



BS EN 14972-17 DEMYSTIFIED

EVERYTHING YOU NEED TO KNOW

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BS EN 14972-17 DEMYSTIFIED

BS EN 14972-17 is the new European fire test protocol for automatic water mist systems protecting residential occupancies. It works alongside BS EN 14972-1, which sets out the requirements for the design, installation, inspection and maintenance of water mist systems. Together, these standards supersede BS 8458:2015, which has now been withdrawn.

This guide gives specifiers, installers and approvers a good overview of what the standard means to start working confidently within it. It's not intended to replace the standard document itself, which can be downloaded [here](#).



■ What is BS EN 14972-17?

BS EN 14972-17:2025 is the new British and European standard covering the fire testing of residential water mist systems. Officially titled Fixed firefighting systems – Water mist systems – Part 17: Test protocol for residential occupancies for automatic nozzle systems, it forms part of the wider BS EN 14972 series. Together with BS EN 14972-1, it supersedes the former UK Code of Practice, BS 8458:2015. The introduction of the standard brings UK testing requirements closer in line with wider European fire safety practices.

The standard applies to automatic water mist nozzle systems installed in residential settings, including family dwellings, apartment buildings, blocks of flats, bed and breakfast accommodation, care homes, small hotels or hostels and residential areas within hotels.

It outlines the testing protocols required for manufacturers seeking certification of residential water mist systems, specifying:

- Fire test arrangements and room configurations
- Nozzle positioning and spacing
- Water flow and pressure conditions
- Fuel package requirements
- Pass and fail criteria
- Automatic nozzle activation requirement
- Ventilation conditions during testing
- System performance measurements after discharge

The testing procedures are designed to simulate realistic residential fire scenarios rather than ideal laboratory conditions.





■ Why the standard matters

The introduction of BS EN 14972-17 reflects the growing role of water mist systems within modern fire protection strategies, particularly in residential buildings where reduced water usage, smaller pipework and lower installation impact can offer advantages over traditional sprinklers. For manufacturers, the standard provides a harmonised route to European fire testing and product certification. For installers, specifiers, fire engineers and regulators, it provides a more consistent basis for assessing the suitability and performance of residential water mist systems.

■ Why the move to BS EN 14972-17?

The purpose of BS EN 14972-17 is to establish a harmonised, performance-based fire test protocol for automatic water mist systems protecting residential occupancies across Europe. Rather than prescribing how a system should be designed, the standard specifies a series of fire tests designed to represent real-world residential fire scenarios and demonstrate that a water mist system can successfully control or suppress fires within its intended application.

The move to harmonised European testing is intended to improve consistency in fire testing and product certification across European markets, providing a common basis for assessing system performance.

System design, installation, inspection and maintenance requirements are addressed separately in BS EN 14972-1, ensuring that approved systems are implemented in accordance with the conditions under which they were successfully fire tested.

■ What this means for you

For manufacturers, specifiers and installers, BS EN 14972-17 represents a significant shift towards greater consistency in certification and approval processes across Europe. While systems previously approved to BS 8458 remain acceptable, new developments and future certifications are increasingly expected to demonstrate compliance with BS EN 14972-17.



Architects

BS EN 14972-17 gives architects greater confidence when specifying residential water mist systems by providing a consistent framework for demonstrating performance. Instead of relying on manufacturer-specific claims or varying test methods, architects can specify systems that have been independently tested for their intended residential application. To ensure compliance, the proposed system should be:

For architects, this means checking:

- Suitable for the project's fire strategy and building layout
- Successfully tested to the intended residential occupancy in accordance with BS EN 14972-17
- Designed and installed within the manufacturer's approved parameters
- Supported by appropriate fire test evidence and third-party certification, where applicable

Early collaboration with the fire engineer, system designer and specialist supplier helps ensure the chosen system integrates effectively into the overall building design.



Installers

For installers, the BS EN 14972 series reinforces the importance of installing systems in accordance with the manufacturer's approved design parameters and maintaining clear evidence of compliance. Systems should be installed in accordance with the approved design, the project's fire strategy and any applicable certification or approval requirements.

Key considerations for installers include:

- Installing the system within the manufacturer's approved design parameters
- Accurate nozzle positioning and pipework installation
- Installation documentation and records
- Commissioning and handover
- Coordination with designers, fire engineers and approving authorities
- Ongoing inspection and maintenance requirements



Approvers

Historically, some Building Control bodies and fire professionals approached water mist systems cautiously because different testing protocols and approval routes were used by different manufacturers and for different applications. The BS EN 14972 series provides a more consistent basis for assessing whether a proposed water mist system has been appropriately tested and designed for the intended occupancy and application.

Building Control officers and other approving authorities are likely to expect supporting information such as:

- Third-party certification
- Evidence of successful fire testing
- Hydraulic calculations
- Manufacturer's approved design documentation
- As-installed drawings
- Commissioning certificates
- Inspection and maintenance information



What the new standard covers

- Fire test scenarios
- Nozzle requirements
- Building scope

■ Fire test scenarios

BS EN 14972-17 specifies a series of fire test methods designed to assess the performance of automatic water mist systems under a range of representative residential fire scenarios.

These include:

- Corner fire tests
- Beneath-nozzle fire tests
- Between-nozzle fire tests
- Open-room fire tests
- Ventilation test scenarios

Each test is designed to challenge the system under different fire locations and room conditions, helping demonstrate that performance is consistent across a range of realistic residential scenarios. The tests assess whether the water mist system can control or suppress a fire, limit fire development and satisfy the performance criteria defined by the standard.

■ Nozzle requirements

The standard applies to automatic nozzle systems and includes provisions for both ceiling-mounted and sidewall nozzles. Testing must demonstrate that the proposed nozzle arrangement provides the required fire suppression performance within the specified room configurations and tested design parameters.

BS EN 14972-17 includes dedicated provisions for assessing both ceiling-mounted and sidewall automatic nozzle systems, reflecting the wider range of residential water mist system configurations now available.





■ Building scope

BS EN 14972-17 specifies the fire-testing requirements for automatic water mist systems protecting domestic and residential occupancies with ceiling heights up to 5.5 m. Examples given in the standard include:



Family dwellings/houses



Care homes



Small hotels and hostels



Apartment buildings and
blocks of flats



Bed and breakfast
accommodation



Residential areas in hotel
bedrooms/guest corridors

The standard does not apply to industrial, commercial or large-scale special hazard environments, which are covered by other parts of the BS EN 14972 series.

■ Is BS 8458:2015 still valid?

BS 8458:2015 has been withdrawn following the publication of the BS EN 14972-17. Existing systems designed, tested and installed in accordance with BS 8458 do not automatically become non-compliant solely because the standard has been withdrawn.

Although BS 8458:2015 has been withdrawn, some projects may continue to reference it where this is accepted by the relevant approving authorities and reflected in the agreed fire strategy.

For new projects, the BS EN 14972 series is increasingly being specified as the basis for system testing, design, installation and approval.



■ How new and old standards compare

	BS 8458:2015	BS EN 14972-1	BS EN 14972-17:2025
Status	Withdrawn (though still valid unless BS EN 14972-17 specified)	Current standard	Current standard
Scope	Fire test protocol	Design, Installation, Maintenance	Fire test protocol
Approach	Prescriptive	Performance-based with prescriptive installation requirements	Performance-based
Main focus	How to design and install systems	How approved water mist systems are designed, installed, inspected and maintained	How systems prove fire performance
Geographic basis	UK national standard	European standard (UK implementation)	European standard
Ceiling height	Up to 5.5m	In accordance with the system's tested limits and DIOM manual	Up to 5.5m
Covers	Design, installation, commissioning, maintenance and testing	Design, installation, inspection, maintenance and system documentation	Fire testing requirements for automatic nozzle systems
Compliance route	Follow prescribed rules	Design and install within the manufacturer's DIOM manual and successful fire test parameters	Demonstrate successful fire test performance
Supersession	Replaced DD 8458-1	Forms part of the BS EN 14972 series that supersedes BS 8458	Supersedes BS 8458
Typical use	Guidance for installers and designers	Design, installation and lifecycle management of approved systems	Certification and approval evidence



iCO AND BS EN 14972-17

iCO developed the first UK residential water mist system to successfully complete BS EN 14972-17 fire testing.

BS EN 14972-17 was published in July 2025, introducing the new European fire test protocol for residential water mist systems. Just four months later, in November 2025, iCO became the first UK company to successfully complete BS EN 14972-17 fire testing for a residential water mist system. Testing was carried out at Baltic Fire Laboratory, an EN ISO/IEC 17025-accredited fire testing laboratory.

The tested system incorporates iCO's innovative low-pressure concealed nozzle and demonstrates its performance against the new European residential fire test protocol. This provides architects, fire engineers, installers and approving authorities with independently verified evidence that the system has successfully met the performance requirements of BS EN 14972-17.

Operating at a genuine low pressure of 6 bar with a water flow rate of approximately 29 L/min, the iCO low-pressure concealed nozzle delivers effective fire suppression while using significantly less water than conventional residential sprinkler systems. The concealed nozzle activates in a similar way to a traditional sprinkler head, helping to control and suppress fire while minimising water usage.



■ **Futureproof your compliance**

Scan or click the QR code to view iCO's product range and ensure you're complying with BS EN 14972-17.



WANT TO KNOW MORE?

Contact our experts.

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