Certificate No: LABSSRD47

This registration is valid for Building Standards regulations and associated technical guidance in force at the time of the registration and for the regulations indicated.

iMIST STX12 Water Mist System using STN12 Water Mist Nozzles

Description of Product

This is an assessment of the iMist STX12 Water Mist System. The system is designed to control and suppress a fire by automatically discharging very small water droplets into the air.

System operation occurs when a heat sensitive liquid filled glass bulb ruptures at a predetermined temperature discharging water mist at high pressure into the air.

This fine mist remains in the air which has a cooling effect reducing the temperature in the room and causing surface wetting which helps to limit fire spread.

This watermist fire suppression system is suitable for domestic applications within the context of the scope, conditions, and regulations sections of this registration.

Key factors assessed

- Safety in case of Fire
- Safety in Use
- Durability serviceability and identification

Validity

This certificate was first issued on 8 September 2021 and is valid until 7 September 2022
Issue Dated 8 September 2021

Scope of Registration

This registration relates to the iMist STX12 Water Mist System which includes the STN12 nozzle type.

Each installation is subject to an individual design carried out by iMist in accordance with their DIOM Design, Installation, Operation and Maintenance Manual and in accordance with BS 8458: 2015 Fixed Fire Protection Systems - Residential and Domestic Water mist Systems - Code of Practice for Design and Installation.

The design must take account of the individual circumstances of the installation including issues such as room obstructions which will impact on the effectiveness of the water mist spray, nozzle locations and any individual circumstance which might prejudice the system installation.

Any installation considered to fall within the 'special circumstances' criteria noted in the Conditions of Certificate Section is not covered under this registration.

Suppression system components

All iMist STX12™ systems will contain a minimum number of base components to allow the system to function correctly. Where applicable and dependent on system type, these components shall include, but may not be limited to, the following:

- The standard iMist STN12™ nozzle shall be used for all installations.
- A fast/quick response heat sensitive glass bulb. For normal applications nozzles with 135ºF (57ºC) bulbs shall be used (normal applications are those not considered to be 'special circumstances' such that enhanced performance is required)
- iMist STX12-2™ domestic pump unit
- iMist STN12™ nozzle/escutcheon
- Domestic 31.7 g (120 L) effective capacity tank c/w level alarm
- iMist STX12™ pump unit c/w control panel
- Flow switch
- iMist strainer
- Lever type ball valves
- Distribution pipework - Standard flexible stainless steel braided hose or rigid stainless steel and fittings M16 x 1.5mm pitch.

Maintained water supply – this registration does not cover the provision of a suitable water supply, or infer compliance with Scottish Water byelaws, this being a site-specific consideration. The registration does cover the system based on either mains supply or tank supply. It should be noted that the iMist pumps are piston type pumps and to operate correctly only require a 'positive' head of water or a 'flooded' inlet condition. As the pump is fed from the town main there will always be a flooded inlet and even during fluctuations in pressure, provided there is sufficient pressure to maintain a 'positive' head the pump will be able to operate as designed. Should there be any doubt about mains supply, a tank solution should be used.

Note. The standard flexible stainless steel braided hose must only be installed behind a 30-minute fire barrier, such as fire rated plasterboard. If the flexible hose is to be run through non-mist protected areas, it MUST be protected from fire by a 30-minute fire barrier.

In addition to an adequate water supply, several other items are not considered part of the iMIST system and are therefore not covered by this registration, this includes ancillary work such as power supply, trace heating and lagging, and fire stopping, where required. Refer to the iMIST DIOM manual for further information.

The capability of the system has been independently tested by Exova Warrington Fire in accordance with BS 8458 Annex C and the superseded DD 8458-1 2010 Annex A.

Limitations are detailed in the Conditions of Certificate section of this registration.

This registration does not cover the use of the system as part of an alternative to guidance or fire engineered solution.

Conditions of Certificate

An iMist system that is correctly designed, installed, tested, and serviced in accordance with the DIOM manual is considered to be compliant with the requirements of BS 8458: 2015 Fixed Fire Protection Systems - Residential and Domestic Water mist Systems - Code of Practice for Design and Installation.

All hoses must be protected by a 30-minute fire resistant barrier such as fire rated plasterboard. In instances where pipework cannot be run behind a suitable 30-minute fire barrier, stainless steel solid pipe shall be used.

All domestic systems shall be designed to utilise an iMist STX 12-2 pump to support a maximum of 2 nozzles in simultaneous operation for a maximum discharge duration of 10 minutes.

Limitations of use

Design limits are detailed in BS 8458: 2015. These include the limits of application based on fire tests identified in Table 3 of BS 8458: 2015 'Fixed Fire Protection Systems - Residential and Domestic Water mist Systems - Code of Practice for Design and Installation'.

Fire testing carried out by Exova Warrington identified the following fire test limits for the STN 12 Nozzle; **fire test room size 32m2 and ceiling height limit 3.5m.**

A comprehensive fire engineering assessment would be needed to justify installations where these limits are exceeded and are therefore considered beyond the scope of this registration.

Limitations of use of this registration – special circumstances

LABSS consider that this iMist registration includes details of 'special circumstances' as outlined in section 4.6 of BS8458 2015 (see Note 1) which are not covered by this registration and consequently this certificate.

In these circumstances discussion must be undertaken with the verifier to determine what enhanced measures may be necessary (see Note 2) to ensure compliance with the Mandatory Standards. In this respect the applicant may need to seek specialist advice.

Special circumstances (as outlined in section 4.6 of BS 8458:2015)

NOTE 1: Situations where this might be necessary include:

- dwellings with a fire load greater than that which would normally be found in a residential or domestic living room, kitchen or bedroom, or if the fire hazard is greater than that of a conventional residential or domestic occupancy.
- buildings where the time for fire-fighters to commence firefighting in the fire compartment might exceed the duration of water supply of the expected category of system, e.g., buildings over 45 m in height or complex buildings.
- older buildings with hidden voids and/or where compartmentation might not meet current standards.
- buildings with atria or where a risk assessment shows that the spread of fire could involve two or more enclosed volumetric spaces.
- buildings with adjacent areas not protected by an automatic fire suppression system.
- buildings housing vulnerable people (refer to BS 8458:2015 Annex B.2)
- buildings with fire engineered design solutions.
- premises providing secure accommodation, asylum centers or similar premises (specialist nozzles are available for institutional situations where ligature or malicious tampering are a concern).

The above list is not exhaustive, and the verifier may consider other similar scenarios as being out with the design limits within BS 84582015 such that the applicant may need to seek specialist advice, for example communal bin stores, and other communal areas.

Use of enhanced performance, reliability, and resilience arrangements

In some circumstances, enhanced performance, reliability, and resilience arrangements should be provided, if an assessment shows them to be necessary.

NOTE 2: Examples of such arrangements include:

- extended duration of water supply.
- making water supplies more robust, such as by the provision of redundancy in the pumping arrangements, back-up electrical supplies, or a fire service infill connection to a stored water tank;
- increasing the design discharge density or design assumed maximum area of operation (AMAO).

BS 8458: 2015 'Fixed fire protection systems - Residential and domestic water mist systems - Code of practice for design and installation' gives guidance on enhanced performance measures including but not limited to the following: Increased duration / resilience of water supplies, arrangements to maintain system integrity during maintenance and repair, backup power, additional pumps to provide redundancy, remote monitoring of critical systems, automatic test facilities and the installation of a fire and rescue service inlet.

A bespoke fire and rescue service inlet arrangement can be provided on a project specific basis if required to supplement the water supply to the pump.

General conditions

When used as a direct replacement for a sprinkler system, the extent of watermist coverage should include all parts of the dwelling with the possible exception of areas without a fire risk such as bathrooms (fitted with a door) with a floor area of less than 5m2 and a cupboard with a floor area less than 2m2.

The system may be fed direct from the mains or from a mains water supply subject to water authority approval. The design will include recommendations for water pressure, flow and duration.

Installation must be carried out by suitably trained and competent individuals or by one of the manufacturer's approved licensees, as listed on the iMist official website.

The installed system must be subject to servicing (see also clause 8 of BS 8458: 2015) as advised by iMist. Annual maintenance must be carried out by an approved iMist contractor. iMIST must advise the customer in this regard.

Standard conditions

The specifications and materials referred to have been assessed in accordance with the Building (Scotland) Regulations 2004 and in accordance with the supporting guidance in the Domestic Technical Handbook 2020 (April 2021 Addendum)

Where reference is made on a plan or specification document to any Code of Practice, British or European Standard or manufacturer's instruction it shall be construed as a reference to such publication in the form in which it is in force at the date of this registered detail.

The materials specified shall not be changed without first gaining approval so to do. Failure to do so will invalidate the registered detail.

This Registered Detail should not be regarded as a formal approval under the building warrant process prescribed by the Building (Scotland) Act 2003 enacted from 1 May 2005. It supports the site specific building warrant submission required in every case.

This Registered Detail shall contribute to compliance with relevant Mandatory Standards specified under the Building (Scotland) Regulations 2004 as amended when read with the Scope of Registration and the Conditions of Certificate Sections to this Registered Detail.

Regulations

LABSS consider that the, iMist STX12 Water Mist System, will meet the functional requirements of the Building Regulations (listed below) if the criteria detailed in this certificate are met;

The Building (Scotland) Regulations 2004 (as amended)
Technical Handbook - Domestic

Note: Where the system is installed, commissioned, and maintained in accordance with the manufacturer's recommendations.

Regulation 8 Durability, workmanship and fitness of materials
0.8.5: Ways of establishing the fitness of materials

Regulation 9 Building Standards applicable to construction
Note: Construction shall be carried out so that the work complies with the applicable requirements of schedule 5.

Mandatory Standard 2.15 Automatic fire suppression systems – Domestic Technical Handbook.

Note: The system can contribute to meeting the requirements of Mandatory Standard 2.15 as related to domestic buildings only.

The system is considered to meet the requirements of the following guidance clauses:

Domestic Technical Handbook:
2.15.1 Automatic fire suppression systems
2.15.2 Sheltered housing complexes
2.15.3 Buildings Containing Flats and Maisonettes
2.15.4 Social Housing Dwellings

Use of this registration negates the need to consult with the Scottish Fire and Rescue Service (SFRS) under Section 11 of The Building (Procedure) (Scotland) Regulations 2004 (as amended). A verifier may still wish to consult with SFRS under Section 10 of this legislation.

Supporting Information

- Fire Test by Exova Warrington fire to BS 8458;2015 Annex 'C' 'Method of measuring the capability of a Water mist System to control a Fire - Room fire test for Water mist Systems with Automatic Nozzles' - Document reference 367730 - Dated 18th August 2016
- iMist Design, Installation, operation, and maintenance manual STX12 Water mist System
- iMist Brochure Residential & Domestic Water mist fire protection System
- iMist Pocket pre installation Guide
- Corporate member of International Water mist Association
- Full membership of the Fire Protection Association (FPA)
- Bsi Quality Management System ISO 9001:2015 Certificate Number: FS 708947, i-Mist Ltd Swanley (expires 8th of August 2022)
- LPCB Quality Management System ISO 9001: 2015 - Certificate Number 1663 Issue 1, i-Mist Manufacturing Ltd, Hull (expires 9th June 2024)
- WRAS, Water Supply for model STS 12 430 Y-patterned strainer

Supporting Information (Cont.)

To demonstrate the proposed watermist system satisfies the mandatory requirements of the standards the following information requires to be submitted to the Verifier.

1. Evidence that Scottish Water have been consulted (if necessary). If the water supply is direct from the main, then Scottish Water approval will be required.

2. Declarations of conformity from the designer and manufacturer.

3. The plans and written specification including the test reports that require to be submitted should only be obtained from an authorized dealer supplying the system being installed and this information must include;
   - The extent of the protection within the premises, whole or part.
   - System Category. Note: Communal rooms in a domestic building may result in a residential system having to be installed.
   - The layout of each floor and the location of any walls, floors, or doors.
   - The type, position, spacing and temperature rating of each nozzle in the room or space.
   - Confirmation is required that the watermist nozzles are designed to be quick response to BS EN 12259 Part 1.
   - A cross-section or indication of the floor to ceiling heights or room/space.
   - All necessary information including component data sheets

   Note - An audible alarm must be sounded upon system activation. To meet this requirement all iMist pumps have an integral alarm sounder that operates upon water flow.

Items that should be provided in conjunction with the LABSS registration certificate to support reasonable inquiry:

1. Manufacturer's Installation and commissioning guide from the authorised supplier.

2. Evidence of adequate system commissioning by way of compliance certificate by the authorised supplier which attests that the water mist system has been designed, installed and commissioned in accordance with BS 8458: 2015 and the iMist DIOM.

3. Evidence of adequate electrical certification / commissioning

4. Water supplier declaration / approval where applicable.

5. Test / commissioning certification and User manual to evidence that the system has been installed to BS 8458 requirements

Contact Information

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