

File Ex643  
Project 03NK31930  
Project 04NK24425  
Project 05NK25712  
Project 06NK15719  
**Project 06NK06003**  
**Project 06NK24531**

Issued: August 4, 2004  
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REPORT

on

SPRINKLERS, AUTOMATIC AND OPEN

Viking Corp  
Hastings, MI

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GENERAL

INTRODUCTION:

This Report describes the investigation of automatic sprinklers intended to be installed in accordance with the National Fire Protection Association Standard For The Installation of Sprinkler Systems, NFPA 13, and the manufacturers installation instructions.

OBJECTIVE:

The objective of this investigation was to determine compliance of the automatic sprinklers with the Standard For Automatic Sprinklers For Fire Protection Service, UL 199, and to determine the suitability of the sprinklers when installed as referenced in the manufacturer's installation instructions.

PLAN:

**The investigation consisted of conducting a product conformance evaluation and performance testing as described in UL 199 and as described in this Report. See Fig. 2 for installation instructions.**

DESCRIPTION

PRODUCT COVERED:

Automatic sprinklers incorporating frangible Norbulb 3.0 mm extra strong glass bulbs manufactured of the following models, types and temperature ratings:

Listings	SIN	Response Type	Sprinkler Type	Nominal K-Factor	Description	Temperature Rating, °F
USL, CNL	VK572	SR	Pendent, Rec. Pendent	14.0	ECOH	155,175,200,286
USL, CNL	VK570	SR	Upright	14.0	ECOH	155,175,200,286
USL, CNL	VK572	QR	Pendent, Rec. Pendent	14.0	ECOH	155,175,200
USL, CNL	VK570	QR	Upright	14.0	ECOH	155,175,200

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GENERAL:

The sprinkler consists of frame, deflector, cap assembly, frangible glass bulb heat responsive element, and releasing mechanism. The spring material is Beryllium Nickel.

**The quick response rating is only for the 12 by 12 and 14 by 14 ft. sprinkler spacing.**

CNL indicates Listing to Canadian National Standard ULC-ORD C199-03.

RATINGS:

The sprinkler is produced in the following temperature ratings:

Rating, °F	Color
155	Red
175	Yellow
200	Green
286	Blue

MARKINGS:

Location

Marking

Wrench Head

"Viking" and year of manufacturing on opposite side.

Deflector, ECOH

"ECOH", SIN, K=14.0, UL in circle symbol.

TEST RECORD NO. 1SAMPLES:

Representative samples of the Model VK572, K14.0 pendent and recessed pendent, ECOH sprinklers were used in this investigation.

The products are constructed of brass alloy C84400 frame, brass alloy C51000 deflectors, brass C31600 or C31400 pip cap, brass alloy C36000 compression screw, a Nickel alloy belleville spring and a Component Recognized Norbulb 3.3 mm glass bulb.

TEST METHOD REFERENCE:

The following tests were conducted in accordance with the requirements described in UL 199 and ULC C-199:

1. Examination Of Samples
2. Leakage
3. Hydrostatic Strength
4. 30-Day Leakage
5. Water Hammer
6. Room Response
7. Sensitivity - Oven Heat
8. Operation - Lodgment
9. High Temperature - Uncoated Sprinklers
10. Strength of Frame
11. Impact Test w/ Protective Covers
12. Rough Usage
13. Vibration
14. Calibration
15. 10-Day Corrosion
16. Flow Endurance
17. Vacuum
18. Freezing
19. Operation - Cold Soldering
20. Stress Corrosion Cracking of Brass Parts
21. Floor Collections (No Obstructions)
22. Fire 350 Crib
23. Piled Stock Ordinary Hazard Large Scale Fire Tests

Based upon the similarities between the Model VK572 pendent ECOH sprinklers submitted under this investigation with the Model VK510 pendent ESFR sprinkler and the VK580 storage sprinklers investigated under Assignment 02NK34302, File EX5085 and Project 03NK22423, File EX643 only the tests described in Test Record No. 1 were judged necessary.

Based upon comparisons between the ECOH distribution testing conducted under this investigation and the ECOH, 11.2K Pendent distribution testing conducted under File EX643, Issued Date 06-10-1993, the Model VK572, 14.0K ECOH sprinkler can be utilized in obstructed construction as defined in NFPA 13 (2002 Edition).

The manufacturer's installation instructions (Fig. 1,pg. 1-6) were used in the evaluation of the product to determine an appropriate investigation.

CONCLUSION

Samples of the product covered by this Report have been found to comply with the requirements covering the class and the products are judged to be eligible for Listing and Follow-Up Service. The manufacturer is authorized to use the Laboratories' Mark on such products which comply with the Follow-Up Service Procedure and any other applicable requirements of Underwriters Laboratories Inc. Only those products which properly bear the Laboratories' Mark are considered as Listed by Underwriters Laboratories Inc.

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