

# Manual Firefighting Water Supplies

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**Hydrants are the primary source for the supply of water for firefighting purposes, however alternative or additional supplies may occasionally be necessary.**

**This Loss Prevention Standard contains guidance on ensuring adequate water supplies for firefighting purposes.**



# Manual Firefighting Water Supplies



## Introduction

Most fires within buildings are extinguished by firefighting personnel. Even fires brought under control by automatic, fixed sprinkler systems may require final extinguishment by firefighters using hoses and firefighting water.

Unfortunately fire losses due to inadequate firefighting water supplies for both the amount of water that is available (demand), and the length of time the water is available (duration) are common. These issues are compounded when water supplies are remote, which can result in the firefighting teams having to travel significant distances to obtain firefighting water resource. This can lead to delays in deployment and ultimately increased losses and environmental impacts.



This Loss Prevention Standard provides guidance on ensuring manual firefighting water supplies are adequate in respect of commercial premises.

**Note:** This document is focussed on Property loss prevention in manual firefighting water supplies. It is not intended to address Liability exposures. The presumption is that all regulatory requirements, Fire Risk Assessments, and compliance with requirements placed by the local authority having jurisdiction which would include licencing, building permissions, regulations, codes, or standards, have or will be met.

## Factors which Influence Firefighting Water Provision

Factors to be consider include:

- The length of time from the fire starting to any manual firefighting efforts deploying.
- How the fire alarm is raised, consistently and reliably 24-hours per day to a constantly attended location.
  - ✓ Automatically – automatic fire detection.
  - ✓ Manually – break glass alarms or pull stations, or telephone call to the public authorities.
- Provision of any appropriately designed, installed, and maintained fixed automatic fire suppression systems to suppress the fire at its seat.
- Building construction, height, storeys and levels of internal fire compartmentation.
  - ✓ Including building linings and internal partitioning.
- Nature, size, and continuity of combustible fire loading.
- Wind/environmental conditions.
- Topography, nature of the surroundings and nature of access to building(s).
- Access to the seat of possible fire areas within the building.
- Exposure e.g. can the fire spread to nearby buildings or storage, etc.
- The values of the property and the business risk exposed.

## How Much Water is Actually Needed?

Assuming there is no danger or threat to life, the aim is to extinguish the fire with the minimum amount of property damage, and impact to the business and environment. Firefighting water shortage can have an impact on the effectiveness of the firefighting tactics by the Fire and Rescue Services and increase the risk of substantial fire losses.

Experience has shown that water usage in a fire is very much dependent on all the variables listed earlier. Aviva has seen up to 9000 litres per minute (l/min) of water being deployed by the fire service for several days, for a high hazard occupancy fire. This is a high volume of water, and it was fortunate the site in question was close to a large inexhaustible and accessible water source (river) and that the agencies involved sanctioned this approach for this duration.

From the [Fire and Rescue Services Act 2004 Section 38](#): 'A fire and rescue authority must take all reasonable measures for securing that an adequate supply of water will be available for the authority's use in the event of fire'.

Water undertakers, e.g. companies that have a statutory duty to supply water and/or sewerage services to premises within a specific geographical area, have a legal duty in the United Kingdom under the Water Industry Act to provide and maintain fire hydrants. There is, at the present time, no legislation which requires water undertakers to provide minimum flow and pressure rates for firefighting purposes. There is guidance for certain occupancies, however this is not based on the specifics of a building or occupancy and is not underpinned by regulatory or jurisdictional enforcement. It should also be borne in mind, that the primary role of the Fire and Rescue Services is to save lives. The protection of a property and its business is not a primary focus of their activities.

In the UK from the [Building Regulations Approved Document B](#) - Requirement B5: Access and facilities for the fire service, there are only two requirements as follows:

- The building shall be designed and constructed to provide reasonable facilities to assist firefighters in the protection of life.
- Reasonable provision shall be made within the site of the building to enable fire appliances to gain access to the building.

The Building Regulations make no stipulation or requirements for firefighting water for minimising property damage nor business interruption, as this document is driven by life safety requirements.

The [National Guidance Document on the Provision of Water for Fire Fighting](#) published by the Local Government Association and Water UK, details the following water supplies as the minimum needed for manual firefighting requirements:

### Housing

- 480 l/min for detached or semi-detached houses of not more than two storeys.
- Up to 2100 l/min for properties of more than two storeys from any single hydrant on the development.

### Transportation

- 1500 l/min for lorry/coach parks, multi-storey car parks and service stations from any hydrant on the development or within a vehicular distance of 90m from the complex.

### Shopping, Offices, Recreation and Tourism

- From 1200 l/min to 4500 l/min depending on the extent and nature of the development.

### Industry (industrial estates)

Water supply infrastructure should provide as follows with the mains network on site being normally at least 150 mm nominal diameter:

- Up to one hectare 1200 l/min.
- One to two hectares 2100 l/min.
- Two to three hectares 3000 l/min.
- Over three hectares 4500 l/min.

**Note:** High risk premises may require greater flow rates.

### Education, Health and Community Facilities

- Village halls should have a minimum of 900 l/min through any single hydrant on the development or within a vehicular distance of 100m from the complex.
- Primary schools and single storey health centres should have a minimum of 1200 l/min through any single hydrant on the development or within a vehicular distance of 70m from the complex.
- Secondary schools, colleges, large health and community facilities should have a minimum of 2100 l/min through any single hydrant on the development or within a vehicular distance of 70m from the complex.

The above generic guidance should be the absolute minimum amount of water available for manual firefighting purposes, and does not take into consideration any property, business, exposure, environmental factors, or other variables, such as the values at risk or any learnings from losses and claims from the Insurance Industry.

When reviewing a risk based on its occupancy, the following should be considered:

- Light and ordinary hazard occupancies (e.g. churches and offices): 1900 l/min.
- Extra/high hazard occupancies (e.g. sawmills and plastic manufacturing): 2800 l/min to 3800 l/min.
- High bay storage/warehousing at least 4500 l/min.

If supplied by a water main, the pressure needs to be such that the main cannot collapse/be sucked dry by a fire brigade pumper section; therefore, a minimum of 1 bar (15 psi) residual pressure should be realised in the supply at these flow rates.

The base water demand should be assessed against the specific risk factors of the property. Consider increasing the calculated demand by at least 25% if any of the following conditions apply:

- Possible delays from the public Fire and Rescue Service or on-site firefighting team response.
  - ✓ Challenges can include remote location; volunteer service; limited resource; long travel time; incorrect resource or equipment for the hazards on site, etc.
- Predominantly combustible construction.
  - ✓ Timber frame.
  - ✓ Combustible-cored composite panels.
  - ✓ Some modern methods of construction.
- Large open plan buildings having none or limited fire compartmentation.
- Significant property or business values exposed.
- Properties without automatic fire sprinkler protection.
- Limited access to the seat of the fire.
  - ✓ Large buildings or long travel distances.
  - ✓ Remote locations within a building.

Review each case individually, assessing exposed assets and realistic manual fire suppression and response scenarios.

Where a building is not sprinkler protected, or there is a significant amount of combustible external yard storage and manual firefighting is the only means to suppress and extinguish a fire, the recommended demands above may again require individual review.

## Water Duration

Aviva recommends the following minimum durations of water supply, subject to adjustment based on specific risk factors:

- 2 hours for light and ordinary hazard occupancies.
- 3 hours for extra/high hazard occupancies.
- 4 hours for high bay storage/high hazard commodity warehousing occupancies.
- Consider extending durations by one to two hours for remote locations, limited Fire and Rescue Service resources, or critical business operations.

## Water Availability for Fire Fighting - Risk Based Assessment

When risk assessing water availability for firefighting, consider both public water mains supplying public (or private) hydrants and alternative water sources, and evaluate how fires would be manually suppressed in remote areas of the site, far from public highways or distant from the closest hydrants to buildings.

The risk assessment should include the following:

### Risk Factors

- Location and accessibility of hydrants in relation to all areas of the property.
- Collaboration with the water undertaker along with the fire and rescue services to identify potential fire hazards and water supply requirements are important.
- Potential for multiple appliances use in high-risk areas.
- Spacing appointments (recommended 75 metres to 90 metres apart).
- Consider the water quality available and ensure a comprehensive water management plan is in place, where required, to manage contaminated run off as per national guidance.
  - ✓ In the United Kingdom Construction Industry Research and Information Association (CIRIA) guidance document [Containment systems for the prevention of pollution \(C736F\)](#) provides helpful guidance.
- Historical data on water usage in manual firefighting scenarios.
- Significant changes to fire safety regulations that could indirectly affect water supply requirements e.g. provision for sprinklers in care homes may impact the overall water demand for suppression in these facilities.

### Water Demand for Manual Operations

- Assess the current water supply of network's capacity and limitation.
- Consider Flow rates required for different types of manual firefighting equipment.
- Duration of typical manual firefighting operations.
- Water requirements for cooling adjacent structures.

### Operational Considerations

- Distribution of hydrants around all sides of buildings and across the entire site.
- Seasonal variations affecting water availability (e.g. drought, freezing).
- Establish clear lines of communication with water undertakers and fire and rescue services for emergency situations.

### Alternative Supply Methods

- Availability of alternative water sources such as static tanks, natural water bodies, or rainwater harvesting systems.
- Access and equipment requirements for utilising alternative water sources.
- Use of portable pumps with natural water sources.
- Deployment of water carriers or tankers.
- Setting up of temporary water relay systems.

### Testing and Maintenance

- Hydrants should be clearly labelled accordingly.
  - ✓ In the United Kingdom **BS 1710: Specification for identification of pipelines and services** provides guidance on a wide range of pipe marking requirements, including those specifically related to firefighting systems. **BS 3251: Specification. Indicator plates for fire hydrants and emergency water supplies** specifies requirements for the physical indicator plates used on hydrants and emergency water supplies, detailing materials and types of plates.
- Review and test water sources to ensure adequate supply for manual firefighting across the entire site on at least a minimum annual basis as per **BS 9990: Non automatic fire-fighting systems in buildings. Code of practice**.
- Fully open and close the valve every time the hydrant is used for firefighting, flushing or testing.
- Conduct regular visual inspections between annual tests to check for obvious damage or tampering.
- Establish a reporting system for damaged or malfunctioning hydrants and reporting any unauthorised use or damage immediately to the relevant party e.g. Water Team, insurer, broker and implement a process for temporary measures when a hydrant is out of service.

From a concerned management is it right to have an Emergency Response Plan that does not consider how much water is available for manual firefighting, and the impact that it may have on a building or site.

From [Approved Document B Volume 2](#) – Requirement B5 Section 16: Fire mains and hydrants, guidance on the provision of private hydrants is as follows:

A building requires additional fire hydrants if both of the following apply:

- a. It has a compartment with an area more than 280m<sup>2</sup>.
- b. It is being erected more than 100m from an existing fire hydrant.

If additional hydrants are required, these should be provided in accordance with the following:

- a. For buildings provided with fire mains – within 90m of dry fire main inlets.
- b. For buildings not provided with fire mains – hydrants should be both of the following:
  - i. Within 90m of an entrance to the building.
  - ii. A maximum of 90m apart.

If mains and hydrants are the means of providing water for manual firefighting, then Aviva recommends:

- Appropriately sized and routed mains capable of supporting the hydraulic characteristics for recommended demands.
- Hydrants spaced between 75m and 90m (depending on the risk) so that all sides of a property are readily accessible.

## Sea Water

Whilst sea or brackish water may be available in proximity, use of such water can have a direct and detrimental impact on firefighting equipment. As such, this provision should be discussed and agreed with the local firefighting authority before factoring into the Emergency Response Plans.

Consensus should be reached on how and when sea water will be used e.g. last resort and whether this will be impacted by tide levels and local weather conditions e.g. storms etc.

## Canals, Lakes, Reservoirs, Rivers, Ponds and Open Bodies of Water

When considering open bodies of water in the area for firefighting purposes, ensure:

- Appropriate consent for use for manual firefighting has been obtained e.g. Environment Agency, Water Utility Company, Sites of Special Scientific Interest, etc.
- Agreement for inclusion from the local fire authorities and whether they have appropriate access and equipment.
- Accessibility and availability at all times of the year.
  - ✓ For personnel safety:
    - Is there a safe embankment or platform to access the water.
    - Is there appropriate lighting.
  - ✓ Does the areas become overgrown in the spring and summer.
  - ✓ Are there reduced water levels in long dry periods or droughts.
  - ✓ Do high water levels during high tide, heavy rainfall, floods etc., impact access.
  - ✓ Is the water vulnerable to freezing. Not only is the water not accessible because of ice but the available water volume is compromised by the thickness of the ice.

## Other Factors Influencing Water Availability

### Water Pressure

In the UK and other countries, issues with water main leakage rates have resulted in repeated water mains pressure reductions in recent years. This may have a direct impact on the availability of water supplies for manual firefighting needs.

In addition, sudden reductions in pressure due to hose deployment may be treated as emergency leaks by the water undertaker and the water mains pressure further reduced, as seen by Aviva on a number of occasions.

It is therefore important to ensure to delegate responsibility to nominated persons to contact the water undertakers in an emergency fire event to advise of the fire and request that pressures are not reduced.

**Note:** The Fire and Rescue Service may also request that pressures are boosted during the duration of a fire event to support firefighting.

### Summer Months/Drought

In summer months, and especially during prolonged dry periods when people are watering gardens etc., there may be challenges with water supplies and issues such as hose pipe bans etc., coming into force. As a result, the water pressure in the underground mains may be lower, and the amount of water available when there is an emergency may be compromised.

Water levels in open bodies of water may also be reduced during summer months.

## Alternative Water Sources

Where the water supply from the public mains is insufficient to meet the demands outlined in this standard, alternative arrangements must be made. These arrangements should comply with the [Approved Document B Volume 2](#) Section 16 and the [National Guidance Document on the Provision of Water for Fire Fighting](#) published by the Local Government Association and Water UK.

## Fire Hydrants

As per **Approved Document B Volume 2, Section 16:**

- Additional fire hydrants are required if a building has a compartment larger than 280m<sup>2</sup> and is more than 100m from an existing fire hydrant.
- For buildings with fire mains, hydrants should be within 90m of dry fire main inlets.
- For buildings without fire mains, hydrants should be within 90m of an entrance and a maximum of 90m apart.
- Each hydrant should be clearly indicated by a plate fixed nearby, in accordance with **BS 3251**.

## Static Water Tanks

- Install static water tanks with a minimum capacity of 45,000 litres, as specified in **Approved Document B Volume 2, Section 16**.
- Tanks should be positioned at least 10 metres away from protected buildings and easily accessible to fire service vehicles.
- Fit tanks with water level monitoring systems for real-time capacity data.
- Ensure tanks are protected from freezing temperatures and include measures for preventing stagnation.
- Consider additional capacity based on the building size, fire risk level, and expected firefighting demand.

## Natural Water Sources

Natural sources such as springs, rivers, canals, or ponds may be used if they meet the following conditions as per **Approved Document B Volume 2, Section 16**.

- Provide or store a minimum of 45,000 litres of water at all times.
- Provide access, space, and a hardstanding for a pumping appliance.

Additional considerations for natural water sources include:

### Accessibility

- Maintain clear access routes for fire appliances.
- Install permanent connections (e.g., dry risers or suction points) near the water source.

### Filtration and Treatment

- Implement suitable filtration systems to remove debris, sediment, and contaminants.
- Use coarse filters for large debris and fine filters for smaller particulates.
- Consider chemical treatment systems for biological contaminants.
- Establish regular maintenance protocols for all filtration equipment.

### Environmental Considerations

- Conduct ecological impact assessments before designating natural sources for firefighting.
- Use screened intake hoses to protect aquatic life during water extraction.
- Implement measures to prevent over-extraction, particularly in sensitive habitats.
- Consult with relevant environmental agencies (e.g., Environment Agency in England, SEPA in Scotland) to ensure compliance with local regulations.



### Water Quality

- Conduct periodic testing of water quality to identify potential hazards.
- Maintain records of water quality assessments and any remedial actions taken.

### Infrastructure and Equipment

#### Pumping Systems:

- Install fixed or provide portable pump systems capable of extracting water efficiently from alternative sources.
- Ensure pumps are regularly tested and maintained.

#### Pipework and Connections:

- All pipework and connections for alternative water supplies must comply with BS 1710 for clear identification.
- Install appropriate valves and couplings compatible with local fire service equipment.

### Documentation and Testing

- Maintain detailed plans showing the location and specifications of all alternative water sources.
- Conduct and document regular tests of alternative water supplies, including:
  - ✓ Flow rate tests.
  - ✓ Water quality assessments.
  - ✓ Accessibility checks.

**Important:** Approved Document B is primarily for life safety requirements and not property or business exposures. The 45,000 litre capacity is a generic volume, and this is not specified based on the risk itself - construction type, size of building, occupancy hazards, fire load, values, exposures, etc. Aviva recommends the previous demands and durations based on the risk type, to create the required manual firefighting water stored volumes, e.g. an ordinary hazard occupancy with no further risk modifications should have at least 1900 l/min for 2-hours or 228,000 litres of water available.

## Fire Water Run-off

Any fire will produce contaminated fire water runoff, which poses a potential risk of environmental pollution. A strategy to manage this risk should be included in your Emergency Response Plan. While this document does not specifically make any recommendations around this, please be aware that the direct impact of a fire and applying water means there will be fire water run-off.

Refer to Aviva Loss Prevention Standard **Preventing Pollution from Fire Fighting Run-off** for further guidance.

The size and nature of the fire (and its products) and the length of time to extinguish it, will have a direct impact on this 'hazardous' by-product. Consider:

- How is this managed and contained – pathways of how fire water run-off may enter the environment, e.g. surface water drains, use of specialised containment equipment.
- How is this treated or disposed of.
- What is exposed.
- How can this impact the amount of water the manual firefighting efforts may use in the life cycle of the fire incident.
- How will any public bodies such as the Environment Agency act in an actual emergency.

## Complimentary Fire Suppression Technologies

While this document focuses on manual water-based firefighting, it is important to recognise that emerging technologies and alternative fire suppression methods can complement traditional approaches. These systems may reduce overall water demand, provide more effective protection in certain scenarios, or offer solutions for areas where water-based systems are not ideal.

Consider the following options as potential supplements to manual firefighting water supplies:

- Foam systems for flammable liquid hazards.
- Agent systems for sensitive electronic equipment.
- Water mist systems for specific applications.
- Hypoxic air 'oxygen reduction' systems for storage areas.

**Note:** When implementing these technologies, it is crucial to consult with your Insurer, Broker, competent Fire Protection engineers and relevant local authorities to ensure integration with existing manual firefighting strategies. Training on the use and limitations, maintenance and testing of these systems etc., should also be provided.

## Fire and Rescue Service

It is good practice to engage with the local Fires and Rescue Service to understand how they will respond in an emergency; what resources would respond; where they would obtain firefighting water; whether they consider this to be appropriate based on the property and business risk on site and how they would protect the buildings.

Local Fire and Rescue Services are often amenable to inspecting premises to evaluate fire risk exposures and offer guidance.

To help with understanding what resources there are available in a local area (UK only) the RISCAuthority has an online Fire and Rescue Service Response database, [click here](#) for further details.

## Managing Change

As part of any change to a local area or site, consideration should be given to the impact on the water supplies, its distribution, and its availability.

Issues to consider include:

- Local water course re-routing.
- Land draining.
- Local housing or industrial developments and the impact on the water supply.
- An extension on site changing the topography and layout.
- A change on site that impacts the occupancy hazards or the nature of the construction.

## Checklist

A generic **Manual Firefighting Water Supplies** Checklist is presented in Appendix 1 which can be tailored to your own organisation.

## Key Action Steps

- Understand your firefighting water requirements in terms of volume and duration is critical. The guidance in [National Guidance document on the provision of water for firefighting](#) can assist with this, however also take into account specific issues relating to your business and/or premises such as criticality; values at risk; seasonal issues; ignition and propagation hazards; exposures from adjacent premises etc.
- Where necessary, discuss and confirm water supply expectations with local water organisers and/or any local authorities having jurisdiction.
- Where this guidance relates to prospective new build premises, engaging during the concept stages with the design team can help ensure the adequacy of firefighting water supplies are considered, and alignment with any proposed private hydrant systems and/or automatic fire suppression systems.
- Local Fire and Rescue Services are often amenable to inspecting premises to evaluate fire risk exposures and offer guidance. They can also confirm their pre-determined attendance planning; approved water supply sources (and any necessary upgrades to help with access and deployment), other issues or anticipated delays etc. It may be possible to use this information to plan for improvements to the water holding at the premises for immediate firefighting purposes.
- Where manual firefighting water supplies are likely to be inadequate, consideration should be given to the installation of tank or reservoir fed automatic fire sprinkler systems.
- Discuss any changes to manual firefighting supplies, and fire protection systems with your Property Insurer and Broker.

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For more information please visit: [Aviva Risk Management Solutions – Specialist Partners](#)

## Sources and Useful Links

- [Fire Protection Association](#)
- [Approved Document B – Volume 2](#)
- [National Guidance document on the provision of water for fire fighting](#)
- [Pollution prevention for businesses](#)
- [The Water Industry Act 1991](#)
- [Fire and Rescue Services Act 2004](#)
- [Fire and Rescue Services \(Northern Ireland\) Order 2006.](#)
- [Building standards technical handbook 2025: domestic](#)
- [Building standards technical handbook 2025: non-domestic](#)
- [Fire \(Scotland\) Act 2005](#)
- [Water \(Scotland\) Act 1980, Schedule IV, Paragraph 30, 31, 32 and 33.](#)
- [The Building \(Amendments\) Regulations \(Northern Ireland\) 2024.](#)
- [BS 1710:2014 Specification for identification of pipelines and services](#)
- [BS 3251: Specification. Indicator plates for fire hydrants and emergency water supplies](#)
- [BS 9990: Non automatic fire-fighting systems in buildings. Code of practice](#)

**Note:** Whilst UK standards and legislation are referenced in this document, other international standards and legislation should be referenced where applicable.

## Additional Information

Relevant Loss Prevention Standards include:

- **Contamination Following a Fire**
- **Emergency Response Teams**
- **Managing Change – Property**
- **Preventing Pollution from Fire Fighting Run-off**

To find out more, please visit [Aviva Risk Management Solutions](#) or speak to one of our advisors.

**Email us at [riskadvice@aviva.com](mailto:riskadvice@aviva.com) or call 0345 366 6666.\***

\*The cost of calls to 03 prefixed numbers are charged at national call rates (charges may vary dependent on your network provider) and are usually included in inclusive minute plans from landlines and mobiles. For our joint protection telephone calls may be recorded and/or monitored.

# Appendix 1 - Manual Firefighting Water Supplies Checklist



Location	
Date	
Completed by (name and signature)	

	Firefighting Water Supplies Checklist	Y/N	Comments
1.	<p>Based on the occupancy of the site is the hazard classification established?</p> <ul style="list-style-type: none"> <li>✓ Light or ordinary hazard?</li> <li>✓ Extra/high hazard?</li> <li>✓ Storage/warehousing hazard?</li> </ul> <p>Has the hazard classification been reviewed within the last year or after any significant changes in site operations?"</p>		
2.	<ul style="list-style-type: none"> <li>• Is the construction of the buildings known?</li> <li>• Is this predominantly non-combustible?</li> </ul>		
3.	<ul style="list-style-type: none"> <li>• Is there an expectation of any possible delays from the public brigade or on site manual firefighting team response?</li> <li>• Does the site have predominantly combustible construction, such as:                             <ul style="list-style-type: none"> <li>✓ Timber frame?</li> <li>✓ Combustible-core insulated metal sandwich panels?</li> <li>✓ Combustible modern methods of construction?</li> </ul> </li> <li>• Large open plan building with no or little compartmentation?</li> <li>• Large property values or business impact?</li> <li>• Is the property sprinkler protected?</li> <li>• Could there be limited or restricted access to the seat of a fire?                             <ul style="list-style-type: none"> <li>✓ Large buildings or travel distances?</li> <li>✓ Remote locations?</li> </ul> </li> </ul> <p>If yes to any of the above, then the water available for manual fire fighting requirements may need to be adjusted.</p>		

	Firefighting Water Supplies Checklist Contd.	Y/N	Comments
4.	Do you know where the fire hydrants are in relation to the buildings or site? ✓ Are these public only? ✓ Are there any private fire hydrants?		
5.	<ul style="list-style-type: none"> <li>Do the fire hydrants cover all sides/areas of the buildings and site?</li> <li>Are the fire hydrants spaced every 75m to 90m apart?</li> </ul>		
6.	<ul style="list-style-type: none"> <li>Has the water supply to the hydrants protecting the site been tested?</li> <li>Are all hydrants tested under operational conditions (e.g., simulating firefighting scenarios) rather than static flow tests?</li> </ul>		
7.	Does this water supply meet the following demand criteria (select as appropriate for the risk): ✓ Light and ordinary hazard occupancies 1900 l/min? ✓ Extra/high hazard occupancies 2800 l/min to 3800 l/min? ✓ High bay storage/warehousing at least 4500 l/min?		
8.	Does this water supply meet the following duration criteria: ✓ 2 hours for light and ordinary hazard occupancies? ✓ 3 hours for extra/high hazard occupancies? ✓ 4 hours for high bay storage/high hazard commodity warehousing occupancies?		
9.	Is the water supply test data formally recorded and trended?		
10.	<ul style="list-style-type: none"> <li>Are repeat tests planned in the future?</li> <li>What is the planned return frequency?</li> </ul>		
11.	Are there any other water courses or open bodies of water available in the area that can be used for manual firefighting means, e.g. reservoirs, ponds, lakes, canals, rivers and the sea?  Is this: ✓ Availability formally quantified and recorded? ✓ Available all times of the day or is it tidal? ✓ Available all year round or do seasonal changes impact water availability, e.g. winter freezing, summer reduction levels, etc.?  Is there contingency equipment (e.g., portable pumps) available to access natural water sources during emergencies?"		

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	Firefighting Water Supplies Checklist Contd.	Y/N	Comments
12.	<p>Are there any stored water volumes in tanks available for manual firefighting, either above or below ground?</p> <p>Is this:</p> <ul style="list-style-type: none"> <li>✓ Availability formally quantified and recorded?</li> <li>✓ Available all times of the day or do levels fluctuate?</li> <li>✓ Available all year round or do seasonal changes impact water availability, e.g. winter freezing, summer reduction levels, etc.?</li> </ul>		
13.	<ul style="list-style-type: none"> <li>• Are the manual fire water and firefighting plans discussed regularly with the public fire authorities?</li> <li>• Is the public fire brigade invited to attend the site at least annually? Do they run regular joint exercises with your organisation?</li> <li>• Have the fire brigade confirmed hydrant compatibility with the fire service equipment?</li> <li>• Do you have a documentation with agreed response protocols?</li> </ul>		
14.	<p>Does the site have a formal Emergency Response Plan? Have all site personnel received training on manual firefighting procedures, including accessing alternative water supplies? Does the science emergency response plan specifically address manual firefighting water supplies, including:</p> <ul style="list-style-type: none"> <li>✓ Liaison procedures with local fire and water authorities.</li> <li>✓ Regular testing and maintenance of water supplies.</li> <li>✓ Contingency plans for water supply failures.</li> </ul>		
15.	<p>Have there been any changes or are there any proposed changes that can impact the assessments made of the risk and the amount of fire water needed for manual firefighting purposes, e.g. change of occupancy/new hazards; increased fire load; new or temporary construction with combustible elements?</p>		
16.	<p>Has the assessment of manual firefighting water supplies been conducted by a competent person with knowledge of current fire safety standards and regulations?</p>		
17.	<ul style="list-style-type: none"> <li>• Are real-time monitoring systems installed to track water supply conditions? If so, are alerts configured for low pressure or volume levels?</li> <li>• Are IoT-based monitoring systems installed to provide real-time data on water supply conditions?</li> </ul>		

18.	<ul style="list-style-type: none"> <li>• Are there measures in place to manage firewater run-off to prevent environmental pollution?</li> <li>• Are there spill containment measures in place to manage contaminated firewater run-off effectively?</li> </ul>		
19.	Additional comments:		

**Please Note**

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