

AS 4587:2020



Water mist fire protection systems — System design, installation, and commissioning



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- Fire Protection Association Australia
- National Fire Industry Association

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Preface

This Standard was prepared by the Standards Australia Committee FP-011, Special Hazard Fire Protection Systems, to supersede AS 4587—1999.

The objective of this Standard is to provide users of water mist fire protection systems with minimum design, installation, testing and commissioning requirements for water mist systems using either closed or open nozzles. Some systems may employ compressed air or inert gases to produce water mist.

This Standard does not provide for the maintenance of water mist systems. Maintenance of fire protection equipment is contained in the AS 1851 series.

The major change in this edition is alignment with international and Australian Standards where applicable.

The terms “normative” and “informative” are used in Standards to define the application of the appendices to which they apply. A “normative” appendix is an integral part of a Standard, whereas an “informative” appendix is only for information and guidance.

This Standard includes a commentary on some of the clauses. The commentary directly follows the relevant clause, is designated by ‘C’ preceding the clause number and is printed in italics in a box. The commentary is for information and guidance and does not form part of the Standard.

Contents

Preface	ii
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Uses and limitations	5
4.1 General	5
4.2 Protection of multiple risks or enclosures	6
4.3 Limitations	6
4.4 Local application	7
4.5 Volume protection	7
4.6 Foam additives	7
4.7 Environmental factors	7
5 Safety requirements	8
5.1 Hazard to personnel	8
5.2 Water quality	8
5.3 Oxygen depletion	8
5.4 Occupiable areas	8
5.4.1 Open nozzle systems	8
5.4.2 Sealed nozzle systems	9
5.5 Electrical hazards	10
5.6 Electrical earthing	10
5.7 Warning notices	10
6 Components and installation	12
6.1 General	12
6.2 Discharge nozzles	12
6.2.1 General	12
6.2.2 Corrosion protection	13
6.2.3 Nozzle clogging	13
6.2.4 Spare nozzles	13
6.3 Pipework and fittings	13
6.3.1 General	13
6.3.2 Piping	13
6.3.3 Flexible connections	13
6.3.4 Pipe or tube bending	14
6.3.5 Pipe threads	14
6.3.6 Fittings	14
6.3.7 Flanges	14
6.3.8 Welding and brazing	14
6.4 Installation of pipework	14
6.4.1 Preparation of pipe	14
6.4.2 Pipe supports	14
6.4.3 Distance between supports	15
6.5 Valves and devices	15
6.5.1 General	15
6.5.2 Isolating valves	15
6.5.3 Valve monitoring	15
6.5.4 Valve protection	15
6.5.5 Drain Valves	16
6.5.6 Strainers	16
6.5.7 Pressure regulating valves (PRVs)	16
6.5.8 Check valves	16

6.5.9	Back flow prevention	17
6.5.10	Pressure indication.....	17
6.6	Water supply.....	17
6.6.1	General.....	17
6.6.2	Pressurization systems.....	17
6.6.3	Storage containers.....	18
6.6.4	Mist system water and additives.....	19
6.6.5	Reserve supply.....	20
6.6.6	Atomizing gas for twin fluid systems.....	20
7	Protected enclosure requirements	20
7.1	Unclosable openings.....	20
7.2	Services.....	20
7.3	Pressure relief venting.....	21
8	Detection, actuation and control systems.....	21
8.1	General.....	21
8.2	Automatic detection.....	21
8.3	Operating devices — Open nozzle systems.....	21
8.3.1	Automatic operation.....	21
8.3.2	Manual operation.....	21
8.3.3	Manual mechanical release.....	22
8.4	Operating devices — Sealed nozzle systems.....	22
8.5	Control equipment.....	22
8.5.1	Electric control equipment.....	22
8.5.2	Local Control Station (LCS).....	22
8.5.3	Pneumatic control equipment.....	22
8.6	Audible alarms and visual warning devices.....	22
9	System design.....	24
9.1	General.....	24
9.2	Nozzles.....	24
9.3	System type and size.....	25
9.4	System discharge requirements.....	25
9.4.1	Sealed nozzle systems.....	25
9.4.2	Open nozzle systems.....	25
9.5	System duration/volume requirements.....	25
9.5.1	General.....	25
9.5.2	Extinguishing systems using open nozzles.....	25
9.5.3	Suppression systems using sealed nozzles.....	26
10	Hydraulic calculations.....	26
10.1	General.....	26
10.2	Calculation methods.....	26
10.2.1	General.....	26
10.2.2	Hydraulic junction points.....	26
10.3	Hazen-Williams.....	26
10.3.1	Formula.....	26
10.3.2	Pressure loss in fittings.....	27
10.3.3	Equivalent pipe lengths of valves and fittings.....	27
10.3.4	Specific friction loss values.....	27
10.4	Darcy-Weisbach.....	28
10.4.1	Darcy-Weisbach equations.....	28
10.4.2	Friction factor.....	29
10.5	Pneumatic calculation procedures for atomizing media in twin fluid systems.....	29
10.5.1	Maximum and minimum pneumatic pressure.....	29
10.5.2	Basis of calculation.....	29
10.5.3	Determining water pressure vs air pressure.....	30
10.5.4	Required pipe size calculations.....	30
10.5.5	Calculation results.....	30

11 Commissioning and acceptance testing	30
11.1 General.....	30
11.2 Tests and inspections.....	30
11.2.1 General.....	30
11.2.2 Review of design calculations.....	30
11.2.3 Review of mechanical components.....	31
11.2.4 Pipe integrity.....	31
11.2.5 System flow.....	31
11.2.6 Review of electrical components.....	32
11.2.7 System functional test.....	32
11.3 Completion certificate and documentation.....	33
Appendix A (normative) Commissioning check list	34

Introduction

The fire protection of a building or plant need to be considered as a whole. While water mist fire protection systems form only a part, though an important one, of the available facilities, it should not be assumed that their adoption necessarily removes the need to consider supplementary measures, such as the provision of portable fire extinguishers or mobile appliances for first aid or emergency use, or measures to deal with special hazards.

A water mist system installed in accordance with this Standard does not provide a deemed to satisfy solution as an alternative to a mandatory sprinkler system.

Water mist is a specific application solution which needs to be proven for each individual application and/or occupancy and to have demonstrated performance against standardized fire tests and component tests, as indicated by a report issued by the fire test laboratory.

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Water mist fire protection systems — System design, installation, and commissioning

1 Scope

This Standard sets out minimum requirements and recommendations for the design, installation and commissioning of water mist fire protection systems and describes the characteristics of the various types of water mist systems and the types of fire for which they are a suitable control, extinguishing or suppression medium.

The performance of water mist systems is highly dependent on the characteristics of the water mist droplets and the means used to generate and distribute those droplets. Accordingly, this Standard does not provide definitive fire performance criteria on an 'application rate' or 'density' basis.

Water mist systems subject to this standard may be arranged as total flooding, zoned total flooding, assumed area of operation, or local application systems and designed for control, suppression or extinguishment of fires in specific industrial and commercial hazards.

Water mist systems in residential occupancies and those used for explosion suppression are outside the scope of this Standard. This Standard does not provide requirements or guidance for water mist systems to replace mandatory sprinkler systems.

Water mist fire protection systems are herein referred to as "a system" or "the system".

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

AS 1210, *Pressure vessels*

AS 1349, *Bourdon tube pressure and vacuum gauges*

AS 1530.1, *Methods for fire tests on building materials, components and structures, Part 1: Combustibility test for materials*

AS 1670.1, *Fire detection, warning, control and intercom systems — System design, installation and commissioning, Part 1: Fire*

AS 1670.5, *Fire detection, warning, control and intercom systems — System design, installation and commissioning, Part 5: Special hazards systems*

AS 2030.1, *Gas cylinders, Part 1: General requirements*

AS 2118.1, *Automatic fire sprinkler systems, Part 1: General systems*

AS 2304, *Water storage tanks for fire protection systems*

AS 2613, *Safety devices for gas cylinders*

AS 2941, *Fixed fire protection installations — Pumpset systems*

AS 4041, *Pressure piping*

AS 4118.1.1, *Fire sprinkler systems, Part 1.1: Components — Sprinklers and sprayers*

AS 4214, *Gaseous fire-extinguishing systems*

AS/NZS 1850, *Portable fire extinguishers — Classification, rating and performance testing*