

Approved sprinklers for use with foam concentrates

General description

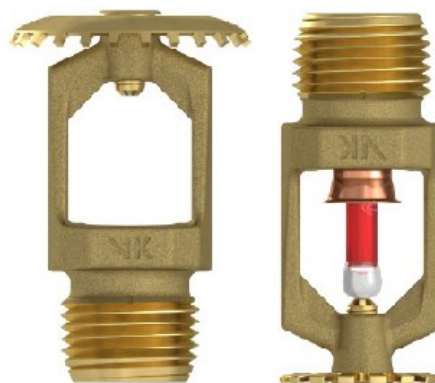
Viking Pendent and Upright Foam-Water Sprinklers are non-aspirated foam discharge outlets for use in Wet, Dry, Deluge, Preaction and Refrigerated Area applications.

Sprinkler applications are especially challenging for any foam due to the very low operating pressure and expansion reached. Applying foam through a sprinkler head is a very forceful application method and requires foam that can handle direct application and partial submersion into the fuel without losing its fire performance and burn-back resistance. Foams that shall be regarded as suitable for sprinkler applications shall also be able to withstand a limited time of water deluge directly onto the foam blanket without losing its burn-back properties. Viking Pendent and Upright Foam-Water Sprinklers are FM Approved and UL Listed in both closed head (with bulb) and open head (bulb removed) configurations.

Features:

- Tested, Listed and Approved as Foam-Water Sprinklers with specific Foam Concentrates (see section 7).
- Wide range of K Factors available: K5.6 (K80), K8.0 (K115), K11.2 (K161), K16.8 (K242)

For use in high risk applications such as warehouses, aircraft hangers, oil and chemical loading areas, generator rooms, petro-chemical, pharmaceutical and alcohol production plants.



Listings and approvals

Viking Foam Water Sprinkler are FM Approved and/or UL Listed as part of a fire extinguishing system combining designated foam concentrates, bladder tanks and proportioning devices. Approved and Listed system components can be found at www.approvalguide.com and <https://iq.ulprospector.com>.

- FM Approved – Low Expansion Foam Systems (FM5130)
- UL Listed – GFGV.EX27255 (UL162)

“SFFF compatible” refers to this product as being part of a SFFF Foam system that has been tested to recognized standards. Not all configurations are available. Please consult technical data and/or the Approval/Listing for usage requirements.

Installation

Refer to appropriate Installation Standards (i.e. NFPA, VdS, LPCB, etc.) and / or applicable FM Global Property Loss Prevention Data Sheets such as 4-12, Foam-Water Sprinkler Systems.

Operation

During fire conditions, the heat-sensitive liquid in the glass bulb expands, causing the glass to shatter, releasing the pip cap and sealing spring assembly. Water or Foam/Water Solution flowing through the sprinkler orifice strikes the sprinkler deflector, forming

Inspection, tests and maintenance

Refer to respective requirements, according to the relevant standards for Inspection, Testing and Maintenance. Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

If applicable, refer to FM Global Property Loss Prevention Datasheet 4-12 for specific test and commissioning criteria. In addition, the “Authority Having Jurisdiction” (AHJ) may have additional maintenance, testing and inspection requirements that must be followed.

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FM Approvals: Hydrocarbons ¹														
Foam Concentrate	Nominal K-Factor		Sprinkler Identification Number (SIN)		Height				Listed ² Foam Design Density		Water Discharge Density		Tested ³ Sprinkler Pressure	
	U.S.	Metric ⁴	Upright	Pendent	Min		Max		gpm/ft ²	lmp/m ²	gpm/ft ²	lmp/m ²	PSI	(bar)
					ft.	m	ft.	m						
AFFF 1% C6	5.6	80.6	VK100, VK108, VK145, VK300, VK301, VK345	--	5.0	1.5	20.0	6.1	0.20	8.1	0.30	12.2	13	0.89
	5.6	80.6	--	VK102, VK110, VK302, VK303	5.0	1.5	20.0	6.1	0.30	12.2	0.30	12.2	29	1.99
	8.0	115.2	VK200, VK204, VK350, VK351	--	5.0	1.5	30.0	9.1	0.30	12.2	0.30	12.2	14	0.96
	8.0	115.2	--	VK202, VK206, VK352, VK353	6.0	1.8	30.0	9.1	0.30	12.2	0.30	12.2	14	0.96
	11.2	161.3	VK530, VK531	--	8.0	2.4	33.0	10.1	0.30	12.2	0.30	12.2	7	0.48
AFFF 3% S C6	5.6	80.6	VK100, VK108, VK145, VK300, VK301, VK345	--	5.0	1.5	20.0	6.1	0.20	8.1	0.30	12.2	13	0.89
	5.6	80.6	--	VK102, VK110, VK302, VK303	5.0	1.5	20.0	6.1	0.30	12.2	0.30	12.2	29	1.99
	8.0	115.2	VK200, VK204, VK350, VK351	--	5.0	1.5	30.0	9.1	0.30	12.2	0.30	12.2	14	0.96
	8.0	115.2	--	VK202, VK206, VK352, VK353	8.0	1.8	30.0	9.1	0.30	12.2	0.30	12.2	14	0.96
	11.2	161.3	VK530, VK531	--	6.0	2.4	33.0	10.1	0.30	12.2	0.30	12.2	7	0.48
	11.2	161.3	--	VK377, VK536	8.0	1.8	33.0	10.1	0.30	12.2	0.30	12.2	7	0.48
	16.8	241.9	VK580	--	8.0	2.4	33.0	10.1	0.50	20.4	0.50	20.4	9	0.62
AFFF 3% M C6	5.6	80.6	VK1001, VK3001	--	6.0	1.8	40.0	12.2	0.20	8.1	0.30	12.2	13	0.89
	5.6	80.6	VK100, VK108, VK300, VK301	--	8.0	2.4	20.0	6.1	0.20	8.1	0.30	12.2	13	0.89
ARC 3x3S C6	5.6	80.6	VK100, VK108, VK145, VK300, VK301, VK345	--	5.0	1.5	20.0	6.1	0.20	8.1	0.30	12.2	13	0.89
	5.6	80.6	--	VK102, VK110, VK302, VK303	5.0	1.5	20.0	6.1	0.30	12.2	0.30	12.2	29	1.99
	8.0	115.2	VK200, VK204, VK350, VK351	--	5.0	1.5	30.0	9.1	0.30	12.2	0.30	12.2	14	0.96
	8.0	115.2	--	VK202, VK206, VK352, VK353	6.0	1.8	30.0	9.1	0.30	12.2	0.30	12.2	14	0.96
	11.2	161.3	VK530, VK531	--	8.0	2.4	33.0	10.1	0.30	12.2	0.30	12.2	7	0.48
	11.2	161.3	--	VK377, VK536	6.0	1.8	33.0	10.1	0.30	12.2	0.30	12.2	7	0.48
	16.8	241.9	VK580	--	8.0	2.4	33.0	10.1	0.50	20.4	0.50	20.4	9	0.62
ARK (3%)	5.6	80.6	VK1001, VK3001	--	6.0	1.8	24.8	7.6	0.30	12.2	0.30	12.2	13	0.89
	5.6	80.6	--	VK1021, VK3021	6.0	1.8	20.0	6.1	0.30	12.2	0.30	12.2	13	0.89
	8.0	115.2	VK200, VK204, VK350, VK351	--	9	2.7	45	13.7	0.40	16.3	0.4	16.3	25	1.72
	8.0	115.2	--	VK2021, VK2022, VK3521, VK3522	8.5	2.6	44	13.4	0.30	12.2	0.3	12.2	14	0.97
	11.2	161.3	VK 530, VK531	--	9	2.7	45	14	0.40	16.3	0.4	16.3	13	0.89
	11.2	161.3	--	VK377, VK536	6	1.8	25.2	8	0.40	16.3	0.4	16.3	13	0.89

¹ This table shows approvals available at the time of printing.

² Density indicated is minimum application density required per FM5130 Standard for Foam Extinguishing Systems. This density cannot be reduced.

³ The pressure indicated is the minimum starting pressure required for the sprinkler. However, the minimum density shown overrides the minimum starting pressure (depending on head spacing) and cannot be reduced.

⁴ Metric K-factor shown is for use when pressure is measured in bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.

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FM Approvals: Hydrocarbons ¹														
Foam Concentrate	Nominal K-Factor		Sprinkler Identification Number (SIN)		Height				Listed ² Foam Design Density		Water Discharge Density		Tested ³ Sprinkler Pressure	
					Min		Max							
	U.S.	Metric ⁴	Upright	Pendent	ft.	m	ft.	m	gpm/ft ²	lmp/m ²	gpm/ft ²	lmp/m ²	PSI	(bar)
USP 3%	5.6	80.6	VK1001, VK3001	--	6	1.8	24.8	7.6	0.2	8.1	0.3	12.2	13	0.89
	5.6	80.6	--	VK1021, VK3021	6	1.8	44	13.4	0.2	8.1	0.3	12.2	13	0.89
	8.0	115.2	VK200, VK204, VK350, VK351	--	9	2.7	45	13.7	0.3	12.2	0.3	12.2	14	0.96
	8.0	115.2	--	VK2021, VK2022, VK3521, VK3522	8	2.4	44	13.4	0.3	12.2	0.3	12.2	14	0.96
	11.2	161.3	--	VK377, VK536	6	1.8	25.2	8	0.3	12.2	0.3	12.2	7	0.48

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FM Approvals: JET A1 ¹														
Foam Concentrate	Nominal K-Factor		Sprinkler Identification Number (SIN)		Height				Listed ² Foam Design Density		Water Discharge Density		Tested ³ Sprinkler Pressure	
					Min		Max							
	U.S.	Metric ⁴	Upright	Pendent	ft.	m	ft.	m	gpm/ft ²	lmp/m ²	gpm/ft ²	lmp/m ²	PSI	(bar)
USP 3%	5.6	80.6	--	VK1021, VK3021	8.5	2.6	44	13.4	0.2	8.1	0.3	12.2	13	0.89

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FM Approvals: Alcohol - IPA ¹												
Foam Concentrate	Nominal K-Factor		Sprinkler Identification Number (SIN)		Height				Listed ² Foam Design Density		Tested ³ Sprinkler Pressure	
					Min		Max					
	U.S.	Metric ⁴	Upright	Pendent	ft.	m	ft.	m	gpm/ft ²	lmp/m ²	PSI	(bar)
ARC 3x3S C6	5.6	80.6	VK100, VK108, VK300, VK301	--	5.0	1.5	20.0	6.1	0.20	8.1	13	0.89
	5.6	80.6	VK145, VK345	--	5.0	1.5	20.0	6.1	0.30	12.2	29	1.99
	5.8	80.6	--	VK102, VK110, VK302, VK303	5.0	1.5	20.0	6.1	0.30	12.2	9	1.99
	8.0	115.2	VK200, VK204, VK350, VK351	--	5.0	1.5	30.0	9.1	0.30	12.2	14	0.96
	8.0	115.2	--	VK202, VK206, VK352, VK353	6.0	1.8	30.0	9.91	0.30	12.2	14	0.96
	11.2	161.3	VK530, VK531	--	8.0	2.4	33.0	10.1	0.30	12.2	7	0.48
	11.2	161.3	--	VK377, VK536	6.0	1.8	33.0	10.1	0.30	12.2	7	0.48
	16.8	241.9	VK580	--	8.0	2.4	33.0	10.1	0.50	20.4	9	0.62
ARK (3%)	5.6	80.6	VK1001,VK3001	--	6.0	1.8	24.8	7.6	0.30	12.2	29	1.99
	5.6	80.6	--	VK1021, VK3021	6.0	1.8	24.0	7.3	0.30	12.2	29	1.99
	8.0	115.2	VK200, VK204, VK350, VK351	--	6.5	2	45	13.7	0.4	16.3	25	1.7
	8.0	115.2	--	VK2021	6	1.8	44	13.4	0.3	12.2	14	0.87
	11.2	161.3	--	VK377, VK536	6	1.8	44	13.4	0.4	16.3	13	0.89
	11.2	161.3	VK530, VK531	--	6	1.8	45	13.7	0.4	16.3	13	0.89

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FM Approvals: Ketone - Acetone ¹												
Foam Concentrate	Nominal K-Factor		Sprinkler Identification Number (SIN)		Height				Listed ² Foam Design Density		Tested ³ Sprinkler Pressure	
					Min		Max					
	U.S.	Metric ⁴	Upright	Pendent	ft.	m	ft.	m	gpm/ft ²	lmp/m ²	PSI	(bar)
ARC 3x3S C6	5.6	80.6	VK100, VK108, VK145, VK300, VK301,VK345	--	5.0	1.5	20.0	6.1	0.30	12.2	29	1.99
	5.6	80.6	--	VK102, VK110, VK302, VK303	6.0	1.8	20.0	6.1	0.30	12.2	29	1.99
ARK (3%)	5.6	80.6	VK1001, VK3001	--	6.0	1.8	24.8	7.6	0.30	12.2	13	0.89
	5.6	80.6	--	VK1021, VK3021	6.0	1.8	24.0	7.3	0.30	12.2	13	0.89
	8.0	115.2	VK200, VK204, VK350, VK351	--	6.5	2	45	13.7	0.3	12.2	14	0.97
	8.0	115.2	--	VK2021, VK2022, VK3521, VK3522	6	1.8	44	13.4	0.3	12.2	14	0.97
	11.2	161.3	VK530, VK531	--	6	1.8	45	13.7	0.3	12.2	7	0.48
	11.2	161.3	--	VK377, VK536	6	1.8	25.2	8	0.3	12.2	7	0.48

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FOAM SPRINKLERS

FM Approvals: Ethanol ¹												
Foam Concentrate	Nominal K-Factor		Sprinkler Identification Number (SIN)		Height				Listed ² Foam Design Density		Tested ³ Sprinkler Pressure	
					Min		Max					
	U.S.	Metric ⁴	Upright	Pendent	ft.	m	ft.	m	gpm/ft ²	lmp/m ²	PSI	(bar)
ARK 3%	8.0	115.2	VK200, VK204, VK350, VK351	--	6.5	2	45	13.7	0.3	12.2	14	0.97
	8.0	115.2	--	VK2021, VK3521, VK2022, VK3522	6.0	1.8	44.8	13.7	0.30	12.2	14	0.97
	11.2	161.3	VK530, VK531	--	7.7	2.3	20.6	6.3	0.30	12.2	7	0.48
	11.2	161.3	--	VK377, VK536	6.0	1.8	44.8	13.7	0.30	12.2	7	0.48

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FOAM SPRINKLERS

Hydrocarbon Fuels ¹								
Foam Concentrate	Nominal K-Factor		Sprinkler Identification Number (SIN)		Listed ² Foam Design Density		Tested ³ Sprinkler Pressure	
	U.S.	Metric ⁴	Upright	Pendent	gpm/ft ²	lmp/m ²	PSI	(bar)
AFFF 1% C6	5.6	80.6	VK100, VK108, VK300, VK301, VK315, VK316	VK102, VK110, VK122, VK302, VK303, VK317, VK318	0.16	6.5	7	0.48
	8.0	115.2	VK200, VK204, VK350, VK351	VK206, VK352, VK202, VK353	0.22	9.1	7	0.48
	11.2	161.3	VK530, VK531, VK533	VK377, VK536	0.32	13.0	7	0.48
	16.8	241.9	VK580	--	0.46	18.9	7	0.48
AFFF 3% S C6	5.6	80.6	VK100, VK108, VK300, VK301, VK315, VK316	VK102, VK110, VK122, VK302, VK303, VK317, VK318	0.16	6.5	7	0.48
	8.0	115.2	VK200, VK204, VK350, VK351	VK206, VK352, VK202, VK353	0.22	9.1	7	0.48
	11.2	161.3	VK530, VK531, VK533	VK377, VK536	0.32	13.0	7	0.48
	16.8	241.9	VK580	--	0.46	18.9	7	0.48
AFFF 3% M C6	5.6	80.6	VK100, VK108, VK300, VK301, VK315, VK316	VK102, VK110, VK122, VK302, VK303, VK317, VK318	0.19	6.5	7	0.48
ARC 3x3S C6	5.6	80.6	VK100, VK108, VK300, VK301, VK315, VK316	VK102, VK110, VK122, VK302, VK303, VK317, VK318	0.16	6.5	7	0.48
	8.0	115.2	VK200, VK204, VK350, VK351	VK206, VK352, VK202, VK353	0.22	9.1	7	0.48
	11.2	161.3	VK530, VK531, VK533	VK377, VK536	0.32	13.0	7	0.48
	16.8	241.9	VK580	--	0.46	18.9	7	0.48
USP 3%	5.6		--	VK3021	0.22	9.0	7	0.48
	8.0	115.2	--	VK2021, VK2022, VK3521, VK3522	0.22	9.0	7	0.48
	11.2	161.3	VK530, VK531, VK533	VK377, VK536	0.32	13	7	0.48

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FOAM SPRINKLERS

UL Listings: Alcohol - IPA ¹								
Foam Concentrate	Nominal K-Factor		Sprinkler Identification Number (SIN)		Listed ² Foam Design Density		Tested ³ Sprinkler Pressure	
	U.S.	Metric ⁴	Upright	Pendent	gpm/ft ²	lmp/m ²	PSI	(bar)
ARC 3x3S C6	5.6	80.6	VK100, VK108, VK300, VK301, VK315, VK316	VK102, VK110, VK122, VK302, VK303, VK317, VK318	0.22 (UP)* 0.16 (PD)*	9.0 (UP)* 6.5 (PD)*	14.5 (UP) 7 (PD)	0.99 (UP) 0.48 (PD)
	8.0	115.2	VK200, VK204, VK350, VK351	VK206, VK352, VK202, VK353	0.29	11.8	12	0.83
	11.2	161.3	VK530, VK531, VK533	VK377, VK536	0.32	13	7	0.48
	16.8	241.9	VK580	--	0.46	18.9	7	0.48

*UP=Upright, PD=Pendent

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UL Listings: Ketone - Acetone ¹								
Foam Concentrate	Nominal K-Factor		Sprinkler Identification Number (SIN)		Listed ² Foam Design Density		Tested ³ Sprinkler Pressure	
	U.S.	Metric ⁴	Upright	Pendent	gpm/ft ²	lmp/m ²	PSI	(bar)
ARC 3x3S C6	5.6	80.6	VK100, VK108, VK300, VK301, VK315, VK316	VK102, VK110, VK122, VK302, VK303, VK317, VK318	0.29	11.8	24	0.48
	8.0	115.2	VK200, VK204, VK350, VK351	VK206, VK352, VK202, VK353	0.32	13	15	0.48
	11.2	161.3	VK530, VK531, VK533	VK377, VK536	0.40	16.2	11	0.48
	16.8	241.9	VK580	--	0.46	18.9	7	0.48

¹ This table shows approvals available at the time of printing.

² Density indicated is minimum application density required per FM5130 Standard for Foam Extinguishing Systems. This density cannot be reduced.

³ The pressure indicated is the minimum starting pressure required for the sprinkler. However, the minimum density shown overrides the minimum starting pressure (depending on head spacing) and cannot be reduced.

⁴ Metric K-factor shown is for use when pressure is measured in bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.

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