

File Ex643

Project 90NK436
Project 91NK9882
Project 91NK15461
Project 92NK21474
Project 92NK24995
Project 92NK22885
Project 93NK16332
Project 93NK25801
Project 97NK30246
Project 97NK36974
Project 98NK11873
Project 99NK21033
Project 98NK20794
Project 01NK09248
Project 02NK33
Project 01NK51086
Project 02NK25369
Project 02NK46230
Project 03NK8319
Project 03NK22550
Project 03NK31725
Project 03NK28087
Project 03NK35777
Project 05CA08364
Project 04NK15551
Project 08NK08652
Project 09CA11579

Project 09CA09539

Issued: September 17, 1991
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REPORT

on

SPRINKLERS, AUTOMATIC AND OPEN

Viking Corporation
Hastings, MI

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GENERAL

INTRODUCTION:

This Report describes the investigation of dry pendent, dry upright, dry horizontal sidewall, recessed horizontal sidewall, pendent recessed, dry vertical sidewall and dry recessed vertical sidewall sprinklers to be installed in accordance with the National Fire Protection Association's Standard for the Installation of Sprinkler Systems, NFPA 13.

OBJECT:

The object of this investigation was to determine compliance of automatic sprinklers with the Standard for Safety for Automatic Sprinklers for Fire Protection Service, UL 199, and other requirements to be considered applicable by Underwriters Laboratories Inc.

PLAN:

The investigation of the automatic sprinklers consisted of conducting a product conformance evaluation and performance testing as described in UL199 and as described in this Report.

File Ex643

Pages G2 to G8

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REPLACES PAGES G2 THROUGH G8

DESCRIPTION

PRODUCT COVERED:

Automatic dry type sprinklers incorporating frangible 3 and 5 mm glass bulbs manufactured by Job GmbH or Norbulb, or a quick response fusible link of the following models, types and temperature ratings.

Sprinklers rated 360°F utilize the 5 mm glass bulb only. Quick response sprinklers utilize the 3 mm glass bulb only.

	Model	Description	Remarks
USL, CNL	VK150	Pendent, 5.6K-Factor, 5 mm glass bulb	Temp. ratings: 135, 155, 175, 200, 286°F
USL, CNL	VK152	Horizontal sidewall, 5.6K-Factor, 5 mm glass bulb	Temp. ratings: 135, 155, 175, 200, 286°F
USL, CNL	VK154	Adjustable Pendent, 5.6K-Factor, 5 mm glass bulb chrome plated	Temp. ratings: 135, 155, 175, 200, 286°F
USL, CNL	VK156	Adjustable horizontal sidewall, 5.6K-Factor, 5 mm glass bulb, chrome plated	Temp. ratings: 135, 155, 175, 200, 286°F
USL, CNL	VK158	Recessed adjustable pendent, 5.6K-Factor, 5 mm glass bulb	Temp. ratings: 135, 155, 175, 200°F
USL, CNL	VK162	Recessed adjustable horizontal sidewall, 5.6K-Factor, 5 mm glass bulb	Temp. ratings: 135, 155, 175, 200°F
USL, CNL	VK160	Upright, 5.6K-Factor, 5 mm glass bulb	Temp. ratings: 135, 155, 175, 200, 286°F
USL, CNL	VK163	Adjustable Pendent, 8.0K-Factor, 5 mm glass bulb	Temp. ratings: 135, 155, 175, 200, 286°F
USL, CNL	VK164	Recessed Adjustable Pendent, 8.0K-Factor, 5 mm glass bulb chrome plated	Temp. ratings: 135, 155, 175, 200, 286°F
USL, CNL	VK166	Pendent, 8.0K-Factor, 5 mm glass bulb	Temp. ratings: 135, 155, 175, 200°F
USL, CNL	VK172	Pendent, 5.6K-Factor, 3 mm glass bulb	Temp. ratings: 135, 155, 175, 200, 286°F
USL, CNL	VK173	Pendent, 8.0 K-Factor, 3 mm glass bulb	Temp. ratings: 135, 155, 175, 200, 286°F
USL, CNL	VK174	Horizontal sidewall, 5.6K-Factor, 3 mm glass bulb	Temp. ratings: 135, 155, 175, 200, 286°F

File Ex643

Page 1A

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REPLACES PAGE 1A

	Model	Description	Remarks
USL, CNL	VK176	Adjustable Pendent, 5.6 K-Factor, 3 mm glass bulb	Temp. ratings; 135, 155, 175, 200, 286°F
USL, CNL	VK177	Adjustable pendent, 8.0 K-Factor, 3 mm glass bulb	Temp. ratings; 135, 155, 175, 200, 286°F
USL, CNL	VK178	Adjustable horizontal sidewall, 5.6 K-Factor, 3 mm glass bulb	Temp. ratings; 135, 155, 175, 200, 286°F
USL, CNL	VK180	Recessed adjustable Pendent, 5.6 K-Factor, 3 mm glass bulb	Temp. ratings; 135, 155, 175, 200°F
USL, CNL	VK181	Recessed adjustable pendent, 8.0 K-Factor, 3 mm glass bulb	Temp. ratings; 135, 155, 175, 200°F
USL, CNL	VK182	Recessed adjustable horizontal sidewall, 5.6 K-Factor, 3 mm glass bulb	Temp. ratings; 135, 155, 175, 200°F
USL, CNL	VK184	Upright, 5.6 K-Factor, 3 mm glass bulb	Temp. ratings; 135, 155, 175, 200, 286°F
USL, CNL	VK186	Recessed adjustable Pendent extended coverage light hazard, 5.6 K-Factor, 3 mm glass bulb	Temp. ratings; 155, 175°F
USL, CNL	VK188	Recessed adjustable horizontal sidewall extended coverage light hazard, 5.6 K-Factor, 3 mm glass bulb	Temp. ratings; 155, 175°F
USL, CNL	VK190	Concealed Pendent, 5.6 K-Factor, 5mm glass bulb	Temp. ratings; 155, 175 and 200°F with 135 or 165°F coverplates
USL, CNL	VK194	Concealed Pendent, 5.6 K-Factor, 3mm glass bulb	Temp. ratings; 155, 175 and 200°F with 135 or 165°F coverplates
USL, CNL	VK196	Concealed Pendent extended coverage light hazard, 5.6 K-Factor, 3 mm glass bulb	Temp. ratings; 135, 155 and 175°F with 135 or 165°F coverplates
USL, CNL	VK250	Horizontal sidewall, 8.0 K-Factor, 5 mm glass bulb	Temp. ratings; 135, 155, 175, 200, 286°F
USL, CNL	VK252	Adjustable horizontal sidewall, 8.0 K-Factor, 5 mm glass bulb	Temp. ratings; 135, 155, 175, 200, 286°F
USL, CNL	VK254	Recessed horizontal sidewall, 8.0 K-Factor, 5 mm glass bulb	Temp. ratings; 135, 155, 175, 200, 286°F
USL, CNL	VK275	Horizontal sidewall, 8.0 K-Factor, 3 mm glass bulb	Temp. ratings; 135, 155, 175, 200, 286°F
USL, CNL	VK277	Adjustable horizontal sidewall, 8.0 K-Factor, 3 mm glass bulb	Temp. ratings; 135, 155, 175, 200, 286°F
USL, CNL	VK279	Recessed horizontal sidewall, 8.0 K-Factor, 3 mm glass bulb	Temp. ratings; 135, 155, 175, 200, 286°F

USL, CNL	VK282	Pendent, 8.0 K-Factor, Quick Response Fusible Link	Temp. ratings; 165, 205, 286°F
USL, CNL	VK286	Adjustable Pendent, 8.0 K-Factor, Quick Response Fusible Link	Temp. ratings; 165, 205, 286°F
USL, CNL	VK290	Recessed Pendent, 8.0 K-Factor, Quick Response Fusible Link	Temp. ratings; 165, 205°F
USL, CNL	VK284	Horizontal sidewall, 8.0 K-Factor, Quick Response Fusible Link	Temp. ratings; 165, 205, 286°F
USL, CNL	VK288	Adjustable horizontal sidewall, 8.0 K-Factor, Quick Response Fusible Link	Temp. ratings; 165, 205, 286°F
USL, CNL	VK292	Recessed horizontal sidewall, 8.0 K-Factor, Quick Response Fusible Link	Temp. ratings; 165, 205°F

The frame and deflectors of SINS VK150, VK152, VK154, VK156, VK158, VK160, VK162, VK163, VK164, VK166, VK172, VK173, VK174, VK176, VK177, VK178, VK180, VK181, VK182, VK184, VK186, VK188, VK250, VK252, VK254, VK275, VK277, VK279 sprinklers in the 135, 155, 175, 200 and 286°F temperature ratings may include a polyethylene corrosion resistant coating manufactured by Sherwin Williams. The coating is identified as Poly 99, SW1004 and/or SW1007.

CONSTRUCTION DETAILS:

The devices have been examined and found to comply with the Standard for Automatic Sprinklers for Fire Protection Service, UL199, in effect as of the date of this Report.

CNL - Indicates Listing to Canadian National Standard ULC C199.

FOR ENGINEERING CONSIDERATION ONLY:

SIN	OLD MODEL	STYLE	K-FACTOR	RESPONSE TYPE
VK150	M - Dry	Pendent	5.6	SR
VK152	M - Dry	HSW	5.6	SR
VK154	M - Dry	Adj. Pendent	5.6	SR
VK156	M - Dry	Adj. HSW	5.6	SR
VK158	M - Dry	Rec. Adj. Pendent	5.6	SR
VK162	M - Dry	Rec. Adj. HSW	5.6	SR
VK160	M - Dry	Upright	5.6	SR
VK172	M - Dry	Pendent	5.6	QR
VK174	M - Dry	HSW	5.6	QR
VK176	M - Dry	Adj. Pendent	5.6	QR
VK178	M - Dry	Adj. HSW	5.6	QR
VK180	M - Dry	Rec. Adj. Pendent	5.6	QR
VK182	M - Dry	Rec. Adj. HSW	5.6	QR
VK184	M - Dry	Upright	5.6	QR
VK186	ECLH	Rec. Adj. Pendent	5.6	SR/QR
VK188	ECLH	Rec. Adj. HSW	5.6	SR/QR
VK190	-	Concealed Pendent	5.6	SR
VK194	-	Concealed Pendent	5.6	QR
VK196	-	ECLH Concealed Pendent	5.6	SR/QR

_ _ C O N C L U S I O N

A sample of the product covered by this Report has been found to comply with the requirements covering the class and the product is 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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