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REPORT

on

SPECIAL SYSTEM WATER CONTROL VALVES, DOUBLE INTERLOCK TYPE

Viking Corp.
Hastings, MI

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GENERAL

INTRODUCTION:

This Report describes the investigation of double interlock type valves intended for installation in accordance with the National Fire Protection Association Standard for the Installation of Sprinkler Systems, NFPA 13.

OBJECT:

The object of this investigation was to determine compliance of the valves with the Standard for Dry Pipe and Deluge Valves for Fire Protection Service, UL 260 and the Guide for Investigation of Dry Pipe, Deluge and Pre-Action Valves For Fire Protection Service, ULC/ORD C260, in effect as of the date of this Report.

PLAN:

The investigation of the deluge valves consisted of conducting a product conformance evaluation and performance testing as described in UL 260, ULC/ORD C260.

DESCRIPTION

PRODUCT COVERED: The following valves are double interlock preaction type sprinkler system water control valves and shall be installed in accordance with the manufacturer's installation instructions:

Listing	Model	Size, in.	System Type	Rated Pressure, psig	Installation Orientation
USL, CNL	G-4000	4	Double Interlock Pre-action w/ pneumatic/ pneumatic release	250	Vertical
USL, CNL	G-4000	4	Double Interlock Pre-action w/ electric/pneumatic-electric release	250	Vertical
USL, CNL	G-4000	4	Double Interlock Pre-action w/ electric/pneumatic release	250	Vertical
USL, CNL	G-4000	4	SUREFIRE Pre-action	250	Vertical

CONSTRUCTION DETAILS:

The devices have been examined and found to comply with the Standard for Dry Pipe and Deluge Valves for Fire Protection Service, UL 260, Seventh Edition and the Guide for the Investigation of Dry Pipe and Deluge and Pre-Action Valves for Fire Protection Service, ULC/ORD C260, Issue No. 2., in effect as of the date of this Report.

USE:

The products covered by this Report are for use in accordance with the National Fire Protection Association Standard for Installation of Sprinkler Systems, NFPA 13.

CNL refers to investigations to Canadian Standard ULC/ORD C260.

The following tests were conducted:

Test	Paragraph / Clause
Examination of Samples	UL260, Sec. 6-19
Bolt Stress Calculations Review	UL260, Sec.9.10 & 9.11
Metallic Material Certificate Review	UL 260,Sec. 21
Nonmetallic Material Test	UL 260, Sec. 22.3.1 - 22.3.2
Installation Assembly	UL 260, Sec. 24
Operation - Normal	UL 260, Sec. 26.6
Alarm Device Connection operation	UL260, Sec. 9.5 & 26.4
Hydraulic Friction Loss	UL 260, Sec. 29
Deformation	UL 260, Sec. 27.2
Leakage	UL 312, Sec. 19
Strength of Body	UL 260, Sec. 30
Diaphragm Assembly Cycling (1,000 cycles)	UL1091, Sec. 23
Pyrolytic Gas Chromatograph	UL746A, Sec. 44
Marking Review	UL 260, Sec. 32

The following tests were waived:

Test	Rationale for Waived Test ⁺	File Reference	Report Date	Test Record No.
Non-metallic Material Test	a	N/A	N/A	N/A
Adhesion Test for Resilient Seat Material	b	N/A	N/A	N/A
Servicing Test for Valves Without Handhole Openings	c	N/A	N/A	N/A
Reseating Test	d	N/A	N/A	N/A

- a. Originally, the valve was to utilize a polycarbonate 30% glass filled prime piston. Since long term testing was necessary for this material, Viking revised the prime piston material to UNS-C84400 brass. No further testing was necessary.
- b. Since the seating materials, UNS-C11000 H02 electroless nickel plated with tinned flashing, is tinned, additional testing was not necessary.
- c. Sample valves will be installed with 12 in. section of pipe directly above the Model G-4000 valve. Prior to maintenance, this section of pipe may be removed to provide clearance for lifting the cover from the body.
- d. Since the valve utilizes a check valve to prevent the reverse flow of water and in addition Viking is utilizing a PORV to latch the system open engineering judgment was made that the changes do not negatively impact the performance of the product for the specific test waived.

Test results relate only to the items tested.