

City of Puyallup Development & Permitting Services ISSUED PERMIT	
Building	Planning
Engineering	Public Works
Fire	Traffic



POWERED BY *API* Group

14690 NE 95th Street, Unit 101
Redmond, WA 98052
WA CL# WESTESF136QF

FIRE SPRINKLER
MATERIAL SUBMITTAL

APPROVALS AND SPECIFICATIONS

- ASTM A135, Grade A
- ASTM A795, Type E, Grade A
- Pressure rated to 300 psi
- Underwriters Laboratories—United States of America
- Underwriters Laboratories—Canada
- Factory Mutual
- NFPA-13
- NFPA-13R
- NFPA-14
- CIVIL DEFENSE APPROVAL—United Arab Emirates
- Made in the United States of America
- UL, ULC & FM listed for roll-groove, plain-end and welded joints for wet, dry, preaction and deluge sprinkler systems.
- LEED v4 Certified

FINISHES AND COATINGS

- Schedule 10 & 40 Sprinkler Pipe receives an OD mill coating of water-based paint which has corrosion protection expected with a painted carbon steel product, i.e. it would be expected to resist corrosion for an extended and indefinite period in a clean and dry environment and, as environmental conditions deteriorate, the corrosion protection would also diminish.
- Schedule 10 & 40 Sprinkler Pipe (black) receives an ID mill coating of Eddy Guard II MIC preventative coating. EG2 has been tested at independent laboratories to resist bacterial growth and maintain minimal bacterial count after multiple flushes (25) of the pipe.
- Schedule 10 & 40 Sprinkler Pipe when Hot Dip Galvanized by ASTM A123 and supplied by Bull Moose Tube is UL listed and FM approved.

PRODUCT IDENTIFICATION

- Every length of Bull Moose fire sprinkler pipe features large, easy-to-read, continuous stenciling, clearly identifying the manufacturer, type of pipe, size, and length.

Nominal Pipe Size (inches)		1	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"	8"
Schedule 10	O.D. (in)	1.315	1.660	1.900	2.375	2.875	3.500	4.500	6.625	8.625
	I.D. (in)	1.097	1.442	1.682	2.157	2.635	3.260	4.260	6.357	8.249
	Empty Weight (lb/ft)	1.410	1.810	2.090	2.640	3.530	4.340	5.620	9.290	16.940
	Water Filled Weight (lb/ft)	1.800	2.518	3.053	4.223	5.893	7.957	11.796	23.038	40.086
	C.R.R.*	15.27	9.91	7.76	6.27	4.92	3.54	2.50	1.158	1.805
	Pieces per Lift	91	61	61	37	30	19	19	10	7
Schedule 40	O.D. (in)	1.315	1.660	1.900	2.375	2.875	3.500	4.500		
	I.D. (in)	1.049	1.380	1.610	2.067	2.469	3.068	4.026		
	Empty Weight (lb/ft)	1.680	2.270	2.720	3.660	5.800	7.580	10.800		
	Water Filled Weight (lb/ft)	2.055	2.918	3.602	5.114	7.875	10.783	16.316		
	C.R.R.*	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
	Pieces per Lift	70	51	44	30	30	19	19		

*Calculated using Standard UL CRR formula, UL Fire Protection Directory, Category VIZY **Not Eddy Guard II treated/Not produced by BMT

SUBMITTAL INFORMATION



Project

Contractor

Engineer

Specification Reference

Date System Type

Locations

Comments

- Schedule 10 - Black
 Schedule 10 - Hot Dip Galvanized
 Schedule 40 - Black
 Schedule 40 - Hot Dip Galvanized

Building connections that last™




Ductile Iron Threaded Fittings Specifications





Ductile Iron Threaded Fittings

Specifications

-  branded fittings are UL Listed and FM Approved at **500 psi**
- Rated to 300 psi WSP
- Ductile iron castings conform to ASTM A536
- Fitting dimensions conform to ASME B16.3
- Bushings and plugs conform to ASME B16.14
- All fittings are 100% air tested
- NPT threads on all fittings conform to ASME B1.20.1
- Independent lab verification that fittings meet applicable chemical & mechanical properties
- Manufacturing facilities are ISO 9001:2008 and ISO 14001
- ProPak™ Packaging



Temperature Degrees F	Working Pressure, Non-Shock psig Class 300 Threaded Fittings
-20 to 100	500
150	500
200	480
250	460
300	440
350	420
400	400
450	380
500	360
550	340
600	320
650	300



SCI ProPak™ System

DUCTILE

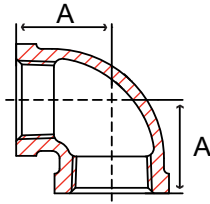


Fig. 35E 3 – 90° Elbow

Size in	Part Number	A in	Packing		Weight lb
			Inner	Master	
1/2	35E 3004	1.13	100	200	0.2
3/4	35E 3006	1.31	70	140	0.3
1	35E 3010	1.50	40	80	0.5
1-1/4	35E 3012	1.75	25	50	0.8
1-1/2	35E 3014	1.94	18	36	1.1
2	35E 3020	2.25	10	20	1.8
2-1/2	35E 3024	2.70	4	8	3.2

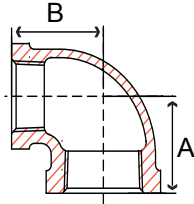


Fig. 35RE3 – 90° Reducing Elbow

Size in	Part Number	A in	B in	Packing		Weight lb
				Inner	Master	
3/4 x 1/2	35RE3006004	1.20	1.22	80	160	0.3
1 x 1/2	35RE3010004	1.26	1.36	70	140	0.4
1 x 3/4	35RE3010006	1.38	1.45	50	100	0.4
1-1/4 x 1/2	35RE3012004	1.34	1.53	35	70	0.5
1-1/4 x 3/4	35RE3012006	1.45	1.63	35	70	0.6
1-1/4 x 1	35RE3012010	1.58	1.67	30	60	0.7
1-1/2 x 1/2	35RE3014004	1.52	1.75	30	60	0.6
1-1/2 x 3/4	35RE3014006	1.52	1.75	25	50	0.7
1-1/2 x 1	35RE3014010	1.65	1.80	20	40	0.8
1-1/2 x 1-1/4	35RE3014012	1.82	1.88	18	36	1.0
2 x 1/2	35RE3020004	1.60	1.97	18	36	1.0
2 x 3/4	35RE3020006	1.60	1.97	18	36	1.0
2 x 1	35RE3020010	1.73	2.02	16	32	1.2
2 x 1-1/4	35RE3020012	1.90	2.10	12	24	1.3
2 x 1-1/2	35RE3020014	2.02	2.16	10	20	1.5
2-1/2 x 1-1/2	35RE3024014	2.16	2.51	6	12	2.2
2-1/2 x 2	35RE3024020	2.39	2.60	6	12	2.5

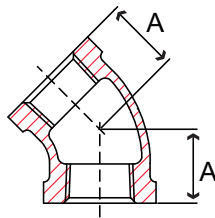


Fig. 35F 3 – 45° Elbow

Size in	Part Number	A in	Packing		Weight lb
			Inner	Master	
1/2	35F 3004	0.88	150	300	0.2
3/4	35F 3006	0.98	80	160	0.3
1	35F 3010	1.13	40	80	0.5
1-1/4	35F 3012	1.29	25	50	0.7
1-1/2	35F 3014	1.44	20	40	1.0
2	35F 3020	1.69	10	20	1.6
2-1/2	35F 3024	1.95	4	8	2.7

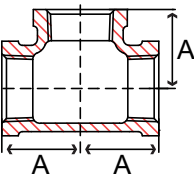


Fig. 35T 3 – Tee

Size in	Part Number	A in	Packing		Weight lb
			Inner	Master	
1/2	35T 3004	1.13	80	160	0.3
3/4	35T 3006	1.31	30	60	0.5
1	35T 3010	1.50	25	50	0.7
1-1/4	35T 3012	1.75	10	20	1.1
1-1/2	35T 3014	1.94	10	20	1.5
2	35T 3020	2.25	6	12	2.4
2-1/2	35T 3024	2.70	4	8	4.3

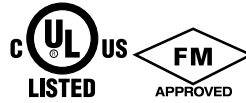
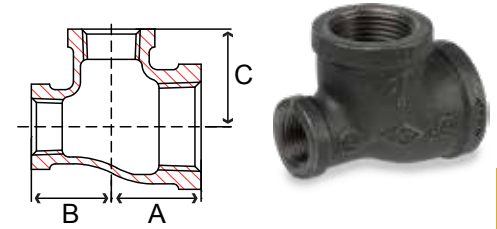


Fig. 35RT3 – Reducing Tee

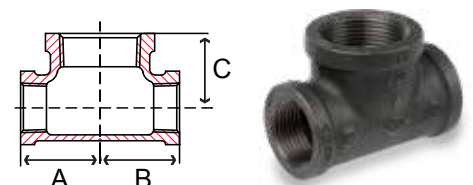
Size in	Part Number	A in	B in	C in	Packing		Weight lb
					Inner	Master	
3/4 x 1/2	35RT3006004	1.20	1.20	1.22	60	120	0.4
1 x 1/2	35RT3010004	1.26	1.26	1.36	30	60	0.6
1 x 1/2 x 1	35RT3010004010	1.50	1.36	1.50	30	60	0.6
1 x 3/4	35RT3010006	1.38	1.38	1.45	25	50	0.6
1 x 3/4 x 3/4	35RT3010006006	1.38	1.31	1.45	35	70	0.6
1 x 3/4 x 1	35RT3010006010	1.50	1.45	1.50	25	50	0.7
1-1/4 x 1/2	35RT3012004	1.34	1.34	1.53	20	40	0.8
1-1/4 x 1/2 x 1-1/4	35RT3012004012	1.75	1.53	1.75	25	50	0.9
1-1/4 x 3/4	35RT3012006	1.45	1.45	1.62	15	30	0.9
1-1/4 x 3/4 x 1-1/4	35RT3012006012	1.75	1.62	1.75	20	40	1.0
1-1/4 x 1	35RT3012010	1.58	1.58	1.67	15	30	1.0
1-1/4 x 1 x 1/2	35RT3012010004	1.34	1.26	1.53	25	50	0.7
1-1/4 x 1 x 3/4	35RT3012010006	1.45	1.38	1.63	20	40	0.8
1-1/4 x 1 x 1	35RT3012010010	1.58	1.50	1.69	20	40	0.9
1-1/4 x 1 x 1-1/4	35RT3012010012	1.75	1.69	1.75	15	30	1.0
1-1/2 x 1/2	35RT3014004	1.41	1.41	1.66	16	32	1.0
1-1/2 x 1/2 x 1-1/4	35RT3014004012	1.81	1.56	1.88	24	48	1.1
1-1/2 x 1/2 x 1-1/2	35RT3014004014	1.94	1.66	1.94	12	24	1.2
1-1/2 x 3/4	35RT3014006	1.52	1.52	1.75	16	32	1.1
1-1/2 x 3/4 x 1-1/4	35RT3014006012	1.94	1.66	1.88	20	40	1.1
1-1/2 x 3/4 x 1-1/2	35RT3014006014	1.94	1.75	1.94	18	36	1.2
1-1/2 x 1	35RT3014010	1.65	1.65	1.80	12	24	1.2
1-1/2 x 1 x 1/2	35RT3014010004	1.44	1.25	1.69	20	40	0.8
1-1/2 x 1 x 3/4	35RT3014010006	1.50	1.44	1.75	16	32	0.9
1-1/2 x 1 x 1	35RT3014010010	1.65	1.50	1.80	16	32	1.0
1-1/2 x 1 x 1-1/4	35RT3014010012	1.82	1.67	1.88	12	24	1.2
1-1/2 x 1 x 1-1/2	35RT3014010014	1.94	1.80	1.94	12	24	1.3
1-1/2 x 1-1/4	35RT3014012	1.82	1.82	1.88	12	24	1.4
1-1/2 x 1-1/4 x 1/2	35RT3014012004	1.41	1.34	1.66	16	32	0.9
1-1/2 x 1-1/4 x 3/4	35RT3014012006	1.52	1.45	1.75	16	32	1.0
1-1/2 x 1-1/4 x 1	35RT3014012010	1.65	1.58	1.80	16	32	1.1
1-1/2 x 1-1/4 x 1-1/4	35RT3014012012	1.82	1.75	1.88	14	28	1.3
1-1/2 x 1-1/4 x 1-1/2	35RT3014012014	1.94	1.88	1.94	14	28	1.4
2 x 1/2	35RT3020004	1.49	1.49	1.88	10	20	1.5
2 x 3/4	35RT3020006	1.60	1.60	1.97	10	20	1.6
2 x 1	35RT3020010	1.73	1.73	2.02	8	16	1.7
2 x 1 x 2	35RT3020010020	2.25	2.02	2.25	8	16	1.9
2 x 1-1/4	35RT3020012	1.90	1.90	2.10	8	16	1.9
2 x 1-1/4 x 2	35RT3020012020	2.25	2.10	2.25	8	16	2.0
2 x 1-1/2	35RT3020014	2.02	2.02	2.16	8	16	2.1
2 x 1-1/2 x 1/2	35RT3020014004	1.49	1.41	1.88	10	20	1.3
2 x 1-1/2 x 3/4	35RT3020014006	1.60	1.52	1.97	10	20	1.4
2 x 1-1/2 x 1	35RT3020014010	1.73	1.65	2.02	8	16	1.5
2 x 1-1/2 x 1-1/4	35RT3020014012	1.90	1.82	2.10	8	16	1.7
2 x 1-1/2 x 1-1/2	35RT3020014014	2.02	1.94	2.16	8	16	1.8



DUCTILE

Fig. 35BT3 – Bull Head Tee

Size in	Part Number	A in	B in	C in	Packing		Weight lb
					Inner	Master	
3/4 x 1	35BT3006010	1.45	1.45	1.37	30	60	0.6
1 x 1-1/4	35BT3010012	1.67	1.67	1.58	20	40	0.9
1 x 1-1/2	35BT3010014	1.80	1.80	1.65	15	30	1.0
1-1/4 x 1 x 1-1/2	35BT3012010014	1.88	1.80	1.82	15	30	1.2
1-1/4 x 1-1/2	35BT3012014	1.88	1.88	1.82	15	30	1.3
1-1/4 x 2	35BT3012020	2.10	2.10	1.90	10	20	1.6
1-1/2 x 1-1/4 x 2	35BT3014012020	2.16	2.10	2.02	10	20	1.8
1-1/2 x 2	35BT3014020	2.16	2.16	2.02	8	16	1.8



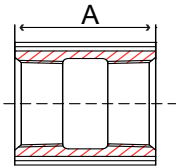


Fig. 35CP3 – Straight Coupling with Ribs

Size in	Part Number	A in	Packing		Weight lb
			Inner	Master	
1/2	35CP3004	1.38	200	400	0.1
3/4	35CP3006	1.63	100	200	0.2
1	35CP3010	1.75	60	120	0.4
1-1/4	35CP3012	2.00	35	70	0.5
1-1/2	35CP3014	2.19	25	50	0.7
2	35CP3020	2.62	15	30	1.2
2-1/2	35CP3024	3.00	9	18	2.2

DUCTILE

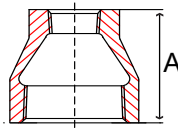


Fig. 35RC3 – Hex Reducing Coupling

Size in	Part Number	A in	Packing		Weight lb
			Inner	Master	
1 x 1/2	35RC3010004	1.69	80	160	0.3
1 x 3/4	35RC3010006	1.69	60	120	0.4
1-1/4 x 3/4	35RC3012006	2.06	40	80	0.6
2 x 1 (not hex)	35RC3020010	2.81	20	40	1.0

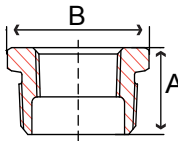


Fig. 35HB3 – Hex Bushing

Size in	Part Number	A in	B in	Packing		Weight lb
				Inner	Master	
1 x 1/2	35HB3010004	1.06	1.40	180	360	0.2
1 x 3/4	35HB3010006	1.06	1.40	180	360	0.1
1-1/4 x 1	35HB3012010	1.19	1.80	90	180	0.2
1-1/2 x 1	35HB3014010	1.25	1.95	75	150	0.4
1-1/2 x 1-1/4	35HB3014012	1.25	1.95	75	150	0.3
2 x 1	35HB3020010	1.38	2.55	40	80	0.6
2 x 1-1/4	35HB3020012	1.38	2.55	40	80	0.6
2 x 1-1/2	35HB3020014	1.38	2.55	40	80	0.6

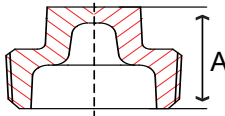


Fig. 35SP3 – Square Head Plug

Size in	Part Number	A in	Packing		Weight lb
			Inner	Master	
1/2	35SP3004	0.94	600	1200	0.07
3/4	35SP3006	1.12	350	700	0.1
1	35SP3010	1.25	200	400	0.1
1-1/4	35SP3012	1.37	100	200	0.3
1-1/2	35SP3014	1.44	80	160	0.4
2	35SP3020	1.50	45	90	0.6

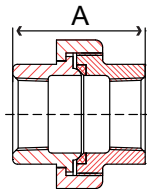


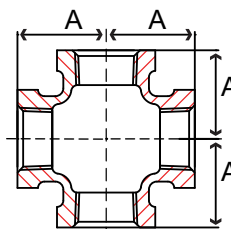
Fig. 35U 3 – Union with Brass Seat

Size in	Part Number	A in	Packing		Weight lb
			Inner	Master	
1	35U 3010	2.19	20	40	1.0
1-1/4	35U 3012	2.50	15	30	1.2
1-1/2	35U 3014	2.62	10	20	1.7
2	35U 3020	3.12	6	12	2.4



Fig. 35X 3 – Cross

Size in	Part Number	A in	Packing		Weight lb
			Inner	Master	
1	35X 3010	1.50	20	40	0.9
1-1/4	35X 3012	1.75	12	24	1.4
1-1/2	35X 3014	1.94	8	16	1.8
2	35X 3020	2.25	6	12	2.8



DUCTILE

Fig. 35RX3 – Reducing Cross

Size in	Part Number	A in	B in	Packing		Weight lb
				Inner	Master	
1-1/4 x 1	35RX3012010	1.67	1.58	15	30	1.2
1-1/2 x 1	35RX3014010	1.80	1.65	12	24	1.4
2 x 1	35RX3020010	2.02	1.73	8	16	2.0

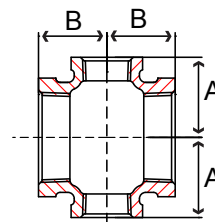


Fig. 35C 3 – Cap

Size in	Part Number	A in	Packing		Weight lb
			Inner	Master	
1/2	35C 3004	0.87	300	600	0.1
3/4	35C 3006	0.97	200	400	0.1
1	35C 3010	1.16	110	220	0.2
1-1/4	35C 3012	1.28	70	140	0.4
1-1/2	35C 3014	1.33	50	100	0.5
2	35C 3020	1.45	25	50	0.8
2-1/2	35C 3024	1.70	18	36	1.6

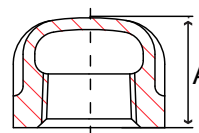
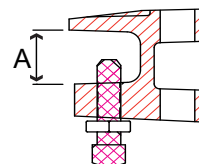


Fig. 35BC3 – Beam Clamp

Size in	Part Number	A in	Packing		Weight lb
			Inner	Master	
3/8	35BC3003	0.75	100	200	0.3
1/2	35BC3004	0.75	80	160	0.5



FireLock™ Outlet-T

Style 922



1.0 PRODUCT DESCRIPTION

Available Sizes

- 1 ¼ – 2 ½"/DN32 – DN65
- **Threaded Outlet Sizes:** ½"/DN15, ¾"/DN20, and 1"/DN25

NOTE

- IGS Grooved 1"/DN25 Outlets available for this product. See [publication 10.54](#).

Maximum Working Pressure

- 300 psi/2068 kPa/21 Bar

Application

- Provides a convenient method of incorporating outlets for directly connecting sprinklers, drop nipples, sprigs, gauges, drains and other outlet products

Pipe Material

- Carbon steel
- Contact Victaulic for use on additional pipe types and wall thicknesses

2.0 CERTIFICATION/LISTINGS



LPS 1186:
Issue 3.1
Cert/LPCB Ref.
491a/27

EN 10311
CPR (EU)
No. 305/2011

BS EN 10311
CPR (UK)
2019 No. 465

NOTES

- See Section 7.2 REFERENCE MATERIALS for additional certification information.

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

3.0 SPECIFICATIONS - MATERIAL

Housing: Ductile iron conforming to ASTM A536, Grade 65-45-12. Ductile iron conforming to ASTM A395, Grade 65-45-15, is available upon special request.

Housing Coating: (specify choice)

Orange coating.

Red coating (standard for EMEA-I and Asia Pacific).

Optional: Contact Victaulic with your requirements for other coatings.

Optional: Hot dipped galvanized.

Gasket¹:

Grade "E" EPDM (Type A)

EPDM (Violet color code) Applicable for wet and dry (oil-free air) sprinkler services only. Listed/Approved for continuous use in wet and dry systems. Listed/Approved for dry systems at -40°F/-40°C and above. NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES.

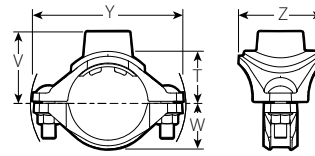
¹ Services listed are General Service Guidelines only. It should be noted that there are services for which these gaskets are not compatible. Reference should always be made to the latest [Victaulic Seal Selection Guide](#) for specific gasket service guidelines and for a listing of services which are not compatible.

Bolts/Nuts:

Standard: Carbon steel oval neck track bolts meeting the mechanical property requirements of ASTM A449 (imperial) and ISO 898-1 Class 9.8 (metric). Carbon steel hex flange nuts meeting the mechanical property requirements of ASTM A563 Grade B (imperial – hex nuts) and ASTM A563M Class 9 (metric – hex nuts). Track bolts and hex flange nuts are zinc electroplated per ASTM B633 Fe/Zn 5, finish Type III (imperial) or Type II (metric).

4.0 DIMENSIONS

Style 922



Style 922

Size		Bolt/Nut		Dimensions					Weight
Nominal Run x Branch FPT ² inches DN	Actual Outside Diameter inches mm	Qty.	Size inches mm	T ³ inches mm	V inches mm	W inches mm	Y inches mm	Z inches mm	Approximate (Each) lb kg
1 ¼ DN32	x ½ DN15	2	¾ x 1 ¾	1.30	1.83	1.10	3.87	2.56	1
				33	47	28	98	65	0.5
				1.050	1.83	1.10	3.87	2.56	1
DN20	¾	2	¾ x 1 ¾	1.28	1.83	1.10	3.87	2.56	1
				33	47	28	98	65	0.5
				1.315	2.18	1.10	3.87	2.56	1
DN25	1	2	¾ x 1 ¾	1.52	2.18	1.10	3.87	2.56	1
				39	55	28	98	65	0.5
				1.900	1.95	1.22	4.08	2.56	1
1 ½ 40	x ½ DN15	2	¾ x 1 ¾	1.42	1.95	1.22	4.08	2.56	1
				36	50	31	104	65	0.5
				1.050	1.95	1.22	4.08	2.56	1
DN20	¾	2	¾ x 1 ¾	1.40	1.95	1.22	4.08	2.56	1
				36	50	31	104	65	0.5
				1.315	2.30	1.22	4.08	2.56	1
DN25	1	2	¾ x 1 ¾	1.64	2.30	1.22	4.08	2.56	1
				42	58	31	104	65	0.6
				2.375	2.19	1.46	4.60	2.56	1
2 50	x ½ DN15	2	¾ x 1 ¾	1.66	2.19	1.46	4.60	2.56	1
				42	56	37	117	65	0.6
				1.050	2.19	1.46	4.60	2.56	1
DN20	¾	2	¾ x 1 ¾	1.64	2.19	1.46	4.60	2.56	1
				42	56	37	117	65	0.6
				1.315	2.54	1.46	4.60	2.56	2
DN25	1	2	¾ x 1 ¾	1.88	2.54	1.46	4.60	2.56	2
				48	65	37	117	65	0.7
				2.875	2.44	1.71	5.40	2.56	2
2 ½	x ½ DN15	2	¾ x 1 ¾	1.91	2.44	1.71	5.40	2.56	2
				49	62	43	137	65	0.7
				1.050	2.44	1.71	5.40	2.56	2
DN20	¾	2	¾ x 1 ¾	1.89	2.44	1.71	5.40	2.56	2
				48	62	43	137	65	0.7
				1.315	2.79	1.71	5.40	2.56	2
DN25	1	2	¾ x 1 ¾	2.13	2.79	1.71	5.40	2.56	2
				54	71	43	137	65	0.7
				3.000	2.44	1.71	5.50	2.56	2
DN65	x ½ DN15	2	¾ x 1 ¾	1.91	2.44	1.71	5.50	2.56	2
				49	62	43	140	65	0.7
				1.050	2.44	1.71	5.50	2.56	2
DN20	¾	2	¾ x 1 ¾	1.89	2.44	1.71	5.50	2.56	2
				48	62	43	140	65	0.7
				1.315	2.79	1.71	5.50	2.56	2
DN25	1	2	¾ x 1 ¾	2.13	2.79	1.71	5.50	2.56	2
				54	71	43	140	65	0.8

² Victaulic female threaded products are designed to accommodate standard NPT or BSPT (optional) male pipe threads only. Refer to the specific literature for these types of special male-threaded products for guidance and possible limitations for use. Failure to verify suitability in advance may result in assembly problems or leakage.

³ Center of run to engaged pipe end for NPT threads (dimensions are approximate).

5.0 PERFORMANCE

Style 922







Run Size x Outlet Size inches DN	Equivalent Length of 1 inch Schedule 40 Steel Pipe (per UL 213, Section 16) (C=120) ⁴	
	Threaded feet meters	Grooved ⁵ feet meters
1 ¼ x 1 DN32 x DN25	8.5 2.6	12.5 3.8
1 ½ x 1 DN40 x DN25	8.5 2.6	12.5 3.8
2 x 1 DN50 x DN25	8.5 2.6	12.5 3.8
2 ½ x 1 DN65 x DN25	8.5 2.6	12.5 3.8

⁴ Hazen-Williams coefficient of friction is 120.

⁵ 1" FireLock™ Innovative Groove System (IGS) outlet

6.0 NOTIFICATIONS

WARNING

- Read and understand all instructions before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Depressurize and drain the piping system before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Wear safety glasses, hardhat, and foot protection.

Failure to follow these instructions could result in death or serious personal injury and property damage.

7.0 REFERENCE MATERIALS

	Dimensions	
	Minimum Hole Diameter/ Hole Saw Size	Maximum Hole Diameter/ Hole Saw Size
	inches mm	inches mm
All Outlet Sizes	1 ¾ 30	1 ¼ 32

7.1 REFERENCE MATERIALS

Size Nominal inches DN	Services Pressures per Regulatory Approvals and Listings ⁶					
	UL psi kPa	ULC psi kPa	FM psi kPa	VdS psi kPa	LPCB psi kPa	CNBOP psi kPa
1 ¼ x ½ DN32 X DN15	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
1 ¼ x ¾ DN32 X DN20	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
1 ¼ x 1 DN32 X DN25	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
1 ½ x ½ DN40 X DN15	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
1 ½ x ¾ DN40 X DN20	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
1 ½ x 1 DN40 X DN25	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
2 x ½ DN50 X DN15	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
2 x ¾ DN50 X 20	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
2 x 1 DN50 X DN25	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
2 ½ x ½	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
2 ½ x ¾	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
2 ½ x 1	300 2068	300 2068	300 2068	232 1600	232 1600	232 1600
DN65 X DN15	–	–	300 2068	232 1600	232 1600	232 1600
DN65 X DN20	–	–	300 2068	232 1600	232 1600	232 1600
DN65 X DN25	–	–	300 2068	232 1600	232 1600	232 1600

⁶ Pressures listed in this chart are based upon standard wall pipe. Approved and Listed pressures may vary by pipe schedule.

NOTE

- Consult regulatory agency websites for details and the most recent regulatory information.

7.2 REFERENCE MATERIALS

[05.01: Victaulic Seal Selection Guide](#)

[29.01: Victaulic Terms and Conditions of Sale](#)

[I-100: Installation Instructions](#)

[I-922: Installation Instructions FireLock™ Outlet-T](#)

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, and the applicable building codes and related regulations as well as Victaulic performance, maintenance, safety, and warning instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, installation guide, or this disclaimer.

Intellectual Property Rights

No statement contained herein concerning a possible or suggested use of any material, product, service, or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of Victaulic or any of its subsidiaries or affiliates covering such use or design, or as a recommendation for the use of such material, product, service, or design in the infringement of any patent or other intellectual property right. The terms "Patented" or "Patent Pending" refer to design or utility patents or patent applications for articles and/or methods of use in the United States and/or other countries.

Note

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

Installation

Reference should always be made to the Victaulic installation handbook or installation instructions of the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on WeChat.

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

Trademarks

Victaulic and all other Victaulic marks are the trademarks or registered trademarks of Victaulic Company, and/or its affiliated entities, in the U.S. and/or other countries.



TECHNICAL DATA SHEET

VK3001 Quick Response Upright Sprinkler K5.6 (80.6)

1. PRODUCT IDENTIFICATION

This document covers the following product, hereafter referred to as “sprinkler”:

VK3001: Quick Response, Standard Coverage, Upright, K5.6 (80.6) Sprinkler.

2. INTENDED USE

The sprinkler is intended to be used in automatic fire sprinkler systems as allowed by applicable approval authorities. The sprinkler must be used in accordance with:

1. the sprinkler’s Listings, Approvals, and associated design requirements.
2. the recognized design and installations standards issued, for example NFPA, FM, EN, VdS, or LPCB.
3. the latest revisions of all applicable manufacturer’s documentation.



Governmental codes, ordinances, and standards may apply and may differ from one another.

WARNING

Cancer and Reproductive Harm www.P65Warnings.ca.gov

3. LISTING AND APPROVALS

Refer to section 5 for details and requirements that must be followed.



cULus Listed



VdS Approved



FM Approved



UKCA Approved



CE



MED Approved



LPCB Approved

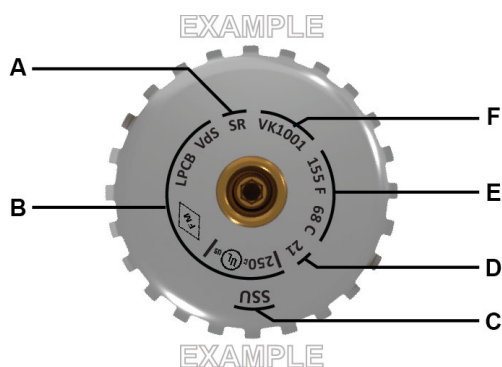
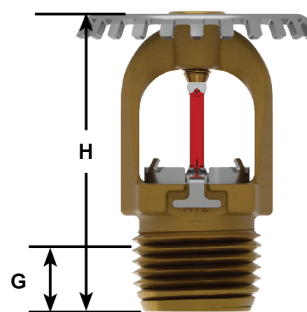

TECHNICAL DATA SHEET
**VK3001 Quick Response
Upright Sprinkler K5.6 (80.6)**
4. TECHNICAL SPECIFICATIONS
4.1 Definitions

Standard Upright Sprinkler: A sprinkler intended to be oriented with the deflector above the frame so water flows upward through the orifice, striking the deflector and forming an umbrella-shaped spray pattern downward. These sprinklers are marked “SSU” (Standard Spray Upright) or “UPRIGHT” on the deflector.

Corrosion Resistant Sprinkler: A special service sprinkler with non-corrosive protective coatings, or that is fabricated from non-corrosive material, for use in atmospheres that would normally corrode sprinklers. Sprinklers can be ordered as corrosion resistant sprinklers and can be used with escutcheons when allowed by the approval body.

4.2 Ratings and Physical Characteristics

Parameter	Value
Minimum operating pressure	7 psi (0.5 bar)
Maximum rated pressure	UL: 250 psi (17 bar) FM and CE: 175 psi (12 bar)
Factory tested pressure	500 psi (35 bar)
Thread size	1/2" NPT or 15 mm BSPT
Nominal K-factor	5.6 U.S. (80.6)
Minimum temperature rating (glass bulb)	-65 °F (-55 °C)

4.3 Markings and Dimensions

Figure – 1: Markings

Figure – 2: Dimensions

Ref	Description	Value
A	Response type	QR: Quick Response
B	Listings and Approvals	See sections 3 and 5
C	Sprinkler type	SSU: Standard Spray Upright
D	Manufacture date (year)	See marking
E	Nominal temperature rating	See marking
F	Manufacturers Sprinkler Identification Number (SIN)	VK3001
G	Nominal pipe engagement	7/16" (11 mm)
H	Height	1-15/16" (49 mm)

4.4 Materials of Construction

NOTICE: Do not disassemble the sprinkler.

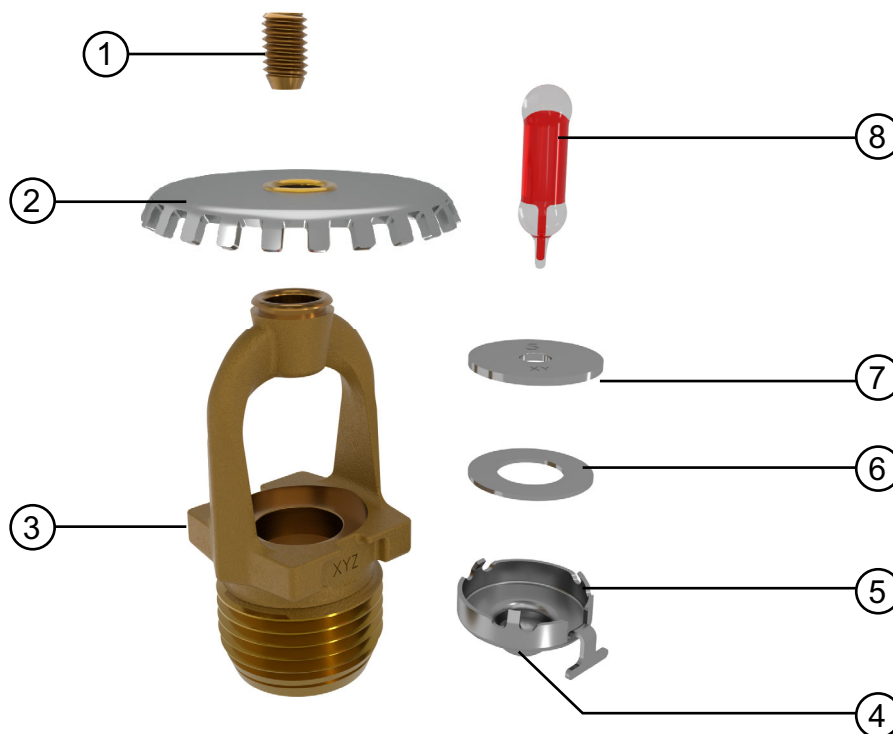


Figure – 3 Sprinkler Components

Ref	Description	Material
1	Compression screw	Brass CW612N, CW508L, UNS-C36000 or UNS-C26000
2	Deflector	Stainless steel UNS S30400
3	Sprinkler body	CW602N, UNS-C84400 or QM brass
4	Pip cap seal	Polytetrafluoroethylene (PTFE)
5	Pip cap shell	Stainless steel UNS-S44400
6	Belleville spring	Nickel alloy
7	Pip cap disc	Stainless steel UNS-S30100
8	Bulb	Glass, nominal 0.10" (3 mm) diameter


TECHNICAL DATA SHEET
**VK3001 Quick Response
Upright Sprinkler K5.6 (80.6)**
5. LISTING AND APPROVAL DESIGN REQUIREMENTS
5.1 Listing and Approval Specifications

Sprinkler Base Part Number ¹	Thread Size		Approval Body				
	NPT	BSPT	cULus		FM		
			Approval Specification	Maximum working water pressure	Approval Specification	Maximum working water pressure	
23869	1/2"	—	A1	250 psi (17 bar)	A1	175 psi (12 bar)	
23881	—	15 mm	A1	250 psi (17 bar)	A1	175 psi (12 bar)	
Additional Listings and Approvals Maximum WWP 175 psi (12 bar)							
			CE	LPCB	VdS	UKCA	MED
23869	1/2"	—	A1	A1	A1	A1	A1
23881	—	15 mm	A1	A1	A1	A1	A1
Approval Specification (Temperature Ratings) Key: A = 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C) and 286 °F (141 °C)							
Approval Specification (Finishes) Key: 1 = Brass, Chrome, White Polyester ^{2,3} , Black Polyester ^{2,3} , and ENT ^{3,4}							
1 For complete part number, refer to Viking's current price list. 2 For White Polyester and Black Polyester, other colors are available upon request and will carry the same Listings and Approvals as the standard colors. 3 cULus Listed as corrosion resistant. 4 FM Approved as corrosion resistant.							

5.2 cULus Listing Requirements and Details

The sprinkler is cULus Listed as indicated in Table 5.1 for installation in accordance with the latest edition of NFPA 13 for standard spray sprinklers. This sprinkler is designed for use in light and ordinary hazard occupancies.

5.3 FM Approval Requirements and Details

The sprinkler is FM Approved as quick response Non-Storage upright sprinkler as indicated in the FM Approval Guide. The sprinkler is also approved for use in FM Approved vacuum dry sprinkler systems with a maximum supervisory vacuum pressure of -3 psi (-207 mbar). FM Global Loss Prevention Data Sheets contain guidelines relating to, but not limited to: minimum water supply requirements, hydraulic design, ceiling slope and obstructions, minimum and maximum allowable spacing, and deflector distance below the ceiling. For specific application and installation requirements, refer to the latest applicable FM Loss Prevention Data Sheets (including Data Sheet 2-0).



5.4 Additional Approval Requirements and Details

Refer to Table 5.1 for approved configurations allowed by each of the following approvals.

- CE CPR: Standard EN 12259-1:1999 +A3:2006; Declaration of Performance DOP_XT1A.
- LPCB: Standard EN 12259-1:1999 +A3:2006; Certificate Number 096m.
- VdS: Standard EN 12259-1:1999 +A3:2006; Certificate Number G 422005.
- UKCA: Standard EN12259-1:1999 +A3:2006; Declaration of Conformity UKCA DOC_S5048.
- MED: Standard EN 12259-1:1999 +A3:2006; Declaration of Conformity DOC_MED_XT1.

5.5 Corrosion Resistant Coatings

The corrosion resistant coatings have passed the standard corrosion tests required by the approving agencies and are listed and approved as indicated in Table 5.1. These tests do not represent all possible corrosive environments. The Electro-less Nickel PTFE (ENT) finish passed the UL 199 thirty day corrosion test and is cULus listed and FM Approved as corrosion resistant. For automatic sprinklers, the ENT coating is applied to all exposed exterior surfaces, including the waterway.

Prior to installation, verify that the coatings are compatible with, or suitable for, the proposed environment. The ENT finish has not been evaluated for environments containing chlorine, such as indoor swimming pools. It is not recommended for these applications.

5.6 Sprinkler Guards and Water Shields

The sprinkler is approved for use with the Model XG Sprinkler Guard and the Model XWU upright water shield. Refer to the Guards and Water Shields for XT1 Sprinklers technical data sheet for more information.

5.7 Available Temperature Ratings

Viking sprinklers are available in several temperature ratings that relate to a specific temperature classification. Applicable installation rules mandate the use and limitations of each temperature classification. In selecting the appropriate temperature classification, the maximum expected ceiling temperature must be known. When there is doubt as to the maximum temperature at the sprinkler location, a maximum-reading thermometer should be used to determine the temperature under conditions that would show the highest readings to be expected. In addition, recognized installation rules may require a higher temperature classification, depending upon sprinkler location, occupancy classification, commodity classification, storage height, and other hazards. In all cases, the maximum expected ceiling temperature dictates the lowest allowable temperature classification. Sprinklers located immediately adjacent to a heat source may require a higher temperature rating.


TECHNICAL DATA SHEET
VK3001 Quick Response Upright Sprinkler K5.6 (80.6)
6. ORDERING PROCEDURE
6.1 Sprinkler

1. Choose a sprinkler base part number with the required thread size and listing or approval (refer to section 5):
2. Add the suffix for the desired finish.
3. Add the suffix for the desired temperature rating.

NOTE: For Polyester, insert the desired temperature rating suffix where the dash (–) is shown.

EXAMPLE: 23869MB/W = VK3001 with white polyester finish and 155 °F (68 °C) nominal temperature rating. This sprinkler is to be installed into an area with a maximum ambient temperature of 100 °F (38 °C).

1. Sprinkler Base Part Number		2. Finish		3. Temperature Rating			
See Section 5		Description	Suffix	Nominal Temperature Rating	Bulb Color	Maximum Ambient Ceiling Temperature	Suffix
23869	1/2" NPT	Brass	A	135 °F (57 °C)	Orange	100 °F (38 °C)	A
23881	15 mm BSPT	Chrome	F	155 °F (68 °C)	Red	100 °F (38 °C)	B
		White Polyester	M–/W	175 °F (79 °C)	Yellow	150 °F (65 °C)	D
		Black Polyester	M–/B	200 °F (93 °C)	Green	150 °F (65 °C)	E
		ENT	JN	286 °F (141 °C)	Blue	225 °F (107 °C)	G
				OPEN	—	—	Z

6.2 Sprinkler Accessories


Figure – 4: Sprinkler Accessories

Ref.	Part Number	Description
1)	23559MB	Straight wrench: required for proper installation
2)	01724A	Sprinkler cabinet: holds up to 6 sprinklers
3)	01725A	Sprinkler cabinet: holds up to 12 sprinklers (not shown)


TECHNICAL DATA SHEET
**VK3001 Quick Response
Upright Sprinkler K5.6 (80.6)**
7. CONTACT

The sprinkler and accessories are available through Viking distributors only. Contact your local Viking sales office which can be found on our website:

Americas and Asia: www.vikinggroupinc.com/locations OR Europe, Middle East, Africa (EMEA): www.viking-emea.com/contact

Manufacturer:

The Viking Corporation
5150 Beltway SE
Caledonia, MI 49316
Tel.: (800) 968-9501
Fax: 269-818-1680
Technical Services: 1-877-384-5464
techsvcs@vikingcorp.com

Importer EU:

Viking S.A.
21, Z.I, Haneboesch
L-4562 Differdange / Niederkorn
Tel.: +352 58 37 37 – 1
Fax: +352 58 37 36
vikinglux@viking-emea.com

Asia Pacific (APAC) Main Office:

The Viking Corporation (Far East) Pte. Ltd.
69 Tuas View Square
Westlink Techpark, Singapore 637621
Tel: (+65) 6 278 4061
Fax: (+65) 6 278 4609
vikingAPAC@vikingcorp.com



Handling and Installation Instructions

Model XT-1 Upright Sprinklers

bg	Инсталирайте и пуснете продукта в експлоатация само ако следната инструкция е ясно разбрана.	lv	Produkta iemontēšanu un ekspluatācijas sākšanu veikt tikai tad, ja dotā instrukcija ir pilnībā saprasta.
cs	Namontujte a spusťte do provozu produkt pouze tehdy, když jste jasně pochopili tento návod.	lt	Produktą montuokite ir pradėkite eksploatuoti tik tuomet, jei aiškiai suprantate šią instrukciją.
de	Du må kun montere og idriftsætte produktet, hvis du har forstået følgende vejledning til fulde.	mt	Installa u f'ad dem il-prodott biss jekk l-istruzzjonijiet li ġejjin jinftiehm u b'mod ċar.
de	Produkt nur einbauen und in Betrieb nehmen, wenn die nachfolgende Anleitung klar verstanden wird.	nl	Product alleen installeren en in gebruik nemen, als de volgende instructies begrepen zijn.
el	Η εγκατάσταση και θέση σε λειτουργία του προϊόντος επιτρέπονται μόνο εάν οι ακόλουθες οδηγίες έχουν γίνει κατανοητές.	no	Ikke installer og ta i bruk produktet uten at følgende anvisninger er tydelig forstått.
en	Do not install and commission the product unless you have clearly understood the instructions below.	pl	Produkt należy montować i uruchamiać tylko wtedy, gdy poniższe instrukcje są w pełni zrozumiałe.
es	Instalar el producto y ponerlo en funcionamiento solo cuando se hayan comprendido claramente las siguientes instrucciones.	pt	Instalar e colocar o produto em funcionamento somente se as instruções a seguir forem claramente compreendidas.
et	Paigaldage toode ja kasutage seda ainult siis, kui saate alljärgnevast juhendist selgelt aru.	ro	Montați produsul și puneți-l în funcțiune numai dacă instrucțiunea următoare este înțeleasă clar.
fi	Tuotteen saa asentaa ja ottaa käyttöön vain, jos jäljempänä oleva ohje ymmärretään selvästi.	ru	Не устанавливайте и не принимайте оборудование в эксплуатацию, если вы четко не поняли инструкции ниже
fr	N'installer et ne mettre en service le produit que si les instructions suivantes ont été clairement comprises.	sk	Namontujte a spusťte do prevádzky výrobok iba vtedy, pokiaľ ste jasne pochopili tento návod.
ga	Ná déan an táirge a shuiteail agus a choimisiunu mura dtuigeann tu na teoracha thíos go soileir.	sl	Izdelek vgradite in zaženite samo, če ste dobro razumeli navodila v nadaljevanju.
hr	Ne instalirajte i ne puštajte proizvod u rad ako niste jasno razumjeli donje upute.	sr	Не инсталирајте и не пуштајте производ у рад ако нисте јасно разумели упутства у наставку.
hu	Csak akkor építse be a terméket és helyezze üzembe, ha a következő útmutatót egyértelműen megértette.	sv	Montera och driftsätt produkten endast om du förstår den efterföljande instruktionen.
is	Settu ekki upp eða taktu vöruna í notkun nema þú hafir skilið greinilega leiðbeiningarnar hér að neðan.	tr	Aşağıdaki talimatları açıkça anlamadan ürünü kurmayın ve devreye almayın.
it	Montare il prodotto e metterlo in funzione solo se si sono comprese appieno le seguenti istruzioni.		

1. PRODUCT IDENTIFICATION

This document covers the following products, hereafter referred to as “sprinkler”:

- VK1001 Standard Response Upright Sprinkler K5.6 (80.6)
- VK2001 Standard Response Upright Sprinkler K8.0 (115)
- VK2002 Standard Response Upright Sprinkler K8.0 (115)
- VK3001 Quick Response Upright Sprinkler K5.6 (80.6)
- VK3501 Quick Response Upright Sprinkler K8.0 (115)
- VK3502 Quick Response Upright Sprinkler K8.0 (115)
- OTHER APPLICABLE DOCUMENTS

2. OTHER APPLICABLE DOCUMENTS

For intended use and relevant conditions for the safe use of the specific sprinkler refer to the appropriate *Technical Data Sheet*.



3. TRANSPORT AND HANDLING

WARNING

A damaged or compromised sprinkler poses the risk of fatal consequences.

Damaged or compromised sprinklers will not operate properly which could lead to loss of life.

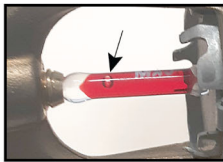
- NEVER use a sprinkler that has been exposed to temperatures exceeding the maximum allowed ambient temperature.
- NEVER use a sprinkler with a loss of liquid from the glass bulb or damage to the fusible element. A small bubble should be visible within the glass bulb; rotate the sprinkler to a horizontal position while observing the bulb to see the bubble.
- NEVER use a sprinkler that has been dropped or damaged.
- ALWAYS Protect the sprinkler from mechanical damage during storage, transport, and handling.
- NEVER use sprinklers that have been painted by anyone other than the manufacturer.
- ALWAYS protect sprinklers from being painted during installation or replacement in accordance with the installation standards.
- NEVER clean sprinklers with anything other than 7 psi or lower compressed air.
- NEVER apply soap, water, ammonia, adhesives, solvents or any other fluids on sprinklers.
- Destroy every damaged or compromised sprinkler.

NOTICE

Protect sprinklers during transport and handling.

- ALWAYS handle the sprinkler with care.
- ALWAYS keep the protective cap on the sprinkler during transport and handling.
- NEVER remove the protective cap until the fire sprinkler system is placed in service and the potential for mechanical damage no longer exists.
- ALWAYS protect the sprinkler from direct sunlight during transport and handling.
- ALWAYS store sprinkler in a cool, dry, protected area.
- ALWAYS use original manufacturer's shipping containers.
- NEVER store a sprinkler loose in a box, bin, bucket, or other type of container.
- ALWAYS keep the sprinkler separated from other sprinklers.
- NEVER allow metal parts to contact the sprinkler operating elements.

NOTE: If the glass bulb included on the sprinkler has been exposed to ultraviolet light, the color inside the bulb may fade. This color change does not affect the operation of the sprinkler.



CORRECT
(Bulb intact, bubble visible)



INCORRECT
(bulb cracked, fluid missing)



CORRECT
(Protective caps in place)



INCORRECT
(Protective caps not in place)



CORRECT
Container



INCORRECT
(Stored loose in a box)



4. INSTALLATION

⚠ WARNING

Installation by insufficiently qualified personnel poses the risk of fatal consequences.

- This sprinkler must be installed properly by qualified personnel familiar with safe practices and applicable and recognized design and installation standards issued, for example, by NFPA, FM, VdS, or LPCB, and trained how to properly perform the installation procedures.

⚠ CAUTION

Cutting Hazard.

Sprinklers, accessories, cabinets, and packaging can have sharp edges that can cause cuts.

- Wear appropriate personal protective equipment (gloves) while handling product.

Optional Guards, Shields, and Escutcheons: If the sprinkler shall be installed together with a guard, shield, or escutcheon refer to the applicable documents for the products used.

1. Install all required piping in the intended installation location.
2. Verify that the sprinkler model/style, K-factor, temperature rating, and response characteristics are appropriate for the intended installation location. See Table 1 and Figure 4.
3. Inspect the sprinkler for damage. Destroy every damaged or compromised sprinkler. The following are examples in which sprinklers are considered damaged or compromised. Replace the sprinkler in the following cases:
 - Sprinkler with a loss of fluid from the glass bulb or damage to the fusible element.
 - Sprinklers that have been field painted, caulked, or mechanically damaged.
 - Sprinklers showing signs of corrosion.
4. Verify that the sprinkler is protected with the protective cap or clip.
5. Apply a small amount of pipe-joint compound or tape to the external threads of the sprinkler only. Do not allow a build-up of compound inside the sprinkler inlet (Figure 1).

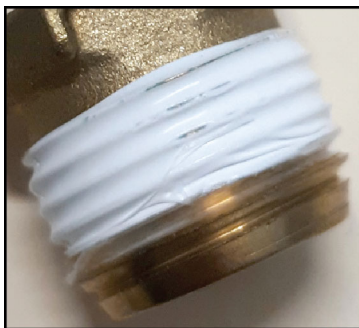



Figure – 1

	Handling and Installation Instructions	Model XT-1 Upright Sprinklers
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6. **NOTICE: Do not use the deflector to start threading the sprinkler into a fitting. Use ONLY the approved wrench to install the sprinkler. Refer to the sprinkler’s *Technical Data Sheet*.**

Carefully slide the proper wrench onto the wrench flats (Figure 2).

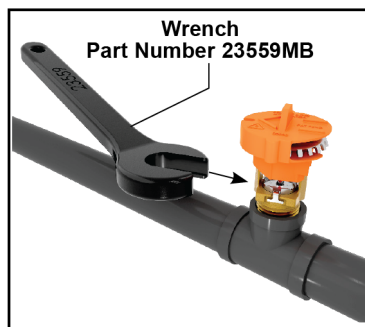


Figure – 2

7. **NOTICE: Over-tightening the sprinkler can cause permanent damage. For 1/2" NPT (or 15 mm BSPT) sprinkler, tighten up to a maximum torque of 14 ft-lbs (19 Nm). For 3/4" NPT (or 20 mm BSPT) sprinkler, tighten up to a maximum of 20 ft-lbs (27,1 Nm).**

Tighten the sprinkler as necessary (Figure 3). If applicable, install a sprinkler guard and water shield.

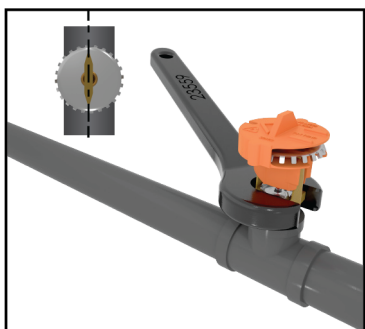


Figure – 3

8. **NOTICE: Sprinkler protective caps/clips must be removed from the sprinkler before placing the system in service. Test the entire sprinkler system.**

Refer to the applicable system documentation, regulations, and standards to ensure compliance.

Table 1: Sprinkler Markings	
Ref	Parameter
A	Response type
B	Listings and approvals
C	Sprinkler type
D	Manufacture date
E	Nominal temperature rating
F	Manufacturer’s Sprinkler Identification Number (SIN)

EXAMPLE
Figure – 4



Handling and Installation Instructions

Model XT-1 Upright Sprinklers

5. CONTACT

The sprinkler and accessories are available through Viking distributors only. Contact your local Viking sales office which can be found on our website:

Americas and Asia: www.vikinggroupinc.com/locations OR Europe, Middle East, Africa (EMEA): www.viking-emea.com/contact

Manufacturer:

The Viking Corporation
5150 Beltway SE
Caledonia, MI 49316
Tel.: (800) 968-9501
Fax: 269-818-1680
Technical Services: 1-877-384-5464
techsvcs@vikingcorp.com

Importer EU:

Viking S.A.
21, Z.I, Haneboesch
L-4562 Differdange / Niederkorn
Tel.: +352 58 37 37 – 1
Fax: +352 58 37 36
vikinglux@viking-emea.com

Asia Pacific (APAC) Main Office:

The Viking Corporation (Far East) Pte. Ltd.
69 Tuas View Square
Westlink Techpark, Singapore 637621
Tel: (+65) 6 278 4061
Fax: (+65) 6 278 4609
vikingAPAC@vikingcorp.com



1. PRODUCT IDENTIFICATION

This document covers the following product, hereafter referred to as “sprinkler” (SR=Standard Response, QR=Quick Response):

- VK1001 SR Upright Sprinkler K5.6 (80.6)
- VK2001 SR Upright Sprinkler K8.0 (115)
- VK2002 SR Upright Sprinkler K8.0 (115)
- VK3001 QR Upright Sprinkler K5.6 (80.6)
- VK3501 QR Upright Sprinkler K8.0 (115)
- VK3502 QR Upright Sprinkler K8.0 (115)
- VK1021 SR Pendent Sprinkler K5.6 (80.6)
- VK2021 SR Pendent Sprinkler K8.0 (115)
- VK2022 SR Pendent Sprinkler K8.0 (115)
- VK3021 QR Pendent Sprinkler K5.6 (80.6)
- VK3521 QR Pendent Sprinkler K8.0 (115)
- VK3522 QR Pendent Sprinkler K8.0 (115)
- VK1181 SR Conventional Sprinkler K5.6 (80.6)
- VK1201 SR Conventional Sprinkler K8.0 (115)
- VK1202 SR Conventional Sprinkler K8.0 (115)
- VK3101 QR Conventional Sprinkler K5.6 (80.6)
- VK3541 QR Conventional Sprinkler K8.0 (115)
- VK3542 QR Conventional Sprinkler K8.0 (115)

WARNING

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2. OTHER APPLICABLE DOCUMENTS

For intended use and relevant conditions for the safe use of the specific sprinkler, refer to the appropriate Technical Data Sheet. In case an installed sprinkler needs to be replaced, refer to the appropriate Handling and Installation Instructions for the installation of the new sprinkler.

3. MAINTAINING OPERATIONAL READINESS

Functionality

During fire conditions, the operating element fuses or shatters (depending on the type of sprinkler), releasing the pip cap and sealing assembly. Water flowing through the sprinkler orifice strikes the sprinkler deflector, forming a uniform spray pattern to control or extinguish the fire.

WARNING

This section contains important safety information. Read and follow all information.

Damaged or Compromised Sprinklers

Damaged or compromised sprinklers will not operate properly which could lead to loss of life.

- NEVER clean, paint, or caulk sprinklers.
- NEVER apply soap, water, ammonia, adhesives, solvents or any other fluids on sprinklers.
- NEVER expose sprinklers to temperatures exceeding the maximum allowed ambient ceiling temperature. See the Technical Data Sheet.
- ALWAYS replace a compromised or damaged sprinkler.
- NEVER attempt to repair or reassemble a sprinkler.
- ALWAYS replace operated sprinklers and cover assemblies and sprinklers exposed to corrosive products of combustion.
- Replacement of sprinklers must only be performed following the instructions in section 4.

The following are examples in which sprinklers are considered damaged or compromised. Replace the sprinkler in the following cases:

- Sprinkler with a loss of fluid from the glass bulb or damage to the fusible element.
- Sprinklers or cover plate assemblies that have been field painted, caulked, or mechanically damaged.
- Sprinklers showing signs of extraordinary corrosion.



Obstructions and obstacles

Obstructions and obstacles may compromise sprinkler discharge patterns which are critical for proper fire protection.

- NEVER attach items to sprinklers or hang items from the ceiling in an area protected with sprinklers.
- NEVER install walls in areas protected with sprinklers without having a specialized company verifying the design of the sprinkler system.
- ALWAYS remove obstructions and obstacles to sprinkler spray patterns.

Sprinkler systems that have been subjected to a fire

Sprinkler systems that have been subjected to a fire must be returned to service as soon as possible.

- After an event of fire, the entire sprinkler system must be inspected for damage and repaired as necessary.
- Refer to the minimum requirements of the Authority Having Jurisdiction for replacement of sprinklers.
- Consider the employment of a fire patrol as long as the sprinkler system is out of service.

Inspections and testing

The owner is responsible for having the sprinklers inspected and tested according to standards of the applicable approval body and to the requirements of the Authority Having Jurisdiction to maintain proper operating condition of the system.

- Sprinklers must be inspected on a regular basis for corrosion, mechanical damage, obstructions, paint, etc. Frequency of inspections may vary due to corrosive atmospheres, water supplies, and activity around the sprinkler.

The applicable approval body or Authority Having Jurisdiction may require sprinklers to be replaced after a specified term of service.

- Refer to the standards of the applicable approval body, such as NFPA, FM, VdS, or LPCB, and the requirements of the Authority Having Jurisdiction for detailed inspection, testing and replacements requirements.

Sprinklers removed from the system for testing or for any other purpose must be replaced according to section 4.

4. REMOVAL AND REPLACEMENT

WARNING

Removal and replacement of sprinklers by insufficiently qualified personnel poses the risk of fatal consequences in case of fire.

- Removal or replacement of sprinklers must be performed by qualified personnel familiar with safe practices and applicable and recognized design and installation standards issued, for example, by NFPA, FM, VdS, or LPCB, and trained how to properly perform the installation procedures.

WARNING

Removal and replacement of sprinklers will temporarily eliminate the fire protection capabilities of the sprinkler system.

- Consider the employment of a fire patrol in the affected area.
- Prior to proceeding, notify all Authorities Having Jurisdiction.


⚠ WARNING

Re-installation of a removed sprinkler may compromise the operational safety of the sprinkler system.

- NEVER reinstall a removed sprinkler.
 - ALWAYS use new sprinklers for replacement.
1. Select new sprinklers with identical performance characteristics as well as respective accessories such as escutcheons, cover plates, and protective caps. A stocked spare sprinkler cabinet may be provided for this purpose on site.
 2. According to appropriate system description and/or valve instructions, remove the system from service, drain all water, and relieve all pressure on the piping.
 3. Only for flush and concealed style sprinklers: Remove the ceiling ring or cover plate assembly of the old sprinkler by gently unthreading or pulling it off the sprinkler body (depends on the sprinkler model used).
 4. Use the proper sprinkler wrench for the old sprinkler according to its Technical Data Sheet.
 5. Only for flush and concealed style sprinklers, but not for domed concealed sprinklers: Replace the plastic protective cap over the old sprinkler and fit the wrench over the cap.
 6. Use the wrench to remove the old sprinkler by turning it counterclockwise to unthread it from the piping.
 7. Install the new sprinkler by following its Handling and Installation Instructions.
 8. Place the system back in service and secure all valves.
 9. Check for and repair all leaks.

5. DISPOSAL

At end of use the product described here should be disposed of via the national recycling system.

6. CONTACT

The sprinkler and accessories are available through Viking distributors only. Contact your local Viking sales office which can be found on our website:

Americas and Asia: www.vikinggroupinc.com/locations OR Europe, Middle East, Africa (EMEA): www.viking-emea.com/contact

Manufacturer:

The Viking Corporation
5150 Beltway SE
Caledonia, MI 49316
Tel.: (800) 968-9501
Fax: 269-818-1680
Technical Services: 1-877-384-5464
techsvcs@vikingcorp.com

Importer EU:

Viking S.A.
21, Z.I, Haneboesch
L-4562 Differdange / Niederkorn
Tel.: +352 58 37 37 – 1
Fax: +352 58 37 36
vikinglux@viking-emea.com

Asia Pacific (APAC) Main Office:

The Viking Corporation (Far East) Pte. Ltd.
69 Tuas View Square
Westlink Techpark, Singapore 637621
Tel: (+65) 6 278 4061
Fax: (+65) 6 278 4609
vikingAPAC@vikingcorp.com



TECHNICAL DATA SHEET

VK3021 Quick Response Pendent Sprinkler K5.6 (80.6)

1. PRODUCT IDENTIFICATION

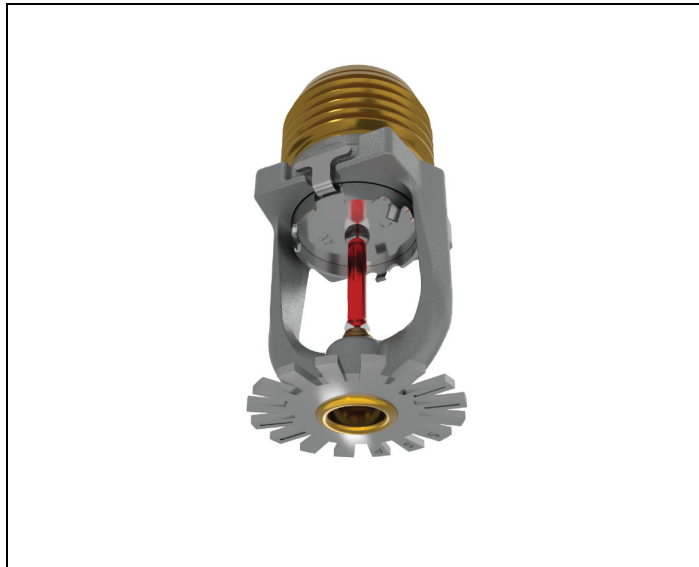
This document covers the following product, hereafter referred to as “sprinkler”:

VK3021: Quick Response, Standard Coverage, Pendent, K5.6 (80.6) Sprinkler.

2. INTENDED USE

The sprinkler is intended to be used in automatic fire sprinkler systems as allowed by applicable approval authorities. The sprinkler must be used in accordance with:

1. the sprinkler’s Listings, Approvals, and associated design requirements.
2. the recognized design and installations standards issued, for example NFPA, FM, EN, VdS, or LPCB.
3. the latest revisions of all applicable manufacturer’s documentation.



Governmental codes, ordinances, and standards may apply and may differ from one another.

⚠ WARNING

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3. LISTING AND APPROVALS

Refer to section 5 for details and requirements that must be followed.



cULus Listed



VdS Approved



FM Approved



UKCA Approved



CE



MED Approved



LPCB Approved


TECHNICAL DATA SHEET
**VK3021 Quick Response
Pendent Sprinkler K5.6 (80.6)**
4. TECHNICAL SPECIFICATIONS
4.1 Definitions

Standard Pendent Sprinkler: A sprinkler intended to be oriented with the deflector below the frame so water flows downward through the orifice, striking the deflector and forming an umbrella-shaped spray pattern downward. These sprinklers are marked “SP/RP” (Standard Pendent/Recessed Pendent). When a standard pendent sprinkler is used with a recessed escutcheon, it becomes a recessed pendent sprinkler.

Recessed Sprinkler: A spray sprinkler assembly intended for installation with a concealed piping system. The assembly consists of a sprinkler installed in a decorative adjustable recessed escutcheon that minimizes the protrusion of the sprinkler beyond the ceiling or wall without adversely affecting the sprinkler distribution or sensitivity. Refer to the appropriate technical data page for allowable sprinkler models, temperature ratings, and occupancy classifications.

NOTICE: Do not recess any sprinkler not listed or approved for use with the escutcheon. Refer to Section 5.

Corrosion Resistant Sprinkler: A special service sprinkler with non-corrosive protective coatings, or that is fabricated from non-corrosive material, for use in atmospheres that would normally corrode sprinklers. Sprinklers can be ordered as corrosion resistant sprinklers and can be used with escutcheons when allowed by the approval body.

4.2 Ratings and Physical Characteristics

Parameter	Value
Minimum operating pressure	7 psi (0.5 bar)
Maximum rated pressure	UL: 250 psi (17 bar) FM and CE: 175 psi (12 bar)
Factory tested pressure	500 psi (35 bar)
Thread size	1/2" NPT or 15 mm BSPT
Nominal K-factor	5.6 U.S. (80.6)
Minimum temperature rating (glass bulb)	-65 °F (-55 °C)

4.3 Markings and Dimensions

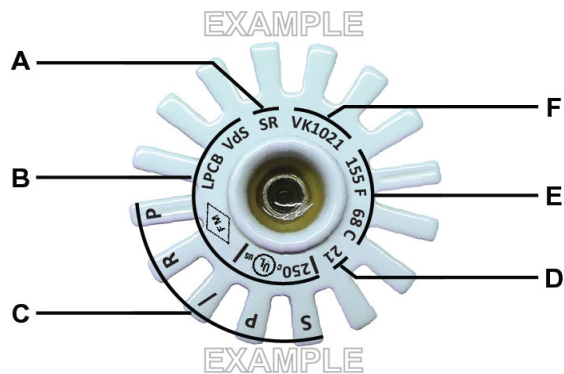


Figure – 1 Markings

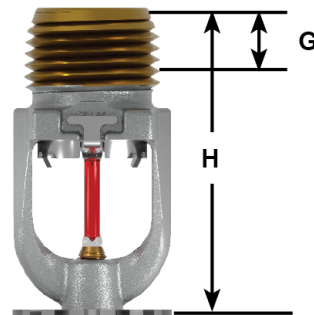


Figure – 2: Dimensions

Ref	Description	Value
A	Response type	QR: Quick Response
B	Listings and Approvals	See sections 3 and 5
C	Sprinkler type	SP/RP: Standard Pendent/Recessed Pendent
D	Manufacture date (year)	See marking
E	Nominal temperature rating	See marking
F	Manufacturers Sprinkler Identification Number (SIN)	VK3021
G	Nominal pipe engagement	7/16" (11 mm)
H	Height	1-15/16" (49 mm)

4.4 Materials of Construction

NOTICE: Do not disassemble the sprinkler.

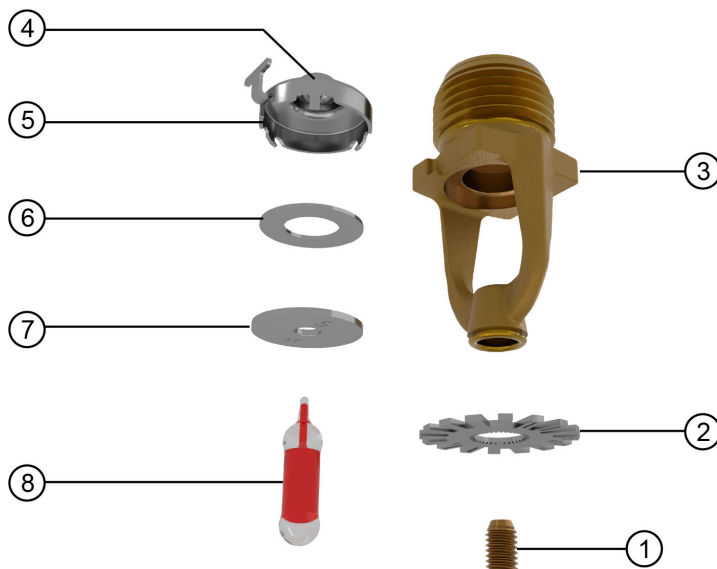


Figure – 3 Sprinkler Components

Ref	Description	Material
1	Compression screw	Brass CW612N, CW508L, UNS-C36000 or UNS-C26000
2	Deflector	Stainless steel UNS S30400
3	Sprinkler body	CW602N, UNS-C84400 or QM brass
4	Pip cap seal	Polytetrafluoroethylene (PTFE)
5	Pip cap shell	Stainless steel UNS-S44400
6	Belleville spring	Nickel alloy
7	Pip cap disc	Stainless steel UNS-S30100
8	Bulb	Glass, nominal 0.10" (3 mm) diameter


TECHNICAL DATA SHEET
**VK3021 Quick Response
Pendent Sprinkler K5.6 (80.6)**
5. LISTING AND APPROVAL DESIGN REQUIREMENTS
5.1 Listing and Approval Specifications

Sprinkler Base Part Number ¹	Thread Size		Approval Body				
	NPT	BSPT	cULus		FM		
			Approval Specification	Maximum working water pressure	Approval Specification	Maximum working water pressure	
23870	1/2"	—	A1, A2X, A3Y	250 psi (17 bar)	A1, B2X, B3Y	175 psi (12 bar)	
23882	—	15 mm	A1, A2X, A3Y	250 psi (17 bar)	A1, B2X, B3Y	175 psi (12 bar)	
Additional Listings and Approvals Maximum WWP 175 psi (12 bar)							
			CE	LPCB	VdS	UKCA	MED
23870	1/2"	—	A1, B2X, B3Y	A1, A2X, A3Y	A1	A1, A2X, A3Y	A1, A2X, A3Y
23882	—	15 mm	A1, B2X, B3Y	A1, A2X, A3Y	A1	A1, A2X, A3Y	A1, A2X, A3Y
Approval Specification (Temperature Ratings) Key:							
A = 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C) and 286 °F (141 °C)							
B = 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)							
Approval Specification (Finishes) Key:							
1 = Brass, Chrome, White Polyester ^{2,3} , Black Polyester ^{2,3} , and ENT ^{3,4}							
2 = Brass, Chrome, White Polyester ^{2,3} , and Black Polyester ^{2,3}							
3 = ENT ^{3,4}							
Approval Specification (Escutcheons) Key:							
X = Installed with Viking Recessed Escutcheons Models E-1, E-2, E-3, NP-1, NP-2, and NP-3, or Viking Standard Surface Mounted Escutcheons							
Y = Installed with Viking Recessed Escutcheons Models E-1 and NP-1, or Viking Standard Surface Mounted Escutcheons							
1 For complete part number, refer to Viking's current price list.							
2 For White Polyester and Black Polyester, other colors are available upon request and will carry the same Listings and Approvals as the standard colors.							
3 cULus Listed as corrosion resistant.							
4 FM Approved as corrosion resistant.							

5.2 cULus Listing Requirements and Details

The sprinkler is cULus Listed as indicated in Table 5.1 for installation in accordance with the latest edition of NFPA 13 for standard spray sprinklers. This sprinkler is designed for use in light and ordinary hazard occupancies.

5.3 FM Approval Requirements and Details

The sprinkler is FM Approved as quick response Non-Storage pendent sprinkler as indicated in the FM Approval Guide. The sprinkler is also approved for use in FM Approved vacuum dry sprinkler systems with a maximum supervisory vacuum pressure of -3 psi (-207 mbar). FM Global Loss Prevention Data Sheets contain guidelines relating to, but not limited to: minimum water supply requirements, hydraulic design, ceiling slope and obstructions, minimum and maximum allowable spacing, and deflector distance below the ceiling. For specific application and installation requirements, refer to the latest applicable FM Loss Prevention Data Sheets (including Data Sheet 2-0).



5.4 Additional Approval Requirements and Details

Refer to Table 5.1 for approved configurations allowed by each of the following approvals.

- CE CPR: Standard EN 12259-1:1999 +A3:2006; Declaration of Performance DOP_XT1A.
- LPCB: Standard EN 12259-1:1999 +A3:2006; Certificate Number 096m.
- VdS: Standard EN 12259-1:1999 +A3:2006; Certificate Number G 422006.
- UKCA: Standard EN12259-1:1999 +A3:2006; Declaration of Conformity UKCA DOC_S5048.
- MED: Standard EN 12259-1:1999 +A3:2006; Declaration of Conformity DOC_MED_XT1.

For specific application and installation requirements, refer to the latest applicable governmental codes, ordinances, and standards for the installation location.

5.5 Corrosion Resistant Coatings

The corrosion resistant coatings have passed the standard corrosion tests required by the approving agencies and are listed and approved as indicated in Table 5.1. These tests do not represent all possible corrosive environments. The Electro-less Nickel PTFE (ENT) finish passed the UL 199 thirty day corrosion test and is cULus listed and FM Approved as corrosion resistant. For automatic sprinklers, the ENT coating is applied to all exposed exterior surfaces, including the waterway.

Prior to installation, verify that the coatings are compatible with, or suitable for, the proposed environment. The ENT finish has not been evaluated for environments containing chlorine, such as indoor swimming pools. It is not recommended for these applications.

5.6 Sprinkler Guards and Water Shields

The sprinkler is approved for use with the Model XG Sprinkler Guard and the Model F-1 water shield. Refer to the Guards and Water Shields for XT1 Sprinklers technical data sheet for more information.

5.7 Escutcheons

The sprinkler is approved for use with various styles of Viking escutcheons. Specific installation dimensions apply that must be observed. Refer to the sprinkler's Handling and Installation instructions for more information.

5.8 Available Temperature Ratings

Viking sprinklers are available in several temperature ratings that relate to a specific temperature classification. Applicable installation rules mandate the use and limitations of each temperature classification. In selecting the appropriate temperature classification, the maximum expected ceiling temperature must be known. When there is doubt as to the maximum temperature at the sprinkler location, a maximum-reading thermometer should be used to determine the temperature under conditions that would show the highest readings to be expected. In addition, recognized installation rules may require a higher temperature classification, depending upon sprinkler location, occupancy classification, commodity classification, storage height, and other hazards. In all cases, the maximum expected ceiling temperature dictates the lowest allowable temperature classification. Sprinklers located immediately adjacent to a heat source may require a higher temperature rating.


TECHNICAL DATA SHEET
**VK3021 Quick Response
Pendent Sprinkler K5.6 (80.6)**
6. ORDERING PROCEDURE
6.1 Sprinkler

1. Choose a sprinkler base part number with the required thread size and listing or approval (refer to section 5):
2. Add the suffix for the desired finish.
3. Add the suffix for the desired temperature rating.

NOTE: For Polyester, insert the desired temperature rating suffix where the dash (-) is shown.

EXAMPLE: 23870MB/W = VK3021 with white polyester finish and 155 °F (68 °C) nominal temperature rating. This sprinkler is to be installed into an area with a maximum ambient temperature of 100 °F (38 °C).

1. Sprinkler Base Part Number		2. Finish		3. Temperature Rating			
See Section 5		Description	Suffix	Nominal Temperature Rating	Bulb Color	Maximum Ambient Ceiling Temperature	Suffix
23870	1/2" NPT	Brass	A	135 °F (57 °C)	Orange	100 °F (38 °C)	A
23882	15 mm BSPT	Chrome	F	155 °F (68 °C)	Red	100 °F (38 °C)	B
		White Polyester	M-/W	175 °F (79 °C)	Yellow	150 °F (65 °C)	D
		Black Polyester	M-/B	200 °F (93 °C)	Green	150 °F (65 °C)	E
		ENT	JN	286 °F (141 °C)	Blue	225 °F (107 °C)	G
				OPEN	—	—	Z

6.2 Sprinkler Accessories



Figure – 4: Sprinkler Accessories

Image Reference	Part Number	Description
1)	23559MB	Straight wrench: required for proper installation
2)	23560MB	Recessed socket wrench
3)	01724A	Sprinkler cabinet: holds up to 6 sprinklers
4)	01725A	Sprinkler cabinet: holds up to 12 sprinklers (not shown)
5)	06419A	Model E-1 Slip-on style recessed escutcheon
	07902	Model E-1 Slip-on style recessed escutcheon (stainless steel)
6)	11038	Model E-2 Threaded recessed escutcheon
7)	18347	Model E-3 Threaded recessed escutcheon (large diameter outer cup)
8)	01960A	Large standard flat surface mount escutcheon (steel)
	09488	Large standard flat surface mount escutcheon (stainless steel)
9)	02960A	Small standard flat surface mount escutcheon (steel)
	07526	Small standard flat surface mount escutcheon (stainless steel)
10)	01961B	Large standard raised surface mount escutcheon (brass)


TECHNICAL DATA SHEET
**VK3021 Quick Response
Pendent Sprinkler K5.6 (80.6)**
7. CONTACT

The sprinkler and accessories are available through Viking distributors only. Contact your local Viking sales office which can be found on our website:

Americas and Asia: www.vikinggroupinc.com/locations OR Europe, Middle East, Africa (EMEA): www.viking-emea.com/contact

Manufacturer:

The Viking Corporation
5150 Beltway SE
Caledonia, MI 49316
Tel.: (800) 968-9501
Fax: 269-818-1680
Technical Services: 1-877-384-5464
techsvcs@vikingcorp.com

Importer EU:

Viking S.A.
21, Z.I, Haneboesch
L-4562 Differdange / Niederkorn
Tel.: +352 58 37 37 – 1
Fax: +352 58 37 36
vikinglux@viking-emea.com

Asia Pacific (APAC) Main Office:

The Viking Corporation (Far East) Pte. Ltd.
69 Tuas View Square
Westlink Techpark, Singapore 637621
Tel: (+65) 6 278 4061
Fax: (+65) 6 278 4609
vikingAPAC@vikingcorp.com



Handling and Installation Instructions

Model XT-1 Pendent Sprinklers

bg	Инсталирайте и пуснете продукта в експлоатация само ако следната инструкция е ясно разбрана.	lv	Produkta iemontēšanu un ekspluatācijas sākšanu veikt tikai tad, ja dotā instrukcija ir pilnībā saprasta.
cs	Namontujte a spusťte do provozu produkt pouze tehdy, když jste jasně pochopili tento návod.	lt	Produktą montuokite ir pradėkite eksploatuoti tik tuomet, jei aiškiai suprantate šią instrukciją.
de	Du må kun montere og idriftsætte produktet, hvis du har forstået følgende vejledning til fulde.	mt	Installa u f'ad dem il-prodott biss jekk l-istruzzjonijiet li ġejjin jinftiehm b'mod ċar.
de	Produkt nur einbauen und in Betrieb nehmen, wenn die nachfolgende Anleitung klar verstanden wird.	nl	Product alleen installeren en in gebruik nemen, als de volgende instructies begrepen zijn.
el	Η εγκατάσταση και θέση σε λειτουργία του προϊόντος επιτρέπονται μόνο εάν οι ακόλουθες οδηγίες έχουν γίνει κατανοητές.	no	Ikke installer og ta i bruk produktet uten at følgende anvisninger er tydelig forstått.
en	Do not install and commission the product unless you have clearly understood the instructions below.	pl	Produkt należy montować i uruchamiać tylko wtedy, gdy poniższe instrukcje są w pełni zrozumiałe.
es	Instalar el producto y ponerlo en funcionamiento solo cuando se hayan comprendido claramente las siguientes instrucciones.	pt	Instalar e colocar o produto em funcionamento somente se as instruções a seguir forem claramente compreendidas.
et	Paigaldage toode ja kasutage seda ainult siis, kui saate alljärgnevast juhendist selgelt aru.	ro	Montați produsul și puneți-l în funcțiune numai dacă instrucțiunea următoare este înțeleasă clar.
fi	Tuotteen saa asentaa ja ottaa käyttöön vain, jos jäljempänä oleva ohje ymmärretään selvästi.	ru	Не устанавливайте и не принимайте оборудование в эксплуатацию, если вы четко не поняли инструкции ниже
fr	N'installer et ne mettre en service le produit que si les instructions suivantes ont été clairement comprises.	sk	Namontujte a spusťte do prevádzky výrobok iba vtedy, pokiaľ ste jasne pochopili tento návod.
ga	Ná déan an táirge a shuiteail agus a choimisiúnu mura dtuigeann tu na teoracha thíos go soiléir.	sl	Izdelek vgradite in zaženite samo, če ste dobro razumeli navodila v nadaljevanju.
hr	Ne instalirajte i ne puštajte proizvod u rad ako niste jasno razumjeli donje upute.	sr	Не инсталирајте и не пуштајте производ у рад ако нисте јасно разумели упутства у наставку.
hu	Csak akkor építse be a terméket és helyezze üzembe, ha a következő útmutatót egyértelműen megértette.	sv	Montera och driftsätt produkten endast om du förstår den efterföljande instruktionen.
is	Settu ekki upp eða taktu vöruna í notkun nema þú hafir skilið greinilega leiðbeiningarnar hér að neðan.	tr	Aşağıdaki talimatları açıkça anlamadan ürünü kurmayın ve devreye almayın.
it	Montare il prodotto e metterlo in funzione solo se si sono comprese appieno le seguenti istruzioni.		

1. PRODUCT IDENTIFICATION

This document covers the following products, hereafter referred to as “sprinkler”:

- VK1021 Standard Response Pendent Sprinkler K5.6 (80.6)
- VK2021 Standard Response Pendent Sprinkler K8.0 (115)
- VK2022 Standard Response Pendent Sprinkler K8.0 (115)
- VK3021 Quick Response Pendent Sprinkler K5.6 (80.6)
- VK3521 Quick Response Pendent Sprinkler K8.0 (115)
- VK3522 Quick Response Pendent Sprinkler K8.0 (115)

2. OTHER APPLICABLE DOCUMENTS

For intended use and relevant conditions for the safe use of the specific sprinkler refer to the appropriate *Technical Data Sheet*.



3. TRANSPORT AND HANDLING

WARNING

A damaged or compromised sprinkler poses the risk of fatal consequences.

Damaged or compromised sprinklers will not operate properly which could lead to loss of life.

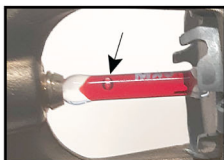
- NEVER use a sprinkler that has been exposed to temperatures exceeding the maximum allowed ambient temperature.
- NEVER use a sprinkler with a loss of liquid from the glass bulb or damage to the fusible element. A small bubble should be visible within the glass bulb; rotate the sprinkler to a horizontal position while observing the bulb to see the bubble.
- NEVER use a sprinkler that has been dropped or damaged.
- ALWAYS Protect the sprinkler from mechanical damage during storage, transport, and handling.
- NEVER use sprinklers that have been painted by anyone other than the manufacturer.
- ALWAYS protect sprinklers from being painted during installation or replacement in accordance with the installation standards.
- NEVER clean sprinklers with anything other than 7 psi or lower compressed air.
- NEVER apply soap, water, ammonia, adhesives, solvents or any other fluids on sprinklers.
- Destroy every damaged or compromised sprinkler.

NOTICE

Protect sprinklers during transport and handling.

- ALWAYS handle the sprinkler with care.
- ALWAYS keep the protective cap on the sprinkler during transport and handling.
- NEVER remove the protective cap until the fire sprinkler system is placed in service and the potential for mechanical damage no longer exists.
- ALWAYS protect the sprinkler from direct sunlight during transport and handling.
- ALWAYS store sprinkler in a cool, dry, protected area.
- ALWAYS use original manufacturer's shipping containers.
- NEVER store a sprinkler loose in a box, bin, bucket, or other type of container.
- ALWAYS keep the sprinkler separated from other sprinklers.
- NEVER allow metal parts to contact the sprinkler operating elements.

NOTE: If the glass bulb included on the sprinkler has been exposed to ultraviolet light, the color inside the bulb may fade. This color change does not affect the operation of the sprinkler.



CORRECT
(Bulb intact, bubble visible)



INCORRECT
(bulb cracked, fluid missing)



CORRECT
(Protective caps in place)



INCORRECT
(Protective caps not in place)



CORRECT
Container



INCORRECT
(Stored loose in a box)

4. INSTALLATION

⚠ WARNING

Installation by insufficiently qualified personnel poses the risk of fatal consequences.

- This sprinkler must be installed properly by qualified personnel familiar with safe practices and applicable and recognized design and installation standards issued, for example, by NFPA, FM, VdS, or LPCB, and trained how to properly perform the installation procedures.

⚠ WARNING

Incorrect recessed installation poses the risk of fatal consequences.

- For recessed applications, this sprinkler must be installed according to the dimensions shown in Figure 1.

⚠ CAUTION

Cutting Hazard.

Sprinklers, accessories, cabinets, and packaging can have sharp edges that can cause cuts.

- Wear appropriate personal protective equipment (gloves) while handling product.

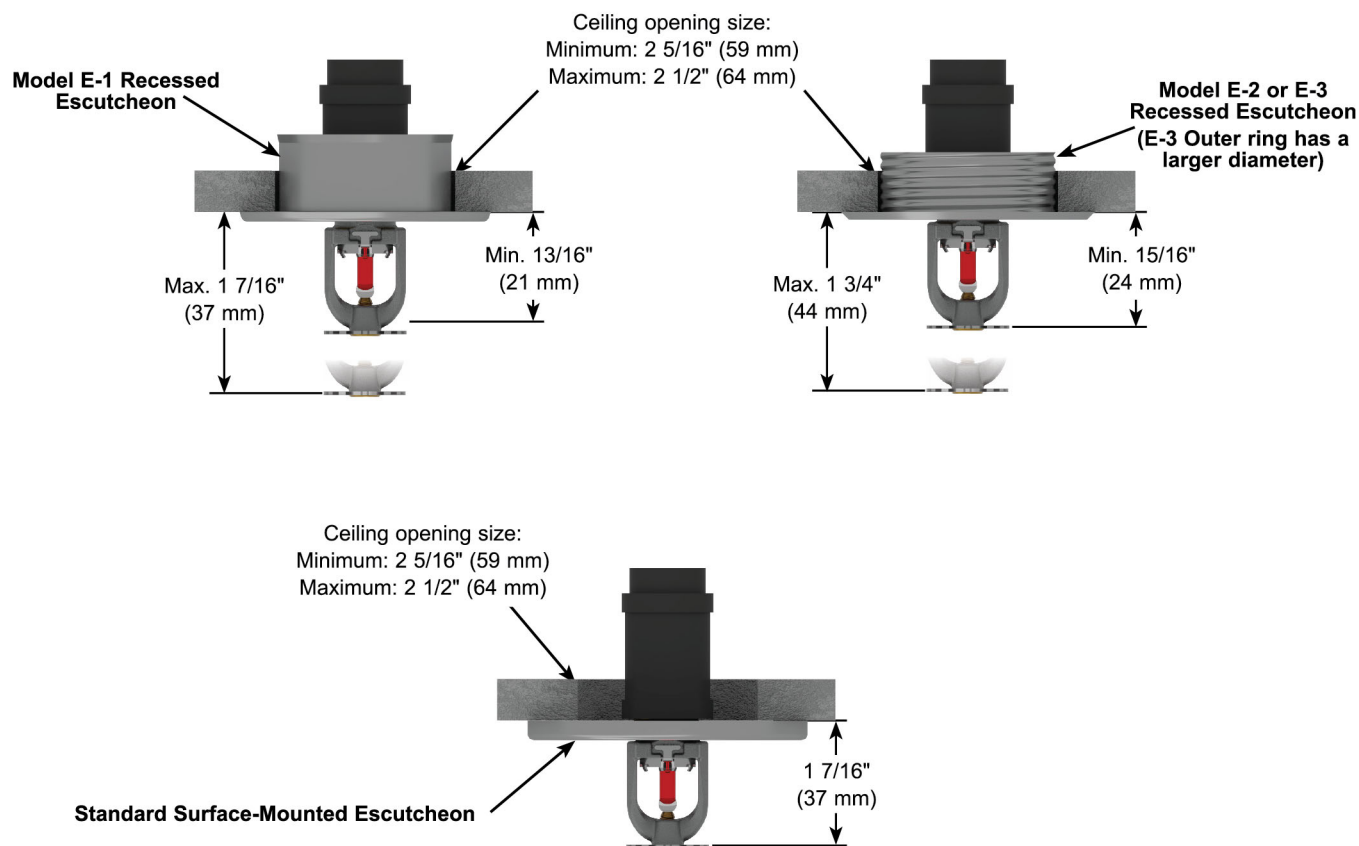


Figure – 1 Installation Dimensions with Viking Escutcheons

Optional Guards, Shields, and Escutcheons: If the sprinkler shall be installed together with a guard, shield, or escutcheon refer to the applicable documents for the products used.

1. Install all required piping in the intended installation location.
2. Verify that the sprinkler model/style, K-factor, temperature rating, and response characteristics are appropriate for the intended installation location. See Table 1 and Figure 5.
3. Inspect the sprinkler for damage. Destroy every damaged or compromised sprinkler. The following are examples in which sprinklers are considered damaged or compromised. Replace the sprinkler in the following cases:
 - Sprinkler with a loss of fluid from the glass bulb or damage to the fusible element.
 - Sprinklers that have been field painted, caulked, or mechanically damaged.
 - Sprinklers showing signs of corrosion.
4. Verify that the sprinkler is protected with the protective cap or clip.
5. Apply a small amount of pipe-joint compound or tape to the external threads of the sprinkler only. Do not allow a build-up of compound inside the sprinkler inlet (Figure 2).

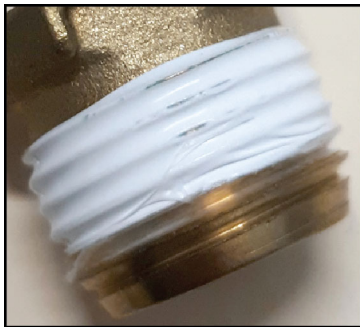


Figure – 2

6. If applicable, Install the escutcheon on the sprinkler threads.
7. **NOTICE: Do not use the deflector to start threading the sprinkler into a fitting. Use ONLY the approved wrench to install the sprinkler. Refer to the sprinkler's *Technical Data Sheet*.**
 - a) **For recessed sprinkler wrench (Figure 3a):** Carefully slide the wrench sideways around the protective cap and push upwards to engage with the sprinkler wrench flats.
 - b) **For the standard sprinkler wrench (Figure 3b):** Carefully slide the wrench onto the sprinkler wrench flats.

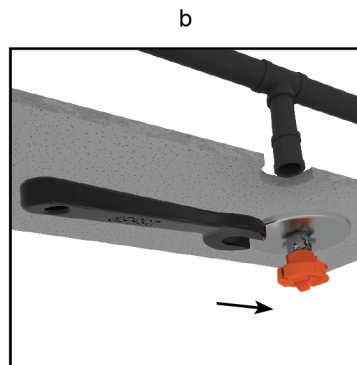
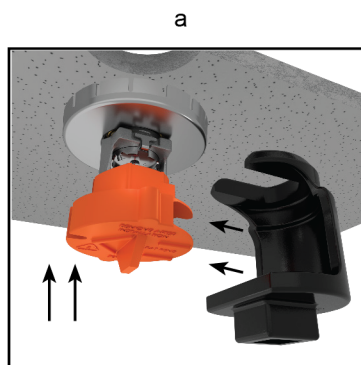


Figure – 3



Handling and Installation Instructions

Model XT-1 Pendent Sprinklers

8. **NOTICE: Over-tightening the sprinkler can cause permanent damage. For 1/2" NPT (or 15 mm BSPT) sprinkler, tighten up to a maximum torque of 14 ft-lbs (19 Nm). For 3/4" NPT (or 20 mm BSPT) sprinkler, tighten up to a maximum of 20 ft-lbs (27,1 Nm).**
Tighten the sprinkler as necessary (Figure 4a and 4b). If applicable, install a sprinkler guard and water shield.

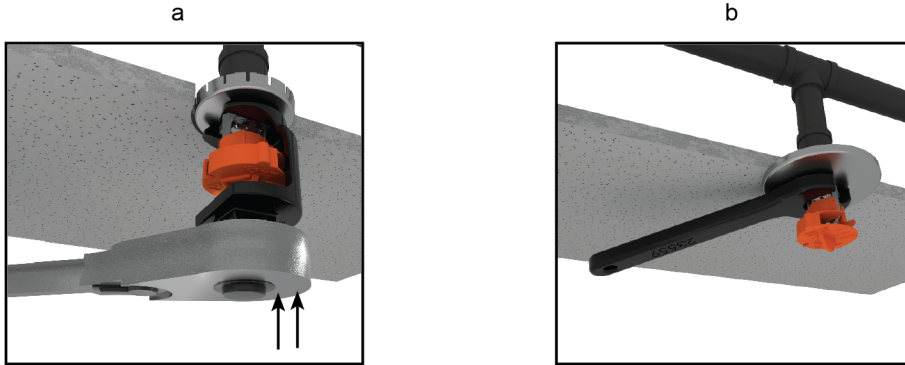


Figure – 4

9. **NOTICE: Sprinkler protective caps/clips must be removed from the sprinkler before placing the system in service. Test the entire sprinkler system.**
Refer to the applicable system documentation, regulations, and standards to ensure compliance.

Table 1: Sprinkler Markings		
Ref	Parameter	
A	Response type	<p>EXAMPLE</p> <p>A ——— F</p> <p>B ——— E</p> <p>C ——— D</p> <p>EXAMPLE</p> <p>Figure – 5</p>
B	Listings and approvals	
C	Sprinkler type	
D	Manufacture date	
E	Nominal temperature rating	
F	Manufacturer's Sprinkler Identification Number (SIN)	



Handling and Installation Instructions

Model XT-1 Pendent Sprinklers

5. CONTACT

The sprinkler and accessories are available through Viking distributors only. Contact your local Viking sales office which can be found on our website:

Americas and Asia: www.vikinggroupinc.com/locations OR Europe, Middle East, Africa (EMEA): www.viking-emea.com/contact

Manufacturer:

The Viking Corporation
5150 Beltway SE
Caledonia, MI 49316
Tel.: (800) 968-9501
Fax: 269-818-1680
Technical Services: 1-877-384-5464
techsvcs@vikingcorp.com

Importer EU:

Viking S.A.
21, Z.I, Haneboesch
L-4562 Differdange / Niederkorn
Tel.: +352 58 37 37 – 1
Fax: +352 58 37 36
vikinglux@viking-emea.com

Asia Pacific (APAC) Main Office:

The Viking Corporation (Far East) Pte. Ltd.
69 Tuas View Square
Westlink Techpark, Singapore 637621
Tel: (+65) 6 278 4061
Fax: (+65) 6 278 4609
vikingAPAC@vikingcorp.com



1. PRODUCT IDENTIFICATION

This document covers the following product, hereafter referred to as “sprinkler” (SR=Standard Response, QR=Quick Response):

- VK1001 SR Upright Sprinkler K5.6 (80.6)
- VK2001 SR Upright Sprinkler K8.0 (115)
- VK2002 SR Upright Sprinkler K8.0 (115)
- VK3001 QR Upright Sprinkler K5.6 (80.6)
- VK3501 QR Upright Sprinkler K8.0 (115)
- VK3502 QR Upright Sprinkler K8.0 (115)
- VK1021 SR Pendent Sprinkler K5.6 (80.6)
- VK2021 SR Pendent Sprinkler K8.0 (115)
- VK2022 SR Pendent Sprinkler K8.0 (115)
- VK3021 QR Pendent Sprinkler K5.6 (80.6)
- VK3521 QR Pendent Sprinkler K8.0 (115)
- VK3522 QR Pendent Sprinkler K8.0 (115)
- VK1181 SR Conventional Sprinkler K5.6 (80.6)
- VK1201 SR Conventional Sprinkler K8.0 (115)
- VK1202 SR Conventional Sprinkler K8.0 (115)
- VK3101 QR Conventional Sprinkler K5.6 (80.6)
- VK3541 QR Conventional Sprinkler K8.0 (115)
- VK3542 QR Conventional Sprinkler K8.0 (115)

WARNING

Cancer and Reproductive Harm www.P65Warning.ca.gov

2. OTHER APPLICABLE DOCUMENTS

For intended use and relevant conditions for the safe use of the specific sprinkler, refer to the appropriate Technical Data Sheet. In case an installed sprinkler needs to be replaced, refer to the appropriate Handling and Installation Instructions for the installation of the new sprinkler.

3. MAINTAINING OPERATIONAL READINESS

Functionality

During fire conditions, the operating element fuses or shatters (depending on the type of sprinkler), releasing the pip cap and sealing assembly. Water flowing through the sprinkler orifice strikes the sprinkler deflector, forming a uniform spray pattern to control or extinguish the fire.

WARNING

This section contains important safety information. Read and follow all information.

Damaged or Compromised Sprinklers

Damaged or compromised sprinklers will not operate properly which could lead to loss of life.

- NEVER clean, paint, or caulk sprinklers.
- NEVER apply soap, water, ammonia, adhesives, solvents or any other fluids on sprinklers.
- NEVER expose sprinklers to temperatures exceeding the maximum allowed ambient ceiling temperature. See the Technical Data Sheet.
- ALWAYS replace a compromised or damaged sprinkler.
- NEVER attempt to repair or reassemble a sprinkler.
- ALWAYS replace operated sprinklers and cover assemblies and sprinklers exposed to corrosive products of combustion.
- Replacement of sprinklers must only be performed following the instructions in section 4.

The following are examples in which sprinklers are considered damaged or compromised. Replace the sprinkler in the following cases:

- Sprinkler with a loss of fluid from the glass bulb or damage to the fusible element.
- Sprinklers or cover plate assemblies that have been field painted, caulked, or mechanically damaged.
- Sprinklers showing signs of extraordinary corrosion.



Obstructions and obstacles

Obstructions and obstacles may compromise sprinkler discharge patterns which are critical for proper fire protection.

- NEVER attach items to sprinklers or hang items from the ceiling in an area protected with sprinklers.
- NEVER install walls in areas protected with sprinklers without having a specialized company verifying the design of the sprinkler system.
- ALWAYS remove obstructions and obstacles to sprinkler spray patterns.

Sprinkler systems that have been subjected to a fire

Sprinkler systems that have been subjected to a fire must be returned to service as soon as possible.

- After an event of fire, the entire sprinkler system must be inspected for damage and repaired as necessary.
- Refer to the minimum requirements of the Authority Having Jurisdiction for replacement of sprinklers.
- Consider the employment of a fire patrol as long as the sprinkler system is out of service.

Inspections and testing

The owner is responsible for having the sprinklers inspected and tested according to standards of the applicable approval body and to the requirements of the Authority Having Jurisdiction to maintain proper operating condition of the system.

- Sprinklers must be inspected on a regular basis for corrosion, mechanical damage, obstructions, paint, etc. Frequency of inspections may vary due to corrosive atmospheres, water supplies, and activity around the sprinkler.

The applicable approval body or Authority Having Jurisdiction may require sprinklers to be replaced after a specified term of service.

- Refer to the standards of the applicable approval body, such as NFPA, FM, VdS, or LPCB, and the requirements of the Authority Having Jurisdiction for detailed inspection, testing and replacements requirements.

Sprinklers removed from the system for testing or for any other purpose must be replaced according to section 4.

4. REMOVAL AND REPLACEMENT

WARNING

Removal and replacement of sprinklers by insufficiently qualified personnel poses the risk of fatal consequences in case of fire.

- Removal or replacement of sprinklers must be performed by qualified personnel familiar with safe practices and applicable and recognized design and installation standards issued, for example, by NFPA, FM, VdS, or LPCB, and trained how to properly perform the installation procedures.

WARNING

Removal and replacement of sprinklers will temporarily eliminate the fire protection capabilities of the sprinkler system.

- Consider the employment of a fire patrol in the affected area.
- Prior to proceeding, notify all Authorities Having Jurisdiction.


⚠ WARNING

Re-installation of a removed sprinkler may compromise the operational safety of the sprinkler system.

- NEVER reinstall a removed sprinkler.
 - ALWAYS use new sprinklers for replacement.
1. Select new sprinklers with identical performance characteristics as well as respective accessories such as escutcheons, cover plates, and protective caps. A stocked spare sprinkler cabinet may be provided for this purpose on site.
 2. According to appropriate system description and/or valve instructions, remove the system from service, drain all water, and relieve all pressure on the piping.
 3. Only for flush and concealed style sprinklers: Remove the ceiling ring or cover plate assembly of the old sprinkler by gently unthreading or pulling it off the sprinkler body (depends on the sprinkler model used).
 4. Use the proper sprinkler wrench for the old sprinkler according to its Technical Data Sheet.
 5. Only for flush and concealed style sprinklers, but not for domed concealed sprinklers: Replace the plastic protective cap over the old sprinkler and fit the wrench over the cap.
 6. Use the wrench to remove the old sprinkler by turning it counterclockwise to unthread it from the piping.
 7. Install the new sprinkler by following its Handling and Installation Instructions.
 8. Place the system back in service and secure all valves.
 9. Check for and repair all leaks.

5. DISPOSAL

At end of use the product described here should be disposed of via the national recycling system.

6. CONTACT

The sprinkler and accessories are available through Viking distributors only. Contact your local Viking sales office which can be found on our website:

Americas and Asia: www.vikinggroupinc.com/locations OR Europe, Middle East, Africa (EMEA): www.viking-emea.com/contact

Manufacturer:

The Viking Corporation
5150 Beltway SE
Caledonia, MI 49316
Tel.: (800) 968-9501
Fax: 269-818-1680
Technical Services: 1-877-384-5464
techsvcs@vikingcorp.com

Importer EU:

Viking S.A.
21, Z.I, Haneboesch
L-4562 Differdange / Niederkorn
Tel.: +352 58 37 37 – 1
Fax: +352 58 37 36
vikinglux@viking-emea.com

Asia Pacific (APAC) Main Office:

The Viking Corporation (Far East) Pte. Ltd.
69 Tuas View Square
Westlink Techpark, Singapore 637621
Tel: (+65) 6 278 4061
Fax: (+65) 6 278 4609
vikingAPAC@vikingcorp.com

**BULLETIN****REGULATORY AND HEALTH
WARNINGS**

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058

Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

Visit the Viking website for the latest edition of this technical data page www.vikinggroupinc.com

1. DESCRIPTION

Regulatory and Health Warnings applying to materials used in the manufacture and construction of fire protection products are provided herein as they relate to legally mandated jurisdictional regions.

⚠ WARNING**STATE OF CALIFORNIA, USA**

Installing or servicing fire protection products such as sprinklers, valves, piping etc. can expose you to chemicals including, but not limited to, lead, nickel, butadiene, titanium dioxide, chromium, carbon black, and acrylonitrile which are known to the State of California to cause cancer or birth defects or other reproductive harm.

For more information, go to www.P65Warnings.ca.gov

2. WARRANTY TERMS AND CONDITIONS

For details of warranty, refer to Viking's current list price schedule at www.vikinggroupinc.com or contact Viking directly.