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REPORT

on

SPRINKLERS - AUTOMATIC AND OPEN FOR  
FIRE PROTECTION SERVICE

The Viking Corporation  
Hastings, MI

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DESCRIPTION

PRODUCT COVERED:

\* SIN VK130 and VK132 upright and pendent standard orifice corrosion resistant sprinklers. The Model N utilizes an 8 mm bulb and has temperature ratings of 135, 155, 175, 200, 286 and 360°F. The Model N2 (VK130 and VK132) utilizes a 5 mm bulb and has temperature ratings of 135, 155, 175, 200, 286, 360 and 500°F.

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 Systems, NFPA 13-1985.

## 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 product category 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 Laboratory mark are considered as Listed by Underwriters Laboratories Inc.

Report by:

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Project 98NK5103  
Project 98NK17623  
Project 98NK11873  
Project 99NK21033  
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Project 99NK40795  
Project 00NK24313  
Project 00NK39796  
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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	<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

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

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