

## Escape of Water

The cost of insurance claims resulting from escape of water is significant. Indeed, water damage represents the number one source of claims for many types of property. The Association of British Insurers (ABI) in the UK estimates that their member companies pay out around £2.5m a day for claims relating to escape of water. This is about 20% of all UK commercial and domestic property claims. Individual claims tend to be relatively large reflecting the extent to which water can cause widespread damage to property plus disruption to businesses and to individual households.

Many claims for escape of water occur during freezing conditions in winter months but poor installation, poor maintenance and accidental damage are also key factors. The type of property also has a bearing on its susceptibility to damage.

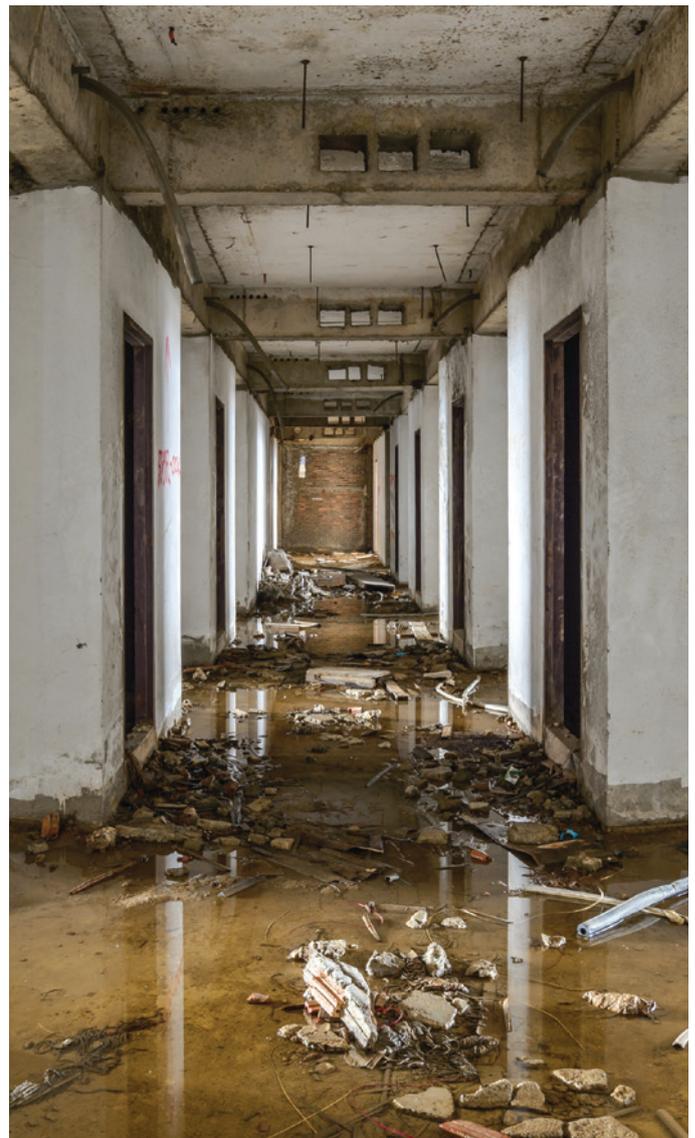
### Commonly exposed properties

Any property with plumbing and fixed water installations can be susceptible to damage from escaped water. Experience suggests the following properties are particularly vulnerable:

- Flats, especially high-rise developments
- Hotels
- Student accommodation
- Unoccupied properties
- Private houses
- Second homes
- Older properties - over 20 years old
- IT and comms suites.

In recent years there has been an increase in the complexity and number of plumbing installations, especially in residential properties. For example additional bathrooms are being installed, new boilers are fitted and central heating systems are installed or extended. There is also greater use of washing machines, dish washers, fridges with built-in ice makers and underfloor heating. Another factor is that modern plumbing features widespread use of compression and push-fit joints rather than soldered joints. There is also greater use of plastic pipework and fittings which have proven less resilient than traditional copper.

Whichever type of property is affected, water is likely to find the route of least resistance through the structure often leading to damage some distance away from the original leak. This can result in damage to the building structure as well as electrical installations, decorations and furnishings/contents. Structural damage can also occur after drying out following escape of water.



This includes cracking of masonry or plasterwork and warping of timber components. In combination, the damage to the building and the contents can be devastating to the property owner and the tenants, taking many months or even years to recover in full.

### Escape of Water - Potential Sources of Escape

- Burst water pipes, usually resulting from corrosion or freezing
  - Copper pipes and fittings will corrode if exposed to alkaline concrete.
  - Copper and plastic pipes are susceptible to freezing, with leaks evident when they thaw, especially if this is a sudden process.
  - Copper and plastic pipes can be affected by industrial chemicals if poorly sited.
- Physical damage to pipework
  - Pipes hidden behind wall panels, buried in plasterwork or in concrete floors can be damaged by nails or screws.
  - Exposed pipes can be damaged by impact, including fork lift trucks and stock movements in industrial premises. Pipes can also break if items are hung or placed on them exceeding the weight limits of brackets or pipe hangers.
- Leakage from pipe joints or pipe failure
  - Copper pipes require skilled installation of fittings. They are more tolerant of pressure fluctuations, and failure of fittings is less likely.
  - Plastic pipes often have compression or push-fit joints that require less skilful installation, but these can be less tolerant of pressure variations, and joint failure is usually catastrophic.
- Poorly sealed baths and shower trays
  - Leaks tend to develop over a long period, but can result in damage on floors below.
  - Baths can also overflow if left unsupervised while water is running.
- Overflowing water storage tanks
  - Can result from sticking float valves, often requiring just a replacement washer to rectify.
  - Overflow pipes should always be installed to discharge outside the building.
- Blocked drains
  - Blocked underground drains can result in back-flow into the building and over-flow from internal drains including foul water.
- Leaks from pressurised water systems in high-rise buildings
  - Water systems in high-rise buildings often need to be pressurised to pump water to holding tanks at high level. Failure of pipework or fittings within the pressurised system can result in large scale discharge of water.
- Leaks from radiators and other heating equipment
  - Leaks can result from poor maintenance or from physical damage to pipework or valves.
- Cracked underfloor heating pipework
  - Wet pipe underfloor heating systems use small bore pipes (often plastic) set in a carrier tray and encased in concrete. A leak can be undetected for a considerable period, and tracing the exact location of the leak is difficult.
- Faulty equipment such as washing machines, dishwashers and ice makers
  - Water supply pipes and fittings can be poorly installed or pipes can become damaged.
  - Drain pipes can either block or hoses can become dislodged from drains.
  - Door seals or other maintenance failures can occur.
- Leaking condensate drainage for air conditioning units
  - Large air conditioning plant is normally contained in a plant room that is often at high level. Floors are normally sealed (tanked) to avoid damage from escaped water, but tanking can fail and allow water penetration.
  - Individual air conditioning units are often installed in specialist areas such as IT and Comms suites containing high value electronic equipment. A/c units have a pipe to carry away condense water, which needs to be routed away from electrical items to avoid damage if there is a leak.
  - External air conditioning units normally discharge condensate directly to drainage so present few issues.
- Leaking joints in sprinkler systems
  - Sprinkler systems carry water under pressure, connected to a supply that is designed to produce a large quantity of water over a sustained period.
  - Leakage can result from physical damage, frost or corrosion.





### What Precautions Can Be Taken?

Being aware of the potential for damage and disruption is essential. Taking a few simple precautions to prevent water escape will significantly reduce the amount of damage that results.

There is no substitute for regular inspection and maintenance programmes - whether in a commercial, industrial or residential setting. All identified defects, even dripping taps or running overflows should be investigated by a specialist and rectified without delay. Pre-winter checks should be scheduled in plenty of time to allow remedial action before the cold weather arrives. Precautions should be considered prior to any periods of unoccupancy, including consideration of water flow detection and leak detection. Records should be retained as evidence of inspections and any precautions taken.

Practical precautions to reduce the risk of the escape of water include:

#### Infra-structure protection

- Adequate inspection and maintenance programmes should be in place covering the whole water installation including pipework, storage tanks, boilers, heating systems and domestic appliances.
- Stop-taps on the water supply and sub-valves on water distribution systems should be identified. Attach labels detailing their function, make sure building occupants are aware of their location, and ensure they are exercised regularly.
- Install stop-taps on each floor of multi-floor buildings or each zone of multi-occupant sites.
- Ensure that any copper pipes embedded in concrete are sleeved to avoid corrosion.

#### Frost protection

- Frost protection. Exposed pipes plus pipes and water tanks in roof spaces should be adequately lagged. Electrical trace heating should be considered if they are especially exposed.
- Adequate heat should be maintained during cold weather. Consider leaving loft hatches open in extreme conditions to allow warm air to circulate (but be mindful of the possibility of ice dams forming externally on the roof).
- Ensure sprinkler pipes, valves, and water storage tanks are protected against freezing. Sprinkler contractors should be requested to check insulation and electric trace heating before the start of winter.

#### Operational controls

- Avoid pouring fat and grease down drains. Clean grease traps regularly if installed.
- Ensure that no water or air conditioning condensate pipes run over electrical equipment, including IT and comms cabinets.
- Provide clearance between the floor and storage where possible. For example, electrical equipment should be raised at least 100mm from the floor, as should any stored goods that are susceptible to damage from water flowing across the floor.

#### During periods of unoccupancy

- Isolate the water supply and drain down whenever the property is left unoccupied.
- Arrange for regular site inspections during the period of unoccupancy, at least externally if allowing internal access is difficult.

#### Water flow and leak detection devices

- Installation of water flow detection devices should be considered. These can be used to isolate the supply if prolonged flow is detected or if flow is detected when a property is unoccupied. These can be remotely monitored - allowing, for example, isolation of the water supply for known periods of unoccupancy.
- Leak detection devices should also be considered in target areas, such as below water tanks, pumps and appliances. These can be used to sound an alarm warning of a leak, they can be remotely monitored and can be allied to water flow control devices so water can be isolated if a leak is detected.

#### Management controls

- Provide tenants, managing agents, caretakers etc with details of emergency actions including the means of isolating the water supply, system or appliance, plus a 'To Do' list for emergency use.
- Make sure contact details for reputable local plumbers, heating engineers and electricians are available at the premises and can be accessed by occupants including tenants, managing agents, caretakers etc.

### What can you do if a leak occurs?

- Turn off the water supply to the building or part of the building that is involved.
- Isolate the electricity supply to the affected area. Do not touch electrical equipment that has become wet.
- Turn off heating and hot water systems
- Drain systems that hold water. Turn on taps to drain storage tanks.
- Alert occupants of neighbouring properties, especially on floors below you.
- If water starts to seep through ceilings, place a bucket below the leak. Pierce the ceiling with a broom handle or similar if it starts to bulge.
- If pipes have frozen, attempt to defrost them slowly using hot water bottles or warm air blowers - do not use naked flames such as blow torches. Loft hatches and doors should be left open to allow warm air to rise to upper floors and roof spaces.
- Notify insurers, the landlord, managing agents or anyone else who is responsible for the building.

### In conclusion

A leaking domestic pipe can discharge 2,000 gallons of water a day – that's over 9,000 litres. A broken industrial supply could release a lot more so the potential for major damage and disruption is significant, especially for an extended holiday or shutdown period. Isolating the mains supply, ensuring the property is visited daily and implementing a range of other effective risk control measures could save a huge amount of upheaval.

It is clear that escaping water can cause serious damage and disruption whether in a commercial, industrial or residential environment. Taking time to identify potential problem areas and to instigate simple remedial actions could make a real difference to the outcome.

### Guidance and useful information

A range of information is available in QBE Risk Solutions Property Technical Guides ([www.QBEurope.com/risk-solutions/document-library/technical-guides](http://www.QBEurope.com/risk-solutions/document-library/technical-guides)), including -

- Winter Freeze Checklist
- Prevention of Ice Dams
- Prevention of Water Damage in Historical Buildings

For further guidance and general enquiries please contact:

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Guidance is also available from the Association of British Insurers (ABI) at: [www.abi.org.uk/Insurance-and-savings/Products/Home-insurance/frozen-pipes](http://www.abi.org.uk/Insurance-and-savings/Products/Home-insurance/frozen-pipes)

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