

File Ex643
Project 96NK8906
*Project 98NK20794

Issued: January 31, 1997
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REPORT

on

SPRINKLERS, AUTOMATIC AND OPEN

The Viking Corporation
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.

OBJECT:

The object of this investigation was to determine compliance of the automatic sprinklers with the Standard For Automatic Sprinklers For Fire Protection Service, UL 199.

PLAN:

The investigation of the automatic sprinklers consisted of conducting a product conformance evaluation and performance testing as described in UL 199.

DESCRIPTION

PRODUCT COVERED:

*Model M-5 1/2 in. orifice horizontal sidewall sprinklers with Job's G-5 5 mm glass bulb and Norbulb 3 mm glass bulb heat responsive elements rated 135, 155, 175, 200, 286, and 360°F.

CONSTRUCTION DETAILS:

The devices have been examined and found to comply with the Standard For Automatic Sprinklers 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 The Installation of Sprinkler Systems, NFPA 13, and the manufacturer's installation instructions see Fig. 1.

C O N C L U S I O N

Samples of the products 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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Project 95NK34821
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REPORT

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Viking Corporation
Hasting, MI

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OBJECT:

The object of this investigation was to determine compliance of the automatic sprinklers with the Standard For Automatic Sprinklers For Fire Protection Service, UL 199.

PLAN:

The investigation of the automatic sprinklers consisted of conducting a product conformance evaluation and performance testing as described in UL 199.

DESCRIPTION

PRODUCT COVERED:

Model M, 3/8 and 1/2 in. orifice pendent and upright, Model M-5, 1/2 in. horizontal sidewall and extended coverage pendent and horizontal sidewall, Model M, 3/8 in. horizontal sidewall, high pressure sprinklers in the 135, 155, 175, 200 and 286°F temperature ratings for Quick Response Types 135, 155, 175, 200, 286 and 360°F for Standard Response Types and 135, 155 and 175°F for Quick Response Extended Coverage Types having 1/2 in. inlet threads, with rated pressure of 250 psig.

*The Model M-5 (VK442), 5.6K quick response, horizontal sidewall will be identified as SIN VK305.

*The Model M-5 (VK442), 5.6K quick response, extended coverage horizontal sidewall will be identified as SIN VK605.

CONSTRUCTION DETAILS:

The devices have been examined and found to comply with the Standard for Automatic Sprinklers, UL 199, 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 the Installation of Sprinkler Systems, NFPA 13, and the manufacturer's installation instructions (see Figs. 1, 5, 6 and 7).

C O N C L U S I O N

Samples of the products 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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File Ex643
Project 78NK8884
Project 91NK1369
Project 91NK8921
Project 91NK6712
Project 91NK20429
Project 97NK23564
Project 97NK23619
Project 97NK32051
Project 98NK5103
Project 98NK17623
Project 98NK11873
Project 99NK21033
Project 99NK25817
Project 99NK36385
Project 99NK40795
Project 00NK24313
Project 00NK39796
Project 00NK36004
Project 00NK26085
Project 01NK6252
Project 01NK33
Project 01NK09243
Project 01NK46248
Project 01NK14642
Project 03NK09286
Project 02NK14247
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REPORT
on
SPRINKLERS, AUTOMATIC AND OPEN

Viking Corp.
Hastings, MI

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GENERAL

*

PRODUCT COVERED:

Automatic sprinklers incorporating frangible 3, 5, and 3mm XS glass bulbs manufactured by Job GmbH and Norbulb, of the following models, types and temperature ratings.

Sprinklers rated 360°F utilize the 5 mm glass bulb only.

	<u>SIN #</u>	<u>DESCRIPTION</u>
USL, CNL,	VK001, VK002, VK003, VK004, VK100, VK102, VK118, VK120, VK200, VK202, VK550, VK560	2.8, 4.2, 5.6, and 8.0 K. Standard Response Upright, Pendent, Conventional, Concealed and Intermediate
USL, CNL,	VK300, VK302, VK310, VK325, VK327, VK329, VK331, VK350, VK352, VK354, VK556, VK566	2.8, 4.2, 5.6 and 8.0 K. Quick Response Upright, Pendent, Conventional, Concealed and Intermediate
USL, CNL	VK104	5.6 K. Standard Response Horizontal Side Wall
USL, CNL	VK304, VK305, VK333	2.8 and 5.6 K. Quick Response Horizontal Sidewall
USL, CNL	VK600, VK602, VK604, VK605, VK606, VK610, VK612, VK614, VK616	5.6 and 8.0 K. Quick Response and Standard Response Extended Coverage
USL, CNL	VK015, VK021, VK023, VK116, VK122, VK124, VK315, VK317, VK319, VK340, VK342, VK344, VK558	2.8 and 5.6 K. High Pressure Quick Response and Standard Response
USL, CNL	VK130, VK132	5.6 K. Stainless Steel
USL, CNL	VK550, VK556, VK560, VK566	5.6 and 8.0 K. Upright Intermediate Level Standard and Quick Response
USL, CNL	VK338, VK339	5.6 K. Stainless Steel Quick Response

(Table Cont'd)

*

<u>SIN #</u>	<u>DESCRIPTION</u>	<u>REMARKS</u>
USL, CNL	VK910	5.6 K SR Pendent
All Models	Chrome plated, Bright Brass and Nickel plated quick response.	Ratings - 135, 155, 175, 200 and 286°F, installation indicated by deflector.
All Models	Wax coated. Standard Response Only.	Ratings - 135, 155, 175, 200 and 286°F+.
All Models	Lead coated.	Ratings - 135, 155, 175, 200 and 286°F. Installation, pendent and upright.
All Models	IVC Poly 99 Polyester coated.	Ratings - 135, 155, 175, 200 and 286°F. Installation indicated by deflector.
All Models	IVC Poly 99 Polyester coated. Quick Response.	Ratings - 135, 155, 175, 200 and 286°F. Installation, upright and pendent only.
All Models	Teflon coated.	Ratings - 135, 155, 175, 200 and 286°F. Installation as indicated by deflector.
All Models	Teflon coated quick response.	Ratings - 135, 155, 175, 200 and 286°F. Installation, upright and pendent only.
All Models	IVC Poly 99 Polyester coated quick response corrosion resistant in all colors.	Ratings - 135, 155, 175, 200 and 286°F. Installation as indicated by deflector.
VK910		Ratings-135,155,175,200,286, 360°F

+ - Uses 200°F wax for installation where ambient temperature does not exceed 150°F.

OBJECT:

The object of this investigation was to determine compliance of the sprinklers with Underwriters Laboratories Inc., Standard for Automatic Sprinklers for Fire Protection Service, UL 199-1981.

*

GENERAL:

The Viking Model M bulb type sprinklers consist of a brass frame, copper pip-cap, teflon covered belville spring, and a heat responsive element. The heat responsive element consists of a glass bulb filled with a temperature sensitive liquid. Sprinkler frames are color coded in accordance with the requirements of UL 199 and NFPA 13. In addition the bulb color code reported under "Ratings" applies.

The Model M intermediate level glass bulb sprinkler may utilize the Model B-1 sprinkler guard (upright) and the Model C-1 sprinkler guard (pendent).

The Model A-1 concealed sprinkler utilizes a mounting base and cover plate constructed of UNS-G10080 steel. The cover plate is equipped with a "memory metal" clip constructed of ternary CuZnAl alloy that fastens to the deflector. Upon operation the memory metal expands enabling the cover plate to drop away from the sprinkler (See Figs. 1 and 2). Also, the cover plate may be factory painted using an alkyde paint manufactured by Automotive Finishes Inc. to a thickness not exceeding 0.008 in. thick.

RATINGS:

<u>Rating</u> Deg F	<u>Color Identification</u>	
	<u>Frame</u>	<u>Bulb</u>
135	Uncolored	Orange
155	Uncolored	Red
175	White	Yellow
200	White	Green
286	Blue	Blue
360	Red	Mauve
500	Orange	Black

USE:

These sprinklers are intended for use with automatic sprinkler equipment as covered by the Standard of the National Fire Protection Association for the Installation of Sprinkler System, NFPA 13.

MARKING:

The manufacturer's name, Viking, and issue designation are cast on the sprinkler frame. The year of manufacture is cast in the sprinkler frame and the temperature rating is stamped on the sprinkler deflector. The Listing Mark is stamped on the deflector. The words "Do Not Paint" shall be stamped on the cover plate for concealed sprinklers.

FOR ENGINEERING CONSIDERATIONS ONLY:

Table 1

<u>SIN</u>	<u>OLD MODEL</u>	<u>STYLE</u>	<u>K-FACTOR</u>	<u>RESPONSE TYPE</u>
VK100	M	Upright	5.6	SR
VK200	M	Upright	8.0	SR
VK001	M	Upright	2.8	SR
VK002	M	Upright	4.2	SR
VK102	M	Pendent	5.6	SR
VK202	M	Pendent	8.0	SR
VK003	M	Pendent	2.8	SR
VK004	M	Pendent	4.2	SR
VK104	M	HSW	5.6	OR
VK116	M-5	HSW	5.6	SR
VK015	M	HSW	2.8	SR
VK104	M	HSW	5.6	SR
VK106	M	VSW	5.6	SR
VK118	M	Conventional	5.6	SR
VK120	M	Conventional	8.0	SR
VK124	M High Pressure	Pendent	5.6	SR
VK021	M High Pressure	Upright	2.8	SR
VK122	M High Pressure	Pendent	5.6	SR
VK023	M High Pressure	Pendent	2.8	SR
VK536	M	Pendent	11.5	SR
VK300	M	Upright	5.6	QR
VK325	M	Upright	2.8	QR
VK327	M	Upright	4.2	QR
VK350	M	Upright	8.0	QR
VK302	M	Pendent	5.6	QR
VK329	M	Pendent	2.8	QR
VK331	M	Pendent	4.2	QR
VK352	M	Pendent	8.0	QR
VK333	M	HSW	2.8	QR
VK304	M	HSW	5.6	QR
VK442	M-5	HSW	5.6	QR
VK306	M	VSW	5.6	QR
VK310	M	Conventional	5.6	QR
VK354	M	Conventional	8.0	QR
VK130	N-2	Upright	5.6	SR
VK132	N-2	Pendent	5.6	SR

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Table Continued

<u>Description</u>	<u>Test Record</u>
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C O N C L U S I O N

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