UL 1358

Outline of Investigation for Compressed Gas Check Valves and Hose Couplers

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Summary of Topics

This third issue of the Outline of Investigation for Compressed Gas Check Valves and Hose Couplers, UL 1358, revises the Moist Ammonia Air Stress Cracking Test.

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INTRODUCTION

1 Scope

1.1 These requirements cover backpressure and other types of check valves and hose couplers for compressed gases other than for liquefied petroleum gas (LP-Gas) in applications covered by NFPA 58, or anhydrous ammonia.

1.2 Check valves and hose couplers covered by these requirements are intended for use with industrial equipment and systems such as, but not limited to, oxygen-fuel gas welding applications covered by the following installation codes:

a) Standard for the Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting and Allied Processes, NFPA 51 and

b) Safety in Welding and Cutting and Allied Processes, AWS Z49.1.

1.3 Check valves for use with liquefied petroleum gas in applications covered by NFPA 58 or anhydrous ammonia applications covered by ANSI K61.1 are covered by the requirements in the Standard for Valves for Anhydrous Ammonia and LP-Gas (Other Than Safety Relief), UL 125.

1.4 These requirements do not apply to check valves for compressed gases for use in refrigerated storage systems.

1.5 Except for such observations as are required to ascertain performance characteristics, the assigning of flow capacity ratings are not within the scope of these requirements.

2 General

2.1 Components

2.1.1 Except as indicated in 2.1.2, a component of a product covered by this outline shall comply with the requirements for that component.

2.1.2 A component is not required to comply with a specific requirements that:

a) Involves a feature or characteristic not required in the application of the component in the product covered by this outline, or

b) Is superseded by a requirement in this outline.

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

2.1.4 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.

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2.2 Units of measurement

2.2.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

2.3 Undated references

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

3 Glossary

3.1 For the purposes of this outline, the following definitions apply.

3.2 CHECK VALVE, BACKPRESSURE – A device that permits fluid flow in only one direction.

3.3 CHECK VALVE, EXCESS FLOW – A device designed to close when fluid flow exceeds a prescribed flow rate.

3.4 COMPRESSED GAS IN SOLUTION (ACETYLENE) – A nonliquefied compressed gas that is dissolved in a solvent.

3.5 FUEL GAS – Acetylene, hydrogen, natural gas, liquefied petroleum gas (LP-Gas), methylacetylene-propadiene stabilized gas (MPS-Gas), and methane, and other liquefied and non-liquefied flammable gases, not including biofuels, that are stable because of their composition or because of the conditions of storage.

3.6 HOSE COUPLER – A device that consists of two parts (plug and socket) that provides a means for manually connecting and disconnecting the gas supply equipment to and from the gas consuming equipment, without the use of tools. The socket contains a check valve that prevents the flow of gas when the two parts are separated.

3.7 LIQUEFIED COMPRESSED GAS – A gas, which under the charged pressure is partially liquid at a temperature of 70.0°F (21.1°C).

3.8 LIQUEFIED PETROLEUM GAS (LP-GAS OR LPG) – Any material having a vapor pressure not exceeding that allowed for commercial propane composed predominantly of the following hydrocarbons, either by themselves (except propylene) or as mixtures: propane, propylene, butane (normal butane or isobutane) and butylenes.

3.9 MPS-GAS – Methylacetylene-propadiene, stabilized; a mixture of gases that, in the liquid phase conforms to the following:

a) Methylacetylene-propadiene (in combination, with a maximum ratio of 3.0 moles of methylacetylene per mole of propadiene in the initial liquid phase in a storage container) – 68 mole percent maximum;

b) Propane, butane, isobutane (in combination) – 24 mole percent minimum of which at least 1/3 (8 mole percent of total mixture) shall be butane and/or isobutane;

c) Propylene – 10 mole percent maximum; and

d) Butadiene – 2 mole percent maximum.

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