

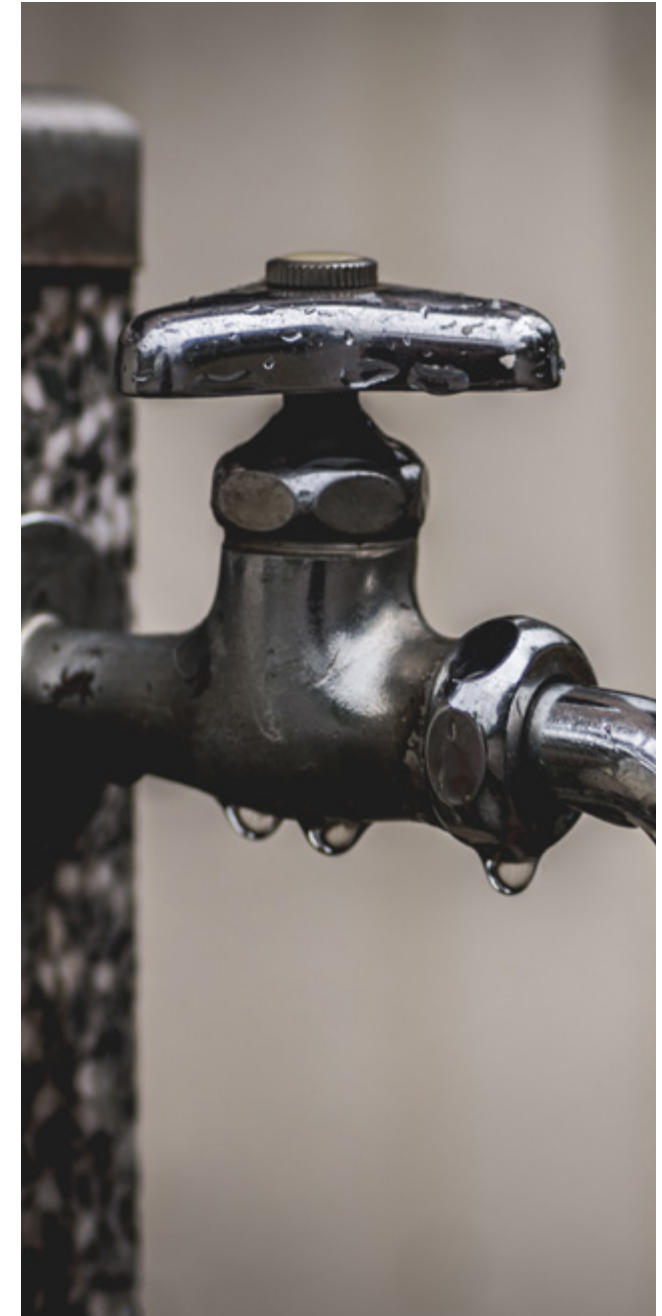


# Escape of water

A top risk for property owners

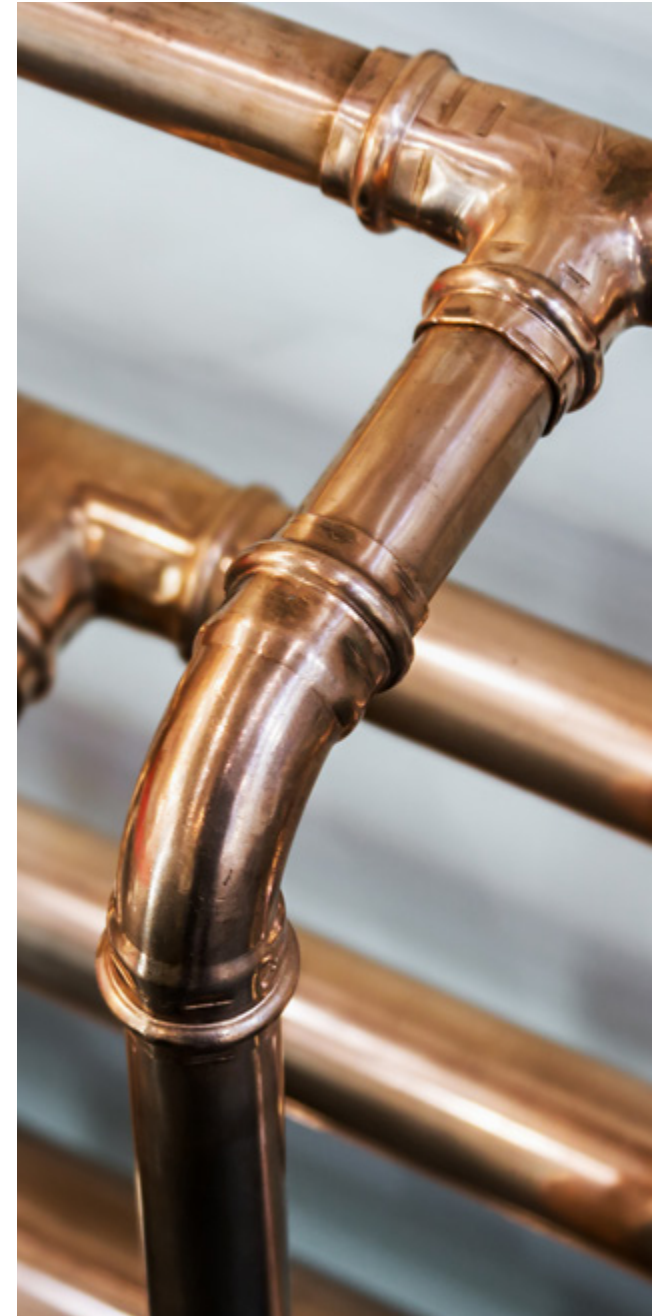
Escape of water poses one of the most significant risks to property owners. The cost to property owners can be considerable when taking into account insurance excesses, lost time, damage to brand/image, loss of tenants, loss of valuable data and management time. The value of claims paid by the UK insurance market for escape of water is estimated to be in the region of £2.6m per day.

**There are several causes that result in the escape of water and this guide offers some practical advice to help protect properties and prevent unwanted damage.**



## Pipework systems

- Check the age and general state of each water-system, including those supported by pipe clips and hangers, and if in poor condition appoint a professional plumbing contractor to replace or improve it.
- Confirm whether pipes are located in positions vulnerable to mechanical damage e.g. where they are liable to be damaged by fork-lift trucks, delivery vehicles, tenant vehicles or other equipment. If so, they should be protected or relocated, or the threatening activity moved.
- Ensure water pipes are not installed above critical equipment such as computer-servers and electrical cabinets. In these instances pipework should be relocated.
- Metal pipes are liable to corrode, internally and externally. Check that closed systems, such as heating pipes, are protected with suitable anti-corrosive additives.
- Check on a regular basis that there are no signs of even the most minor of leakages. If any leaks are found they should be immediately rectified.
- Make sure that the overflow pipes on water tank cisterns are of an adequate size, and have unobstructed discharge to an appropriate place, usually to the outside.
- Where pipework passes through walls these should be single runs (no joints). Joints are a potential point of failure. Leaks into wall cavities can go undetected for long periods.
- Make sure that the location of stop-cocks and shutoffs on water-mains are known and accessible to staff. Regularly check that stop-cocks and shut-offs are operational. Ensure that there are sufficient subsidiary isolating valves, especially for large tanks. Provide these with labels to help ensure their correct identification and operation.
- Metal pipes may be liable to corrosion, internally or externally. Check that closed systems, such as heating pipes, are protected with suitable anticorrosive additives when needed.
- The integrity of internal bunds on water tanks should be inspected and maintained.



## Interior appliances

- Air conditioning units can produce large volumes of condensed water. For externally mounted units, this is generally not a problem, but the small units often fitted internally can be problematic as their drain lines can easily be disconnected. Drain lines should be regularly inspected.
- Items being stored, especially water susceptible items, should be stored off the floor, on racks, shelves or as a minimum on pallets so they can be easily moved if needed.
- Flexible connectors are often used for wash basin taps, drinks machines and similar. These can suddenly fail and release large volumes of water in vulnerable areas. Isolating valves should be fitted in easily accessible positions, and the connectors themselves regularly examined and replaced if necessary. The use of automatic appliance shut-offs should be considered where there is the possibility of a downstream leak.
- All roofs should be regularly inspected - replace any loose or damaged tiles, slates, ridge tiles and any other damaged roof claddings and flashings.

## Roof risks

- Assess the condition of roof lights checking for leaks, cracks or breakages.
- Check that flat roof coverings are in good condition - not showing evidence of cracks or splits, and are firmly stuck down, particularly at joints.
- Inspect and repair as necessary all cement fillets and brickwork pointing including chimneys, coping stones, lintels and ledges.
- Examine roof gutters and downpipes and ensure they are clean, unobstructed and kept free from leaves, moss and vegetation. These should be cleaned at least once a year, possibly more often depending on the location of trees.



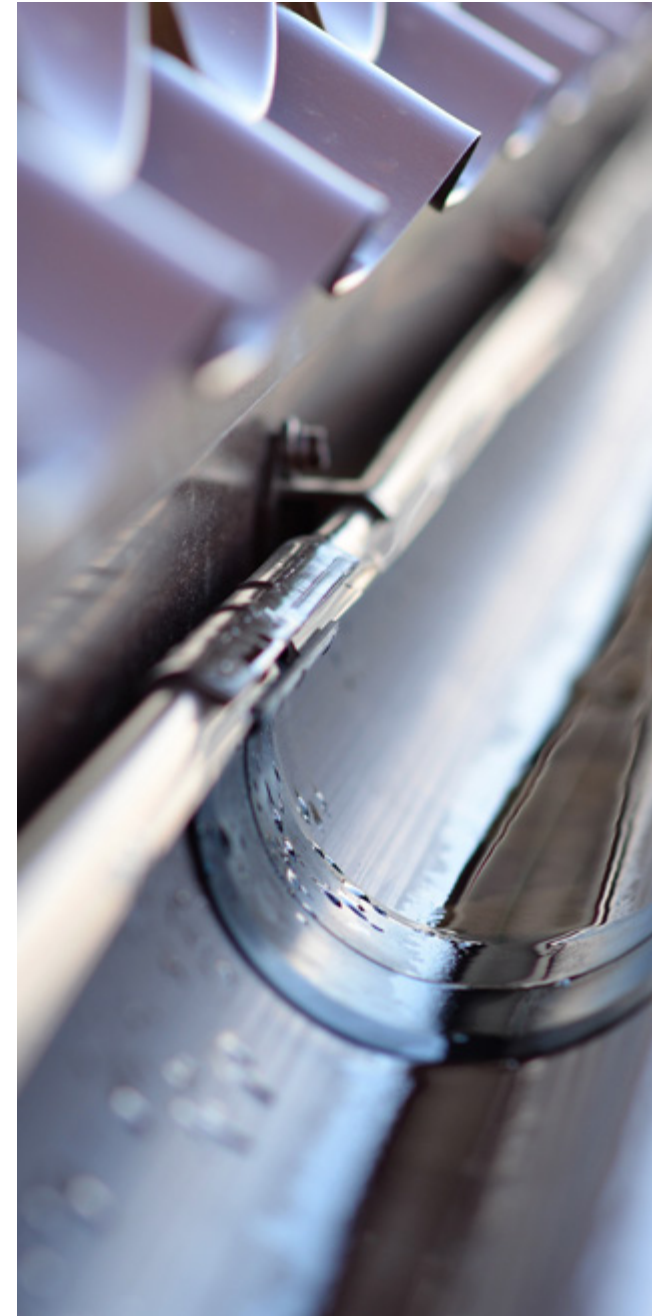


## Rain-water systems

- Ensure that if gutters overflow in storm conditions the water will be discharged externally. This is particularly relevant to valley gutters and those which run behind parapets. Where overflow gutter-outlets discharge externally through the parapet overflow weirs should be installed.
- Check all internal drainpipe systems to ensure: they are protected from mechanical damage; that inspection covers and rodding eyes are easily accessible and free from obstruction; and all covers are securely fixed to prevent leakage.
- Examine the condition of the underground drains, ensuring the free flowing of water.
- Ensure all gullies, grates and drainage channels both inside and outside the building are clean and free from obstruction. Inspections should also include oil interceptors and pre-formed concrete yard drainage channels as these are particularly prone to blockage.

## Water loss detection

- Consider the installation of water loss detection alarms and shut-off valves, which for some larger premises may be appropriately linked to a central monitoring station.
- Water loss detection should be considered for computer and communications areas, regardless of size, based on the vulnerability of the business to disruption.



# Freezing weather

**One of the most preventable escape of water risks is from frozen pipework and tanks during cold weather. Prior to the onset of winter, some basic checks should be made to reduce the risk of freezing.**

- All isolation points should be identified and made accessible where possible. If limited isolation points exist new isolation points should be installed.
- Any exposed pipework or water storage tanks should be lagged, this includes pipework running within voids. This is especially pertinent to roof voids and pipework/tanks located near to openings that are in constant use.
- Where pipework runs externally or where pipework and tanks are in areas where the building's heating system will not make a difference, trace heating should be installed.
- Buildings need to be maintained above freezing at all times, especially during unoccupied hours. Set low temperature building frost stats to ensure the building is kept above freezing at all times. On larger buildings the frost stat temperature may need to be at least 10°C. Any lower and the extremities of the building can still be below freezing.

- Boilers and heating systems should be maintained at least annually. The system should also be tested prior to the cold season in order to ensure the system operates correctly when needed.
- Any unnecessary openings within the building envelope need to be sealed to ensure internal temperatures are maintained.
- Regular internal inspections should be made over holiday periods to ensure that any leaks are detected and dealt with.
- In areas prone to heavy snow fall, it is recommended that roof loading calculations are performed. Where necessary provide adequate equipment to remove snow from the roof and set up an action plan in case of excessive snow falls. Additional considerations should be made where photovoltaic panels ('solar panels') are installed.

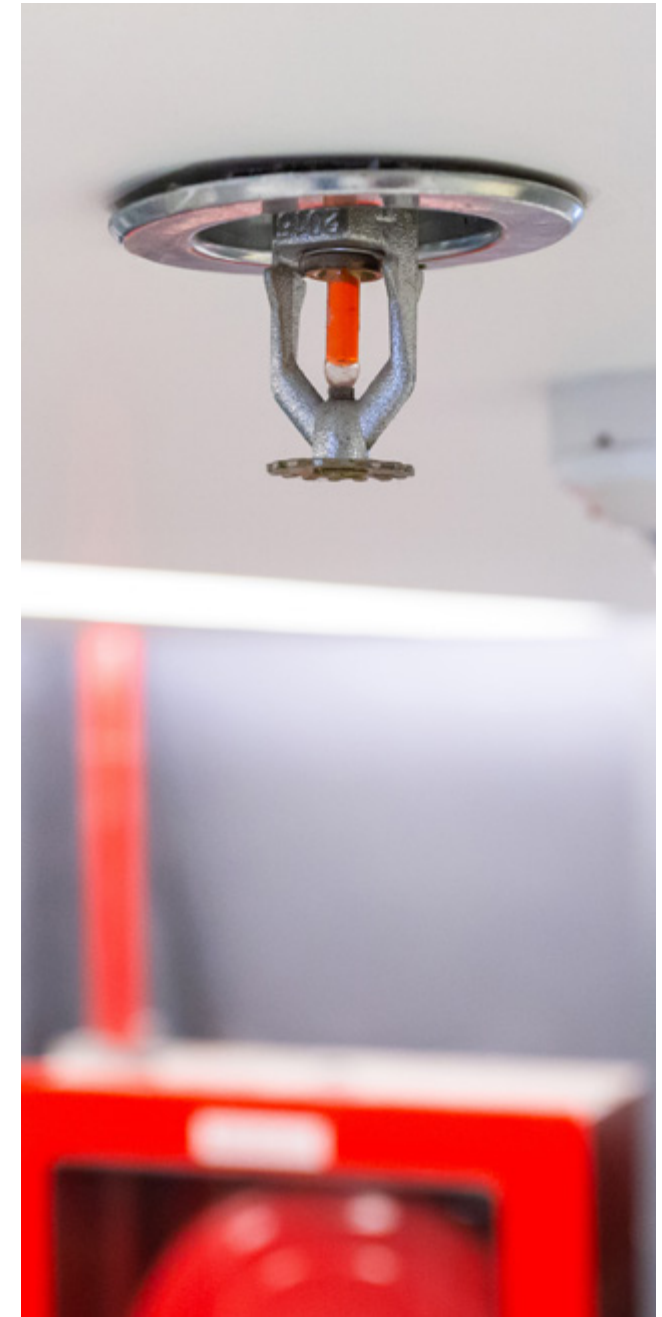
**Ensure all buildings with live pipework and full tanks remain heated during any cold spells.**



# Sprinkler systems

- Sprinkler installations need special attention and any specific instructions and maintenance requirements should be followed. Specific advice on their care and maintenance can be obtained from RSA Risk Consulting.
- For in-rack sprinklers, ensure that the minimum distance of 150mm from storage is respected. Install specific damage protection if needed (using a sprinkler contractor). Train forklift truck drivers to understand the risk of water damage.
- Ensure employees are trained to limit damage in case of leakage. For example, they should know the location of the main water valves and be able to shut off the sprinkler system. Adequate training procedures should be in place.
- Any installations or pipework that could be easily impacted should be protected adequately. This includes sprinkler heads.
- Consider leaving alternative systems on 'air' all year round. The constant exposure to water and air can lead to increased corrosion.
- Constantly running jockey pumps or intermittently sounding water gongs could be a sign of a potential leak and need to be investigated.
- Sprinkler protected buildings should be maintained above freezing at all times, unless all pipework is trace-heated.
- Sprinkler pump rooms should be kept heated to above 5oC, during the winter period. Some installation standards and pump manufacturers require higher temperatures and these should be followed. At low temperatures diesel becomes too viscous to pump.
- Ensure that the sprinkler water tanks are inspected every 10 years or more frequently for some types of tank as per LPC Rules for Automatic Sprinkler Installations 2015; TB203.3.7.
- Sprinkler systems that are 25 years old should be inspected as per LPC Rules for Automatic Sprinkler Installations 2015; TB203.3.8, or sooner if considered necessary by system condition.

**Maintenance, testing and inspection is key to preventing leaks in sprinkler systems.**



# Vacant buildings

- Drain down all wet systems where possible. This prevents malicious damage, component failure and the risk associated with freezing pipework.
- Where it is not possible to drain down the system, the building's heating systems should be maintained to at least 10oC to prevent freezing.
- Ensure key holders are available to respond in the event of a water leak. All responders should be aware of the isolation points, including sprinkler isolation, if left live.
- Regular internal inspections should be made. The regularity of inspections should be increased during severe cold spells if systems are not drained down.
- Consider leaving loft access points open to allow the circulation of air, and more importantly heat, into the loft space.
- Any trace heating on live pipework needs to be maintained.
- If the sprinkler system cannot be drained then it should be ensured that the sprinkler system is maintained, inspected and tested at the required intervals. If sprinklers are to be maintained in vacant units then the heating system, including trace heating, should also be maintained.
- In partially occupied sites, and where pipework passes through unoccupied areas and cannot be drained or isolated, then the unoccupied area should be heated.
- Any live systems should be maintained as if the building were occupied.

**Vacant units should be regularly inspected and systems maintained.**





## New build

- Combining electrical and water services within an enclosed riser should be avoided as this increases the severity of any potential damage.
- Upstands should be installed at all service risers to prevent ingress of water in the event of a leak.
- All water supplies to each floor should be fitted with shut-off valves.
- Water storage tanks should be bunded and the bund integrity maintained.
- Tanks should be fitted with high water level alarms, which preferably shut off the water supply. All alarms should signal to a permanently occupied area, such as a control room or gatehouse.
- Water storage tanks should not be sited above electrical rooms or other potentially critical areas.
- Water systems should be installed to Water Supply (Water Fittings) Regulations 1999, or to recognised local standards and the manufacturer's installation guide.
- Hydraulic testing should always be supervised.
- All systems should be fully commission tested. This includes all fittings and equipment. Testing needs to be carried out at working pressure and in line with the manufacturer's instructions.
- Commissioning should take place during daytime due to there being a greater chance of detection and rectification of issues.
- There should always be a full audit trail of all pipework, fixtures and fittings that details testing, approval and commissioning.

**Competent contractors should be used to install, test and commission systems. Closely monitor newly installed systems.**



# Tenants

- Inspect and maintain sealant around baths and showers.
- Ensure regular inspection of inlet and outlet hoses on washing machines and dishwashers.
- Regularly inspect connection to cisterns and taps.
- Regularly inspect traps from baths, showers, basins and sinks, where possible.
- Ensure awareness of the need to maintain and inspect boilers, water heaters and tanks.
- Only suitable heaters should be used within buildings. These should preferably be fixed to the floor and have suitable covers in place. No open flame heating is permitted (e.g. gas, paraffin or diesel). The heater should be kept clear of combustibles by at least two metres in all directions. Heaters should be fitted with auto shut-off in the event of overheating.
- Ensure tenants are aware of the need to report/inspect any leaks or suspected leaks regardless of size. This should be actively recommended to managing agents.
- All remedial work should be carried out by third party approved contractors.

