Wallingford and a factory assessment scheme to check on manufacturing standards. Product certification through the scheme now provides assurance to users of flood protection products that these have been independently tested and manufactured in accordance with the specification.

A pilot project is being carried out in 2003/04 in the Severn Valley to consider and trial in an operational context the potential options and activities for using local flood protection to reduce flood risk to existing property. This will contribute to the development of an overall strategy for its use. See Technical Summary W5B-071/3/TS.

This R&D Technical Summary relates to R&D Project W5A-071 and the following R&D outputs:

- **R&D Publication W5-071/HQP *Flood Products - Using flood protection products - A guide for homeowners*** Published May 2003 by CIRIA / Environment Agency
www.environment-agency.gov.uk/floodline
- **BSI Publicly Available Specification (PAS) 1188 *Flood protection products - Part 1: Building apertures, and Part 2: Temporary and demountable products.*** Published 19th May 2003
Further information available from BSI website www.bsi-global.com/kitemark
- CIRIA advice sheets on *How to improve the flood resistance of your home* Published on web May 2003 available at www.ciria.org/flooding/advice_sheets.html

Publication: Internal Status: Release to Regions with separate AMS guidance
External Status: Released to Public Domain

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The above outputs are available on the Joint Defra / Environment Agency Flood and Coastal Defence R&D Programme webpages (www.environment-agency.gov.uk/floodresearch). Copies are held by all EA Regional Information Centres. The CIRIA / EA booklets giving advice on flooding are also available through the Environment Agency’s 24-hour “Floodline” (Tel UK only: 0845 988 1188) and on-line at www.environment-agency.gov.uk/floodline

The BSI Publicly Available Specifications must be purchased through BSI Customer Services (Tel: +44 (0)20 8996 9001; Fax: +44 (0)20 8996 7001; Email: orders@bsi-global.com.)

For further information on CIRIA and HR Wallingford flood programmes contact their project managers - Craig Elliot at CIRIA (Tel +44 (0)20 – 7828 4441) or Pam Bowker at HR Wallingford (Tel +44 (0)1491 - 835381).

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