



Certificate of Conformity

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Product designation

Tyco Fire Products, AquaMist®, Model AM24, 15NS x 9.2K(metric), 57°/68°/79°/93°C (3 mm bulb), pendent, QR water-mist nozzles

(Refer to the Schedule/enclosures for further specified details)

Agent/distributor

Tyco Fire Protection Products
Level 3, 95 Coventry Street, SOUTHBANK, VIC, AUSTRALIA, 3006

Registrant

Tyco Fire Protection Products
Level 3, 95 Coventry Street, SOUTHBANK, VIC, AUSTRALIA, 3006

Producer

Tyco Fire Products Manufacturing Ltd
Stockport Trading Estate, Yew Street, UNITED KINGDOM, SK4 2JW

Conformance criteria and evaluation

The Tyco Fire Products, AquaMist®, Model AM24, 15NS x 9.2K(metric), 57°/68°/79°/93°C (3 mm bulb), pendent, QR water-mist nozzles have been evaluated and verified as conforming with the relevant requirements of the following criteria.

1. Underwriters Laboratories Standard UL 2167, 'Water Mist Nozzles for Fire Protection Service'.

Limitations/conditions of conformance

Limitations/conditions of conformance, where identified on this certificate, are derived from qualifications from evaluation(s) for conformity and/or other related technical documentation. All details with respect to design, assembly and installation instructions and restrictions should be checked against the producer's current technical manual/data sheets and the requirements of the Authority having Jurisdiction.

Specified limitations/conditions, determined from the evaluation for conformity, include the following.

- i. For compliance with this listing, the Tyco Fire Products, AquaMist®, Model AM24, 15NS x 9.2K(metric), 57°/68°/79°/93°C (3 mm bulb), pendent, QR water-mist nozzles shall be used only in engineered hydraulically calculated systems designed and installed in accordance with the National Fire Protection Association Standard for Installation of Water Mist Fire Suppression Systems, NFPA 750 or, when published, its equivalent Australian Standard for design, installation, and commissioning of water mist systems.

(Limitations/conditions of conformance continue)

This certification is issued within the scope of CSIRO Verification Services – Rules governing ActivFire Scheme and is valid only for the product(s) as submitted for evaluation and verification of conformity, subject to the following conditions.

- Reference to details, limitations and requirements, where documented as a schedule/enclosure with this certificate.
- The Registrant is responsible for their attestation of conformity and ensuring that on-going production complies with the conformance criteria defined in this certificate.
- This certificate will not be valid if any changes or modifications are made to the product which have not been notified and validated by CSIRO Verification Services.
- This certificate is subject to periodical re-validation upon verification that all requirements, as determined by the conformity assessment body, continue to be satisfactorily met by the Registrant.
- This certificate may only be reproduced in its published form, without modification and inclusive of all schedules/enclosures.
- Any changes, errors or omissions, must be submitted in writing and if necessary or requested, substantiated with relevant evidence.
- Any representations, such as advertising or other marketing related activities or articles shall reflect the correct contents of this certificate and conform with all relevant trade practices and consumer protection legislation and regulations.
- Any terms or conditions of use as applicable to content and documentation as published or accessed through web sites administered by the CSIRO Verification Services.

Issued by

David Whittaker
Executive Officer – ActivFire Scheme



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- ii. Valid only where the ceiling height does not exceed 3.05 m for Ordinary Hazard Group 1 risks or 2.40 m for Ordinary Hazard Group 2 risks. For single-interlock preaction systems, and wet-pipe systems using 57°C and 93°C nozzles, the system total protected area shall not exceed 149 m². For wet-pipe systems using only 68°C and 79°C nozzles, the system total protected area is unlimited. The nozzles shall only be pendent oriented, and the ceiling to nozzle distance shall be not less than 40 mm or more than 100 mm. For Light Hazard and Ordinary Hazard Group 1 systems, the vertical clearance between protected commodity and the nozzle deflector shall be not less than 0.61 m. For all Am24 systems, nozzle to wall spacing shall be not more than 1.25 m, and spacing otherwise shall not exceed 2.5 m x 2.5 m. Minimum nozzle to nozzle spacing shall be 0.76 m. The operating pressure range shall be 11.7 to 17.2 bar, and the nominal flow constant (K, metric) used for system design shall be 9.2 (litres/minute, bar).
- iii. The Am24 nozzles shall not be used in environments which are likely to unacceptably degrade the selected nozzle finish, or exposed materials of construction, as specified in Grinnell Technical Data Sheet TD1172 dated November 1997.
- iv. Pipe (tube) and fittings located downstream of the main pipeline strainer shall be brass, copper, or stainless steel, as specified in NFPA 750 and in Grinnell Data Sheet TD1172 of November 1997. Non-stainless ferrous fittings and pipe shall not be used, even if galvanised or other coating is applied. For Light Hazard systems only, CPVC pipes and fittings specifically listed for light hazard fire protection service may be used provided that they are installed in accordance with their listings and the pipe manufacturer's instructions. CPVC pipes and fittings shall not be used where the service pressure and temperature would exceed 12.1 bar and 66°C respectively. CPVC pipe shall not be installed above open-gridded ceilings, within combustible concealed spaces required to be sprinkler protected, or in other exposed situations.

Producer's description

The Tyco Fire Products, AquaMist®, Model AM24, 15NS x 9.2K(metric), 57°/68°/79°/93°C (3 mm bulb), pendent, QR water-mist nozzles are a bronze-framed frangible glass bulb type automatic nozzles for use in engineered wet pipe or single-interlock preaction water-mist fire-suppression systems for protection of Light Hazard and Ordinary Hazard Groups 1 and 2 risks as defined in NFPA 13 and AS 2118. This listing of the Am24 nozzles covers their use only in engineered hydraulically calculated systems designed and installed in accordance with the National Fire Protection Association Standard for Installation of Water Mist Fire Suppression Systems, NFPA 750 or, when published, its equivalent Australian Standard for design, installation, and commissioning of water mist systems.

The Am24 nozzle utilises an intermediate-pressure single jet of aqueous fluid impinging on a diffuser which produces a spray having a range of water droplet sizes suitable for the protection of the above Hazard Classifications.

The passageways of the nozzle inlet strainer and orifice insert have been designed to allow the nozzles to be used with unfiltered water supplies. However, a corrosion-resistant cleanable strainer with maximum basket perforation diameter of 2.5 mm is required to be installed upstream of the first branching to a water mist nozzle.

Systems using Am24 nozzles may operate with natural sea water providing that they are pre-charged with potable water and, after each system operation, the system is flushed with potable water before being again pre-charged.

Technical specification

The following details are a representative extract of the technical specification for the Tyco Fire Products, AquaMist®, Model AM24, 15NS x 9.2K(metric), 57°/68°/79°/93°C (3 mm bulb), pendent, QR water-mist nozzles and may be subject to change. Complete and current details should be determined from the designated producer's technical manual/data sheets.

Nominal orifice size:	4.75 mm
Inlet strainer perforations:	3.18 mm diameter
Nominal K factor (metric):	9.2 (litres/minute, bar)
Design min. operating pressure:	7.0 bar
Design max. working pressure:	17.2 bar
Thread size:	15NS (available with NPT or ISO 7/1 thread)
Dimensions:	Overall length (including inlet strainer) 76 mm approx.
Nominal weight:	70 grams

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Supplementary information

Standard finishes:	Unpainted bronze (investment-cast finish), white polyester, or bright chromium-plating.
Preaction valve:	Use Grinnell Model F445 or Model F446 Automatic Water Control valves with Electric Actuation Trim, for maximum working pressures of 12.1 bar and 17.2 bar, respectively. A smoke detection system shall be used to operate the preaction valves.
Tightening torque:	10 to 20 Nm should be adequate to give a leak-tight joint. However, 28 Nm must not be exceeded. The Grinnell Model F855 Nozzle Wrench shall be used when installing or removing the polyester-coated nozzles, but a 200 - 250 mm long adjustable wrench may be used with unpainted or chrome-plated nozzles.