

File Ex643  
Project 95NK34821  
Project 96NK19119  
Project 97NK2995  
Project 98NK20794  
Project 99NK21353  
\*Project 03NK33

Issued: 1996-11-13  
Revised: 2003-02-28

REPORT

on

SPRINKLERS, AUTOMATIC AND OPEN

Viking Corporation  
Hasting, 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, 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).

EXAMINATION OF SAMPLES:

METHOD

Representative automatic sprinkler samples were examined for compliance with the manufacturer's construction drawings and the applicable construction requirements of the Standard For Automatic Sprinklers For Fire Protection Service, UL 199. Also, the manufacturer's installation instructions were examined for conformance with the applicable requirements of UL 199.

RESULTS

The sample sprinklers were found to be in conformance with the manufacturer's drawings and UL 199. The installation instructions also complied with the applicable requirements of UL 199.

Test Record Summary:

The results of this investigation indicate that the product(s) evaluated comply with applicable requirements, and therefore, such products are judged eligible to bear UL's Mark as described on the Conclusion Page of this Report.

Test Record by:  
STEVEN J. WISNIEWSKI  
Engineering Associate

Reviewed by:  
GEORGE E. LAVERICK  
Engineering Group Leader

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.

Report by:

Reviewed by:

MICHAEL G. MCCORMICK  
Engineering Associate

GEORGE E. LAVERICK  
Engineering Group Leader

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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  
Project 03NK08543  
Project 04NK15031  
Project 07NK06815  
Project 07NK13042  
Project 09CA37128

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REPORT  
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Hastings, MI

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## GENERAL

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## 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.

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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).



## 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	<b>Pendent</b>	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

## C O N C L U S I O N

Samples of the products covered by this Report have been found to comply with 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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