AS 4587:2020

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

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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

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.

Australian Standard®

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*