



Instant Risk Guidance

**TR 10 Flood and Water
Damage**

TR 10 Flood and Water Damage

Arising from climate change and predictions of more intense rainfall and stormier weather in summer months, wetter winters and rising sea levels, damaging floods are likely to continue to be experienced more frequently, causing loss of life, extensive property damage and serious business interruption.

Flooding can be divided into four broad areas:

- Coastal flooding and erosion
- River (fluvial) flooding
- Surface water (pluvial) flooding
- Groundwater flooding

There is also potential risk of flooding from the failure of infrastructure including reservoirs and sewage systems.

Against this background an assessment of the flood risk should be determined based on historical information, enquiries of the Local Authority and reference to on-line flood mapping data published by the Environment Agency, the Scottish Environment Protection Agency and the Department of Agriculture and Rural Development in Northern Ireland.

Where dictated by the risk profile, consideration should be given to drawing up a flood plan (either as a standalone document or part of a wider Business Continuity Plan), a copy of which should be kept off site at an out of risk location together with the provision of flood resistance and flood resilience measures such as:

- Installation of demountable purpose-made flood barriers or boards to doorways and other openings;
- Installation of automatic flood-proof air bricks or the provision of specially designed air brick covers to prevent water ingress;
- Fitting of non-return valves or backflow valves to drainage systems;

- Replacing timber, tiled or other vulnerable ground floors with solid or suspended concrete floors incorporating robust damp proof membranes to resist floodwater and rising groundwater;
- Where necessary, basements provided with adequate drainage via sump pumps;
- Provision of flood skirts of water-resistant sheeting which can be raised around the perimeter walls of a building – normally reserved for detached, high risk premises;
- Anchoring fuel and other liquid storage tanks to prevent flotation;
- Raising electrical intakes, fuse boxes, sockets and wiring above likely flood levels;
- Raising the elevations of critical/susceptible equipment or stock, or relocation to an upper floor or to another part of the premises which is out of risk. Particular attention should be given to data and telecoms facilities, and critical plant and machinery;
- Ensuring that maintenance programmes for the buildings and external areas are robust –e.g. routine inspection and cleaning of drains, etc;
- Ensuring that oil and other liquid tanks are suitably anchored to prevent flotation;
- Provision of sandbags and proprietary “hydrosacks” for short term emergency protection.

Flood Resistance Products

Typical applications of flood resistance products:

- Demountable purpose made flood barriers and boards for the protection of doors, low level windows, etc.
- Automatic flood resistant airbricks and airbrick covers.
- Waterproof sealants applied to brickwork or stonework protecting against flood water seepage.
- Non-return valves or backflow valves to drainage systems.

Detailed information on managing the flood risk is contained in *A guide to preparing your business for flooding* published by the Environment Agency,

available at <https://www.gov.uk/government/publications/preparing-your-business-for-flooding>

Flood Maps for all areas of the UK are available at <https://flood-warning-information.service.gov.uk/long-term-flood-risk>

Other useful links include:

- *The National Flood Forum* - <https://nationalfloodforum.org.uk/> This is an extensive site offering a wide range of help and advice about flooding. The Blue Pages Directory on the National Flood Forum website gives details of suppliers and contractors for all aspects of flood defence and flood remediation.
- *Know Your Flood Risk - Flood Recovery Guide* - <https://thefloodhub.co.uk/wp-content/uploads/2018/11/Know-Your-Flood-Risk-FloodRecoveryGuide.pdf?msclkid=bd684215bfec11ecad9f663e4c5249eb>

Escape of Water

Serious flooding can also arise from a burst or leaking water tank, water supply pipe, radiator or drain within the premises, commonly referred to as 'an escape of water'. To mitigate this risk, the following measures are recommended:

Preparedness

- Ensure you know the layout and routes of all water, gas and electricity services within the premises and that this information is recorded and available.
- Know the location of all main and subsidiary isolation-valves and ensure they are fully operational – regular exercising of the valves will ensure easier isolation.
- Research the details of reliable local plumbing contractors and keep their contact details available.
- Consider the installation of water leak detection alarms and shut-off valves linked to an alarm receiving centre, particularly where highly critical data and telecoms facilities are concerned. Flow-based detection devices linked to automatic isolating valves may also need to be considered.

Prevention

- Protect pipes and tanks with good quality lagging to the relevant British Standard.
- Repair dripping taps and faulty ball valves as they can cause waste pipes to freeze.
- For unoccupied buildings or those with a history of freezing incidents, leave the heating set at a low level or drain all equipment that is susceptible to condensation or freezing.
- Install a frost stat set at a minimum of 4°C to central and other heating systems and check it is working correctly.
- Arrange for the premises to be inspected at least daily in periods of very cold weather.
- Service heating systems at least annually, preferably prior to the onset of winter.
- Ensure all boilers are safeguarded against freezing - particularly drain and condensate lines. Drain down all idle boilers.

Damage Limitation

- Immediately isolate water supply at the stop cock. Turn on cold taps to drain the system as quickly as possible. (As part of emergency planning, the presence of process plant and other equipment for which a constant water supply is safety critical should be identified).
- Turn off the central heating.
- Protect or remove any vulnerable contents or equipment that may be damaged.
- If a pipe freezes, always isolate the supply from the tank or mains. Before commencing to thaw the system, measures should be taken to remove contents which might be damaged by thawing water escaping from a burst. Never use a blowlamp or any other form of naked flame to thaw a frozen pipe.

Sprinkler Systems

- For all sprinkler systems, engage sprinkler contractors to make systems 'winter safe'.
- Especially vulnerable are systems protecting outdoor areas or cold areas (attics etc.), valve chambers and pump rooms.

- Heating should be maintained at all times at or above 4°C. Exposed pipe work should be trace heated and lagged and this must be routinely inspected and maintained.

Rainwater Penetration

Rainwater penetration through roofs and other elements of the building fabric can cause serious damage to the premises and its contents often resulting in significant business disruption.

Measures to control the risk of rainwater penetration include the following:

- Ensure that buildings are maintained in sound condition.
- Inspect roofs at regular intervals and implement repairs/renewals as necessary. As well as self-inspection, it is recommended that periodic roof inspection is carried out by a roofing contractor as part of planned maintenance. How often such inspections should be carried out will depend on a number of factors such as the type of roofing material, the age of the roof and the repair history. Generally, this should be performed every 1-5 years depending on these elements. Flat felt roofs require particularly close attention.
- For all roofing needs, it is recommended that a contractor which is a member of the National Federation of Roofing Contractors (NFRC) or similar trade association is appointed. Details of NFRC registered contractors can be located at <https://www.nfrc.co.uk/>
- Gutters and downpipes should be regularly inspected, cleared of debris and vegetation and repaired as needed. Valley gutters and internal downpipes should receive particular attention.
- Ensure that all goods (including packaging) susceptible to water damage are stored at least 150mm off the floor by the use of pallets, raised racking or other means.