



JOINT CANADA-UNITED STATES
NATIONAL STANDARD

ANSI/CAN/UL 260:2023

STANDARD FOR SAFETY

Dry Pipe and Deluge Valves for Fire-
Protection Service



SCC FOREWORD

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UL Standard for Safety for Dry Pipe and Deluge Valves for Fire-Protection Service, ANSI/CAN/UL 260

Eighth Edition, Dated October 31, 2023

Summary of Topics

This new Eighth Edition of ANSI/CAN/UL 260, Standard for Dry Pipe and Deluge Valves for Fire-Protection Service, dated October 31, 2023 includes clarification of products covered by the Scope and additional revisions throughout.

The new and revised requirements are substantially in accordance with Proposal(s) on this subject dated May 12, 2023.

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This ANSI/CAN/UL Safety Standard consists of the Eighth Edition.

The most recent designation of ANSI/UL 260 as an American National Standard (ANSI) occurred on October 31, 2023. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page, Preface, and SCC Foreword.

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Preface (UL)

This is the Eighth Edition of the ANSI/CAN/UL 260, Standard for Dry Pipe and Deluge Valves for Fire-Protection Service.

ULSE is accredited by the American National Standards Institute (ANSI) and the Standards Council of Canada (SCC) as a Standards Development Organization (SDO).

This Standard has been developed in compliance with the requirements of ANSI and SCC for accreditation of a Standards Development Organization.

This ANSI/CAN/UL 260 Standard is under continuous maintenance, whereby each revision is approved in compliance with the requirements of ANSI and SCC for accreditation of a Standards Development Organization. In the event that no revisions are issued for a period of four years from the date of publication, action to revise, reaffirm, or withdraw the standard shall be initiated.

In Canada, there are two official languages, English and French. All safety warnings must be in French and English. Attention is drawn to the possibility that some Canadian authorities may require additional markings and/or installation instructions to be in both official languages.

Comments or proposals for revisions on any part of the Standard may be submitted to ULSE at any time. Proposals should be submitted via a Proposal Request in ULSE's Collaborative Standards Development System (CSDS) at <https://csds.ul.com>.

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This Edition of the Standard has been formally approved by the Technical Committee (TC) for Check, Dry Pipe, And Alarm Valves For Fire Protection Service, TC 260.

This list represents the TC 260 membership when the final text in this standard was balloted. Since that time, changes in the membership may have occurred.

TC 260 Membership

Name	Representing	Interest Category	Region
Diantao Bai	Tianjin Fire Research Institute Of MEM Shenzhen Inter Safety Technology CO LTD	Testing & Stds Org	China
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George Istefan	Watts Water Technologies	Producer	USA
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Robert Vincent	Shambaugh & SON INC	Supply Chain	USA
Jeffrey Zwirn	IDS Research Development Inc	General Interest	USA

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This Standard is intended to be used for conformity assessment.

The intended primary application of this standard is stated in its scope. It is important to note that it remains the responsibility of the user of the standard to judge its suitability for this particular application.

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INTRODUCTION

1 Scope

1.1 These requirements cover valve equipment intended for installation in piping systems to supply water automatically to dry pipe, deluge, and pre-action sprinkler systems for fire-protection service.

1.2 Valves covered by these requirements may be a differential type, latched-clapper type, or a combination of these types.

1.3 The valves covered by these requirements are intended for installation and use in accordance with the following standards:

- a) Standard for Low-, Medium-, and High-Expansion Foam, NFPA 11.
- b) Standard for the Installation of Sprinkler Systems, NFPA 13.
- c) Standard for the Installation of Standpipe and Hose Systems, NFPA 14.
- d) Standard for Water Spray Fixed Systems for Fire Protection, NFPA 15
- e) Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems, NFPA 16

1.4 This standard does not cover low-differential dry pipe valves or valves with differentials outside of the requirement specified for differential dry pipe valves.

2 Components

2.1 Auxiliary components or attachments to valves, such as water-motor-driven alarm gongs, electric circuit closers, pressure-operated switches, pressure gauges, trim and drain valves, and the like, shall comply with the requirements for such devices or products and also with respect to the particular application. See UL 753, UL 393, and UL 258. Also see [2.2](#) – [2.5](#).

2.2 Except as indicated in [2.3](#), a component of a product covered by this standard shall comply with the requirements for that component.

2.3 A component is not required to comply with a specific requirement that:

- a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or
- b) Is superseded by a requirement in this standard.

2.4 A component shall be used in accordance with its rating established for the intended conditions of use.

2.5 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

3 Units of Measurement

3.1 Where values of measurement are specified in both SI and U.S. Customary units, it is the responsibility of the user of this standard to determine the unit of measurement appropriate for the user's needs.

4 Referenced Publications

4.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

4.2 The following publications are referenced in this Standard:

ASME B1.20.1, *Pipe Threads, General Purpose (Inch)*

ASME B1.20.3, *Dryseal Pipe Threads (Inch)*

ASME B16.1, *Gray Iron Pipe Flanges and Flanged Fittings: Class 25, 125, and 250*

ASME B16.5, *Pipe Flanges and Flanged Fittings: NPS 1/2 Through NPS 24 Metric/Inch*

ASTM A53/A53M, *Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless*

ASTM A135/A135M, *Standard Specification for Electric-Resistance-Welded Steel Pipe*

ASTM A795/A795M, *Standard Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use*

ASTM A307, *Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60,000 PSI Tensile Strength*

ASTM A563, *Standard Specification for Carbon and Alloy Steel Nuts*

ASTM E145, *Standard Specification for Gravity-Convection and Forced-Ventilation Ovens*

AWWA C207, *Steel Pipe Flanges for Waterworks Service - Sizes 4 in. Through 144 in. (100 mm through 3,600 mm)*

AWWA C606, *Grooved and Shouldered Joints*

NFPA 11, *Low-, Medium-, and High-Expansion Foam*

NFPA 13, *Installation of Sprinkler Systems*

NFPA 14, *Installation of Standpipe and Hose Systems*

NFPA 15, *Water Spray Fixed Systems for Fire Protection*

NFPA 16, *Installation of Foam-Water Sprinkler and Foam-Water Spray Systems*

UL 157, *Gaskets and Seals*

UL 258, *Shutoff Valves for Trim and Drain Purposes for Fire Protection*

UL 393, *Indicating Pressure Gauges for Fire Protection Service*

UL 753, *Alarm Accessories for Automatic Water-Supply Control Valves for Fire Protection Service*

5 Glossary

5.1 For the purpose of this standard the following definitions apply.

5.2 ALARM DEVICE – A mechanical or electrical device to sound an alarm on operation of the valve.

5.3 AUTOMATIC DRAIN VALVE – A valve connected in the open position to the intermediate chamber of a dry pipe valve so as to drain water from the chamber and vent the chamber to atmosphere when the valve is in the set position, and limits water flow from the chamber after the valve is tripped.

5.4 CLAPPER – That portion of a valve mechanism on which air pressure or water pressure, or both, act and which opens to allow water to flow through the valve when operated.

5.5 DELUGE VALVE – An automatic water-supply control valve that is intended to be operated by:

- a) Mechanical, electrical, hydraulic, pneumatic, or a thermal fire detection system installed in the same area as sprinklers;
- b) Manual means; or
- c) A combination of these methods.

A deluge valve is intended to admit water into:

- d) A piping system having open sprinklers (deluge systems); or
- e) A piping system with closed sprinklers (pre-action systems).

5.6 DIFFERENTIAL – The ratio of system water supply pressure to system air pressure, expressed as gauge pressures measured at the trip point.

5.7 DIFFERENTIAL DRY PIPE VALVE – A dry pipe valve having an air clapper of larger area relative to the area of the water clapper with the two separated by an intermediate chamber maintained at atmospheric pressure.

5.8 DRY PIPE VALVE – An automatic sprinkler water-supply control valve constructed so that air pressure in a system of piping will retain water pressure and flow until the air pressure in the system is released by actuation of an automatic sprinkler, manual release, or other similar devices causing automatic operation of the valve and allowing water into the system.

5.9 INTERMEDIATE CHAMBER – That portion of a differential dry pipe valve which separates the air and/or water clapper seating surfaces and that is at atmospheric pressure when the valve is in the set position.

5.10 LATCH, ANTI-RESEAT – A latch mechanism provided in a differential dry pipe valve designed to prevent the clapper from returning to its set position after operation.

5.11 LATCHED-CLAPPER TYPE VALVE – A valve in which a mechanism acts to produce a force which is multiplied through a series of levers, links, or latches to maintain the water clapper in the closed position. Such a valve is sometimes referred to as a mechanical type.

5.12 LEAK POINT – The system air pressure and service water pressure at which water begins to emit from the intermediate chamber drain during the tripping sequence of a valve.

5.13 NPS (NOMINAL PIPE SIZE) — A dimensionless designator for pipe sizes defined in standards including ASTM A53/A53M, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; ASTM A135/A135M, Standard Specification for Electric-Resistance-Welded Steel Pipe and ASTM A795/A795M, Standard Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use. Used to replace terms such as "Nominal Diameter" and "Nominal Size."

5.14 PILOT SPRINKLER – An automatic sprinkler connected to an air or water line, which in turn is connected to a deluge, pre-action, or other water-supply control valve; when actuated, the sprinkler will cause the valve to operate.

5.15 PRIMING CONNECTION – A port provided in the valve body to allow water to enter above the clapper when the valve is in the set position.

5.16 SET POSITION – The position of a valve clapper and other operating parts with system pressure and system air pressure applied when the valve is ready for operation.

5.17 SYSTEM AIR PRESSURE – The static air pressure in the system piping when the valve is in the set condition.

5.18 SYSTEM PRESSURE – The static water pressure at the main outlet of a valve when the valve is in the set condition.

5.19 TRIP POINT – That system air pressure and service water pressure at which the valve clapper begins to move away from the set position to allow water to flow into the system.

5.20 TRIPPING DEVICE – A device for operating a dry pipe or deluge valve, initiated by a fire detection system or by manual means.

5.21 VALVE GAG – Any supplementary means which prevents normal operation.

5.22 WATER COLUMNING – A condition occurring in a dry, deluge, or pre-action fire suppression system where water accumulates downstream of the clapper of a system control valve, preventing the control valve from operating.

5.23 WATER-MOTOR OPERATED ALARM – A mechanical alarm device (operated by energy or water flow) attached to a dry pipe, pre-action, or deluge valve and supplied with water from the intermediate chamber or discharge side of the valve, to sound an alarm on operation of the valve.

5.24 WET PILOT SPRINKLER LINE – A hydraulic detection and actuation piping system equipped with heat responsive devices, commonly automatic sprinklers which when subjected to heat from a fire, operate to release water pressure from the piping system causing the automatic operation of a deluge valve.

CONSTRUCTION

6 Sizes

6.1 Valves covered by these requirements include sizes 1 – 16 NPS, inclusive.

6.2 Valve sizes refer to the nominal diameter of the waterway through the inlet and outlet connections and to the pipe size for which the connections are intended. The diameter of the waterway through the