



TECHNICAL DATA

MICROFAST HP FIXED TEMPERATURE RELEASE VK800

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

1. DESCRIPTION

The Viking MicrofastHP® Fixed Temperature Release is a fixed-temperature, heat-responsive device. It is designed for use on pilot line release systems to activate deluge and preaction systems. The fixed temperature release is equipped with a 3 mm glass bulb and is available in several finishes and temperature ratings to meet design requirements. The special Polyester and Teflon® coatings can be used in decorative applications where colors are desired. In addition, these two finishes are listed as corrosion-resistant finishes and provide protection against many corrosive environments. The fixed temperature release design closely resembles the Model M frame-style sprinkler design, but is easily identified by its special listing information plate. This is important when fixed-temperature releases are installed along with sprinklers below ceilings on concealed systems.



2. LISTINGS AND APPROVALS

UL listed Guide No. VLTR for use under smooth, flat, horizontal ceilings. Meets FM requirements when spaced according to NFPA 13 and FM Global recommendations. See Design Guidelines.



WARNING: Cancer and Reproductive Harm.
www.P65Warnings.ca.gov

3. TECHNICAL DATA

Specifications:

Thread Size: ½" (15 mm) NPT
Glass-bulb temperature rated to -65 °F (-55 °C).
Rated to 250 PSI (1 724 kPa) water working pressure.
Factory tested hydrostatically to 500 PSI (3 448 kPa).
Testing: USA Patent No. 4,831,870

Material Standards:

Frame: Brass Castings UNS-C84400
Bulb: Glass, nominal 3 mm diameter
Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with Teflon Tape
Screw: Brass UNS-36000
Pip Cap: Copper UNS-C11000 and Stainless Steel UNS-S30400
Polyester-Coated Releases:
Spring: exposed
Teflon®-Coated Releases:
Spring: exposed
Screw: Brass UNS-C36000, nickel plated
Pip Cap: Copper UNS-C11000 and Stainless Steel UNS-S30400, Teflon® coated
ACCESSORIES
Refer to the "Sprinkler Accessories" section for wrench, escutcheons, and other accessories.

Ordering Information: (Also refer to the current Viking price list.)

Order MicrofastHP® Fixed Temperature Release by first adding the appropriate suffix for the sprinkler finish and then the appropriate suffix for the temperature rating to the sprinkler base part number.

Finish Suffix: Brass = A, Chrome-Enloy® = F, White Polyester = M-/W and Black Teflon = N

Temperature Suffix (°F/°C): 135°/57° = A, 155°/68° = B, 175°/79° = D, 200°/93° = E, 286°/141° = G

For example, Fixed Temperature Release VK800 with a Brass finish and a 155 °F/68 °C temperature rating = Part No. 07848AB

Available Finishes And Temperature Ratings: Refer to Table 1

Accessories: (Also refer to the "Sprinkler Accessories" section of the Viking data book.)

Sprinkler Wrench - Part No. 10896W/B

4. DESIGN AND INSTALLATION

I. Design Guidelines

Viking Fixed Temperature Releases are intended for use on hydraulic or pneumatic pilot line release systems in deluge or preaction sprinkler systems. Consult required installation standards, approving agencies, and the Authorities Having Jurisdiction requirements when designing pilot line release systems. Do not exceed the minimum manufacturer's recommendations listed below.

A. Temperature Rating:

1. The temperature rating of the fixed temperature release should be as close as possible to a temperature that is at least 20 °F higher than the highest ambient ceiling temperature. Refer to the Approval Chart.
2. For localized high ambient temperatures such as those caused by unit heaters and skylights, substitute higher temperature-rated

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TABLE 1: AVAILABLE TEMPERATURE RATINGS, FINISHES AND APPROVALS

Temperature Classification	Nominal Temperature Rating	Maximum Ambient Ceiling Temperature ¹	Bulb Color	Temperature Rating Color Code	Listed Spacing ³
Ordinary	135° F (57° C)	100 °F (38 °C)	Orange	None	40' x 40' (12m x 12m)
Ordinary	155° F (68° C)	100 °F (38 °C)	Red	None	20' x 20' (6,1m x 6,1m)
Intermediate	175° F (79° C)	150 °F (65 °C)	Yellow	White	40' x 40' (12m x 12m)
Intermediate	200° F (93° C)	150 °F (65 °C)	Green	White	20' x 20' (6,1m x 6,1m)
High	286° F (141° C)	225° F (107° C)	Blue	Blue	20' x 20' (6,1m x 6,1m)

Finishes: Brass, Chrome-Enloy®, White Polyester and black Teflon®²

Footnotes

¹ Based on NFPA-13. Other limits may apply, depending on fire loading, release location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.

² The corrosion-resistant coatings have passed the standard corrosion test required by the listed approving agencies. These tests cannot and do not represent all possible corrosive environments. Prior to installing, verify through the end-user that the coatings are compatible with or suitable for the proposed environment. The coatings indicated are applied to the exposed exterior surfaces only and, therefore, cannot be used as open releases. Note that the spring is exposed on the Teflon® and Polyester-coated releases.

³ Listed spacings are for smooth, flat, horizontal ceilings. Installation must comply with NFPA 13.

fixed temperature releases as directed by installation standards.

3. Select the proper temperature-rated fixed temperature releases and sprinklers for the hazard and ambient temperatures involved. NFPA 13 requires the activating temperature of the release system to be lower than the activating temperature of the sprinkler system.
 - a. Normally, it is advisable to use the lowest temperature combinations approved for the hazard and ambient temperature involved, as this permits early detection and more rapid attack.

B. Spacing:

1. Refer to the Approval Chart on this page (except for deluge systems) for listed spacing of fixed temperature releases below 15 ft. smooth, flat, horizontal ceilings. Reduced spacing may be required for other ceiling configurations.
2. For spacing of fixed temperature releases on deluge systems, comply with spacing guidelines set forth in NFPA 72.
3. To meet FM requirements, space fixed temperature releases according to guidelines set forth in NFPA 13 and FM recommendations.
4. The distance between adjacent fixed temperature releases is not to exceed the listed spacing.
5. The distance between a fixed temperature release and any wall or partition that extends to within 18" (457 mm) of the ceiling is not to exceed ½ the listed spacing.
6. The distance from the fixed temperature release to all points in the area of coverage (corners) is not to exceed 70 percent of the listed spacing.

C. Location:

1. When applying NFPA 72, Viking MicrofastHP® Fixed Temperature Releases are treated as spot-type heat detectors. Locate fixed temperature releases between 4" and 12" (100 mm and 300 mm) below the ceiling, and no closer than 4" (100 mm) from any wall or partition that extends to within 18" (457 mm) of the ceiling.
 - a. In the case of solid joist construction, fixed temperature releases shall be mounted at the bottom of joists.
 - b. In the case of beam construction where beams are less than 12" (300 mm) in depth and less than 8 ft. (2,4 m) on center, fixed temperature releases may be installed on the bottom of beams.
2. Fixed temperature releases are listed for installation in any position. When installing fixed temperature releases on release piping subject to freezing, install them in the upright position only.

II. Installation

WARNING: The Viking MicrofastHP® Fixed Temperature Release is manufactured and tested to meet the rigid requirements of approving agencies. The fixed temperature release is designed to be installed in accordance with recognized installation standards. Deviation from the standards or any alteration to the fixed-temperature release after it leaves the factory including, but not limited to: painting, plating, coating, or modification, may render the device inoperative and would automatically nullify the approval and any guarantee made by The Viking Corporation.



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1. The Viking MicrofastHP® Fixed Temperature Release is to be installed in accordance with the latest edition of Viking technical data, and the applicable installation standards such as the National Fire Protection Association 13, Factory Mutual Loss Prevention Guides, Loss Prevention Council or Assemblée Plénière, Verband der Sachversicherer or other similar organizations, and also with provisions of governmental codes and ordinances. Fixed temperature releases are often used on systems in special applications. It is usually necessary to obtain specific approval on each individual installation.
2. The Viking MicrofastHP® Fixed Temperature Release must be installed after the piping is in place to prevent mechanical damage. Before installation, be sure the release has the appropriate temperature rating. Keep releases with glass bulbs contained within the protective shields during installation and testing, and any time the release is shipped or handled. Apply a small amount of pipe-joint compound to the male threads only, taking care not to allow a build-up of compound inside the orifice. NOTE: Releases with glass bulbs must be contained within the protective shields when applying pipe-joint compound or tape. Install the fixed temperature release on the piping using the special wrench only (Part No. 10896), while taking care not to damage the operating parts of the fixed temperature release. DO NOT use the identification plate to start or thread the fixed temperature release into a fitting.
3. Fixed temperature releases must be handled with care. They must be stored in a cool, dry place in their original container. Never install fixed temperature releases that have been dropped or damaged in any way. Never install any glass-bulb style fixed temperature release if the bulb is cracked or if there is a loss of liquid from the bulb. If a glass bulb lacks the appropriate amount of fluid, it should be set aside and returned to Viking (or an authorized Viking distributor) for analysis as soon as possible. If the fixed temperature release is not returned to Viking, it should be destroyed immediately. Never install fixed temperature releases that have been exposed to temperatures in excess of the maximum ambient temperature allowed. Such devices should be destroyed immediately.
4. Corrosion-resistant fixed temperature releases must be installed when subject to corrosive atmospheres. Use only fixed temperature releases with finishes listed for corrosive environments when subject to corrosive atmospheres. When installing corrosion-resistant fixed temperature releases, care must be taken not to damage the corrosion-resistant coating. Use only the special wrench (Part No. 10896) designed for installing coated Viking sprinklers and Viking fixed temperature releases. (Any other wrench may damage the unit).
5. Viking MicrofastHP® Fixed Temperature Releases are listed for installation in any position. However, when installing them on release piping subject to freezing, install them in the upright position only. Hydraulic release lines must be installed in heated

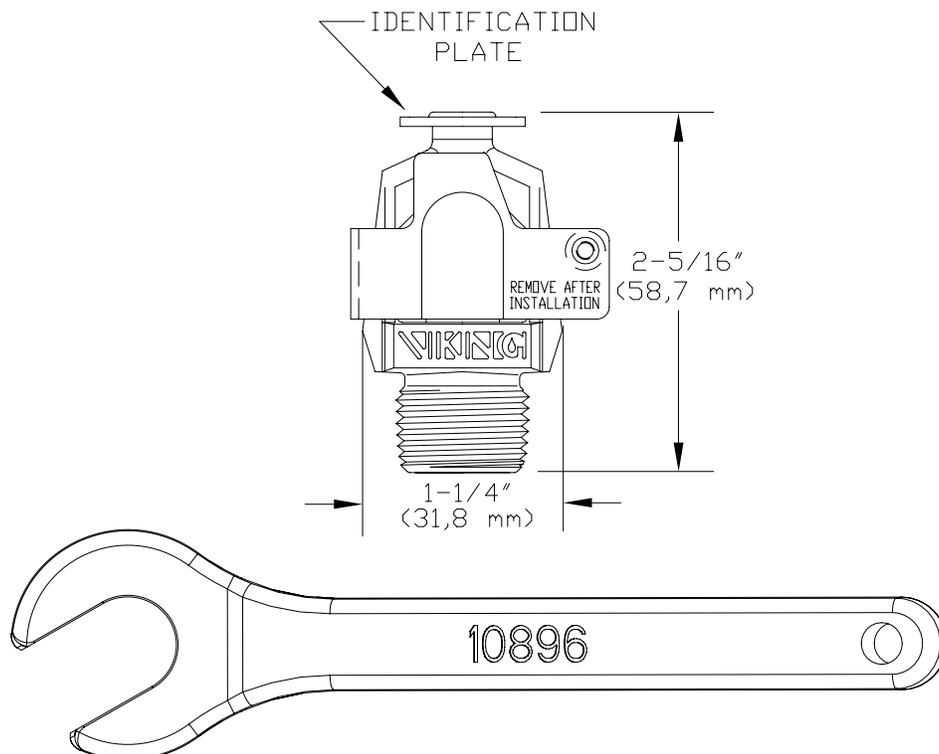


Figure 1 - Standard Sprinkler Wrench



TECHNICAL DATA

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areas only, never in areas subject to freezing. Use a dehydrator of adequate volume capacity when fixed temperature releases are installed on pneumatic release lines with pressurized air. Fixed temperature releases subject to mechanical damage must be protected with a sprinkler guard.

6. After installation, the entire release system must be tested. The test must be conducted to comply with the installation standards. Make sure the release has been properly tightened. If a thread leak occurs, normally the release must be removed, new pipe-joint compound or tape applied, and then reinstalled. This is due to the fact that when the joint seal is damaged, the sealing compound or tape is washed out of the joint. Remove plastic protective bulb shields AFTER there no longer is a potential for mechanical damage to the operating elements of the fixed temperature release. To remove the bulb shields, simply pull the ends of the shields apart where they are snapped together. **THE BULB SHIELDS MUST BE REMOVED FROM THE FIXED TEMPERATURE RELEASES BEFORE PLACING THE SYSTEM IN SERVICE!**

5. OPERATION

During fire conditions, the heat-sensitive liquid in the glass bulb expands, causing the bulb to shatter, releasing the pip-cap and sealing spring assembly. This causes an opening in the pilot line and releases the pressure (air, nitrogen, or water), allowing the deluge system or preaction system to operate.

6. INSPECTION, TEST AND MAINTENANCE

NOTICE: THE OWNER IS RESPONSIBLE FOR MAINTAINING THE FIRE-PROTECTION SYSTEM AND DEVICES IN PROPER OPERATING CONDITION. FOR MINIMUM MAINTENANCE AND INSPECTION REQUIREMENTS, REFER TO NFPA 25 STANDARD THAT DESCRIBES CARE AND MAINTENANCE OF SPRINKLER SYSTEMS. IN ADDITION, THE AUTHORITY HAVING JURISDICTION MAY HAVE ADDITIONAL MAINTENANCE, TESTING, AND INSPECTION REQUIREMENTS THAT MUST BE FOLLOWED.

1. Fixed temperature releases must be inspected on a regular basis for corrosion, mechanical damage, obstructions, paint, etc. The frequency of inspections may vary due to corrosive atmospheres, water supplies, and activity around the device. Adequate heat must be maintained around the fixed temperature release and release piping system.
2. Fixed temperature releases that have been field painted, caulked, or mechanically damaged must be replaced immediately. Any fixed temperature release showing signs of corrosion shall be tested and/or replaced immediately as required. Fixed temperature releases that are 20 years old shall be tested and/or replaced immediately as required. Consult accepted installation standards (e.g., NFPA 25), approving agencies, and Authorities Having Jurisdiction, as different minimum testing periods may be required. Fixed temperature releases that have operated cannot be reassembled or re-used, but must be replaced. When replacing fixed temperature releases, always use new units.
3. Nothing should be hung from, attached to, or otherwise obstruct the travel of heat to the fixed temperature release from any point within its listed area of coverage. Immediately remove all obstructions or, if necessary, install additional fixed temperature releases.
4. When replacing existing fixed temperature releases, the system must be removed from service. Refer to the appropriate system description and/or valve instructions. Prior to removing the system from service, notify all Authorities Having Jurisdiction. Consideration should be given to employment of a fire patrol in the effected area.
 - a. Remove the system from service, relieving all pressure (air, nitrogen, or water) on the release line piping.
 - b. Drain water from hydraulic release lines and remove any moisture present in pneumatic release lines.
 - c. Using the special wrench (Part No. 10896), remove the old fixed temperature release, and install the new unit. Care must be taken to ensure that the replacement unit has the proper temperature rating. A fully stocked sprinkler equipment cabinet should be provided for this purpose.
 - d. Place the system back in service and secure all valves. Check for and repair all leaks.
5. Sprinkler systems that have been subject to fire must be returned to service as soon as possible. The entire system must be inspected for damage and repaired or replaced as necessary. Sprinklers and fixed temperature releases that have been exposed to corrosive products of combustion or high ambient temperatures, but have not operated, should be replaced. Refer to the Authority Having Jurisdiction for minimum replacement requirements.

7. AVAILABILITY

Viking products are available through a network of domestic, Canadian, and international distributors. See the Viking Corp. Web site for your closest distributor or contact The Viking Corporation. Viking Technical Data may be found on The Viking Corporation's Web site, located at <http://www.vikinggroupinc.com>. The Web site may include a more recent edition of this Technical Data page.

8. GUARANTEE

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



BULLETIN

CARE AND HANDLING
OF SPRINKLERS

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
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SPRINKLERS ARE FRAGILE - HANDLE WITH CARE!

General Handling and Storage:

- Store sprinklers in a cool, dry place.
- Protect sprinklers during storage, transport, handling, and after installation.
- Use the original shipping containers. DO NOT place sprinklers loose in boxes, bins, or buckets.
- Keep sprinklers separated at all times. DO NOT allow metal parts to contact sprinkler operating elements.

For Pre-Assembled Drops:

- Protect sprinklers during handling and after installation.
- For recessed assemblies, use the protective sprinkler cap (Viking Part Number 10364).

Sprinklers with Protective Shields or Caps:

- DO NOT remove shields or caps until after sprinkler installation and there no longer is potential for mechanical damage to the sprinkler operating elements.
- **Sprinkler shields or caps MUST be removed BEFORE placing the system in service!**
- Remove the sprinkler shield by carefully pulling it apart where it is snapped together.
- Remove the cap by turning it slightly and pulling it off the sprinkler.

Sprinkler Installation:

- DO NOT use the sprinkler deflector or operating element to start or thread the sprinkler into a fitting.
- **Use only the designated sprinkler head wrench!** Refer to the current sprinkler technical data page to determine the correct wrench for the model of sprinkler used.
- DO NOT install sprinklers onto piping at the floor level.
- Install sprinklers after the piping is in place to prevent mechanical damage.
- DO NOT allow impacts such as hammer blows directly to sprinklers or to fittings, pipe, or couplings in close proximity to sprinklers. Sprinklers can be damaged from direct or indirect impacts.
- DO NOT attempt to remove drywall, paint, etc., from sprinklers.
- **Take care not to over-tighten the sprinkler and/or damage its operating parts!**

Maximum Torque:

1/2" NPT: 14 ft-lbs. (19.0 N-m)

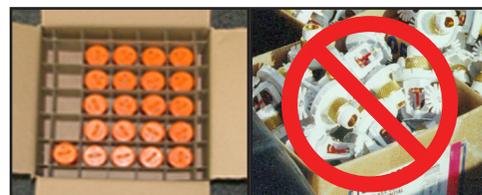
3/4" NPT: 20 ft-lbs. (27.1 N-m)

1" NPT: 30 ft-lbs. (40.7 N-m)



CORRECT
(Original container used)

INCORRECT
(Placed loose in box)



CORRECT
(Protected with caps)

INCORRECT
(Protective caps not used)



CORRECT
(Piping is in place at the ceiling)

INCORRECT
(Sprinkler at floor level)



CORRECT
(Special installation wrenches)

INCORRECT
(Designated wrench not used)



WARNING: Cancer and Reproductive Harm-
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! WARNING

Any sprinkler with a loss of liquid from the glass bulb or damage to the fusible element should be destroyed. Never install sprinklers that have been dropped, damaged, or exposed to temperatures exceeding the maximum ambient temperature allowed. Sprinklers that have been painted in the field must be replaced per NFPA 13. Protect sprinklers from paint and paint overspray in accordance with the installation standards. Do not clean sprinklers with soap and water, ammonia, or any other cleaning fluid. Do not use adhesives or solvents on sprinklers or their operating elements.

Refer to the appropriate technical data page and NFPA standards for complete care, handling, installation, and maintenance instructions. For additional product and system information Viking data pages and installation instructions are available on the Viking Web site at www.vikinggroupinc.com.



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CARE AND HANDLING
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PROTECTIVE SPRINKLER SHIELDS AND CAPS

General Handling and Storage:

Many Viking sprinklers are available with a plastic protective cap or shield temporarily covering the operating elements. The snap-on shields and caps are factory installed and are intended to help protect the operating elements from mechanical damage during shipping, storage, and installation. NOTE: It is still necessary to follow the care and handling instructions on the appropriate sprinkler technical data sheets* when installing sprinklers with bulb shields or caps.

WHEN TO REMOVE THE SHIELDS AND CAPS:

NOTE: SHIELDS AND CAPS MUST BE REMOVED FROM SPRINKLERS BEFORE PLACING THE SYSTEM IN SERVICE!

Remove the shield or cap from the sprinkler only after checking all of the following:

- The sprinkler has been installed*.
- The wall or ceiling finish work is completed where the sprinkler is installed and there no longer is a potential for mechanical damage to the sprinkler operating elements.

SHIELDS AND CAPS MUST BE REMOVED FROM SPRINKLERS BEFORE PLACING THE SYSTEM IN SERVICE!



Figure 1: Sprinkler shield being removed from a pendent sprinkler.



Figure 2: Sprinkler cap being removed from a pendent sprinkler.



Figure 3: Sprinkler cap being removed from an upright sprinkler.

HOW TO REMOVE SHIELDS AND CAPS:

No tools are necessary to remove the shields or caps from sprinklers. DO NOT use any sharp objects to remove them! **Take care not to cause mechanical damage to sprinklers when removing the shields or caps.** When removing caps from fusible element sprinklers, use care to prevent dislodging ejector springs or damaging fusible elements. NOTE: Squeezing the sprinkler cap excessively could damage sprinkler fusible elements.

- To remove the shield, simply pull the ends of the shield apart where it is snapped together. Refer to Figure 1.
- To remove the cap, turn it slightly and pull it off the sprinkler. Refer to Figures 2 and 3.

NOTICE

Refer to the current sprinkler technical data page to determine the correct sprinkler wrench for the model of sprinkler used.

WARNING

Never install sprinklers that have been dropped, damaged, or exposed to temperatures in excess of the maximum ambient temperature allowed.

* Refer to the appropriate current technical data pages for complete care, handling, and installation instructions. Data pages are included with each shipment from Viking or Viking distributors. They can also be found on the Web site at www.vikinggroupinc.com.



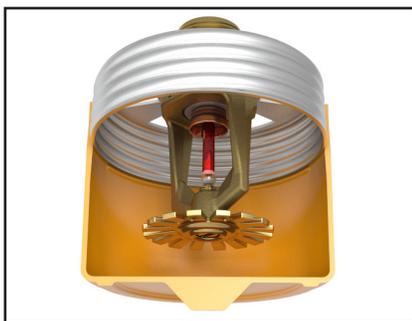
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CONCEALED COVER ASSEMBLIES ARE FRAGILE!
TO ASSURE SATISFACTORY PERFORMANCE OF THE PRODUCT, HANDLE WITH CARE.



Concealed Sprinkler and Adapter
 Assembly with Protective Cap

Concealed Sprinkler and Adapter
 Assembly (Protective Cap Removed)



Cover Plate Assembly
 (Pendent Cover 12381 shown)



GENERAL HANDLING AND STORAGE INSTRUCTIONS:

- Do not store in temperatures exceeding 100 °F (38 °C). Avoid direct sunlight and confined areas subject to heat.
- Protect sprinklers and cover assemblies during storage, transport, handling, and after installation.
 - Use original shipping containers.
 - Do not place sprinklers or cover assemblies loose in boxes, bins, or buckets.
- Keep the sprinkler bodies covered with the protective sprinkler cap any time the sprinklers are shipped or handled, during testing of the system, and while ceiling finish work is being completed.
- Use only the designated Viking recessed sprinkler wrench (refer to the appropriate sprinkler data page) to install these sprinklers. **NOTE:** The protective cap is temporarily removed during installation and then placed back on the sprinkler for protection until finish work is completed.
- Do not over-tighten the sprinklers into fittings during installation.
- Do not use the sprinkler deflector to start or thread the sprinklers into fittings during installation.
- Do not attempt to remove drywall, paint, etc., from the sprinklers.
- Remove the plastic protective cap from the sprinkler before attaching the cover plate assembly. **PROTECTIVE CAPS MUST BE REMOVED FROM SPRINKLERS BEFORE PLACING THE SYSTEM IN SERVICE!**

Refer to the appropriate current technical data pages for complete care, handling, and installation instructions. Data pages are included with each shipment from Viking or Viking distributors. They can also be found on the Web site at www.vikinggroupinc.com.



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USE THE FOLLOWING PRECAUTIONS WHEN HANDLING WAX-COATED SPRINKLERS

Many of Viking's sprinklers are available with factory-applied wax coating for corrosion resistance. These sprinklers MUST receive appropriate care and handling to avoid damaging the wax coating and to assure satisfactory performance of the product.

General Handling and Storage of Wax-Coated Sprinklers:

- Store the sprinklers in a cool, dry place (in temperatures below the maximum ambient temperature allowed for the sprinkler temperature rating. Refer to Table 1 below.)
- Store containers of wax-coated sprinklers separate from other sprinklers.
- Protect the sprinklers during storage, transport, handling, and after installation.
- Use original shipping containers.
- Do not place sprinklers in loose boxes, bins, or buckets.

Installation of Wax-Coated Sprinklers:

Use only the special sprinkler head wrench designed for installing wax-coated Viking sprinklers (any other wrench may damage the unit).

- Take care not to crack the wax coating on the units.
- For touching up the wax coating after installation, wax is available from Viking in bar form. Refer to Table 1 below. The coating MUST be repaired after sprinkler installation to protect the corrosion-resistant properties of the sprinkler.
- Use care when locating sprinklers near fixtures that can generate heat. Do not install sprinklers where they would be exposed to temperatures exceeding the maximum recommended ambient temperature for the temperature rating used.
- Inspect the coated sprinklers frequently soon after installation to verify the integrity of the corrosion resistant coating. Thereafter, inspect representative samples of the coated sprinklers in accordance with NFPA 25. Close up visual inspections are necessary to determine whether the sprinklers are being affected by corrosive conditions.

TABLE 1

Sprinkler Temperature Rating (Fusing Point)	Wax Part Number	Wax Melting Point	Maximum Ambient Ceiling Temperature ¹	Wax Color
155 °F (68 °C) / 165 °F (74 °C)	02568A	148 °F (64 °C)	100 °F (38 °C)	Light Brown
175 °F (79 °C)	04146A	161 °F (71 °C)	150 °F (65 °C)	Brown
200 °F (93 °C)	04146A	161 °F (71 °C)	150 °F (65 °C)	Brown
220 °F (104 °C)	02569A	170 °F (76 °C)	150 °F (65 °C)	Dark Brown
286 °F (141 °C)	02569A	170 °F (76 °C)	150 °F (65 °C)	Dark Brown

¹ Based on NFPA-13. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.



Never install sprinklers that have been dropped, damaged, or exposed to temperatures in excess of the maximum ambient temperature allowed.

Refer to the appropriate current technical data pages for complete care, handling, and installation instructions. Data pages are included with each shipment from Viking or Viking distributors. They can also be found on the Web site at www.vikinggroupinc.com.



TECHNICAL DATA

SPRINKLER OVERVIEW

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1. DESCRIPTION

Viking fire sprinklers consist of a threaded frame with a specific waterway or orifice size and a deflector for distributing water in a specified pattern. A closed or sealed sprinkler refers to a complete assembly, including the thermosensitive operating element. An open sprinkler does not use an operating element and is open at all times. The distribution of water is intended to extinguish a fire or to control its spread.

Viking sprinklers are available in several models and styles. Refer to specific sprinkler technical data pages for available styles, finishes, temperature ratings, thread sizes, and nominal K-Factors for the particular model selected.

2. LISTINGS AND APPROVALS

Refer to the Approval Charts on the appropriate sprinkler technical data page(s) and/or approval agency listings.



WARNING: Cancer and Reproductive Harm-
www.P65Warnings.ca.gov

3. TECHNICAL DATA

Pressure Ratings:

Maximum allowable water working pressure is 175 psig (12 Bar) unless rated and specified for high water working pressure [250 psig (17.2 bar)].

Sprinkler Identification:

Viking sprinklers are identified and marked with the word "Viking", the sprinkler identification number (SIN) consisting of "VK" plus a three digit number*, the model letter, and the year of manufacture.

Available Finishes:

Viking sprinklers are available in several decorative finishes. Some models are available with corrosion-resistant coatings or are fabricated from non-corrosive material. Refer to the sprinkler technical data page for additional information.

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.

K-Factors:

Viking sprinklers are available in several orifice sizes with related K-Factors. The orifice is a tapered waterway and, therefore, the K-Factor given is nominal. Nominal U.S. K-Factors are provided in accordance with the 1999 edition of NFPA 13, Section 3-2.3. Refer to the specific data page for appropriate K-Factor information.

Available Styles:

Viking sprinklers are available for installation in several positions as indicated by a stamping on the deflector. The deflector style dictates the appropriate installation position of the sprinkler; it breaks the solid stream of water issuing from the sprinkler orifice to form a specific spray pattern. The following list indicates the various styles and identification of Viking sprinklers.

UPRIGHT SPRINKLER: A sprinkler intended to be installed with the deflector above the frame so water flows upward through the orifice, striking the deflector and forming an umbrella-shaped spray pattern downward. Marked "SSU" (Standard Sprinkler Upright) or "UPRIGHT" on the deflector.

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. Marked "SSP" (Standard Sprinkler Pendent) or "PENDENT" on the deflector.

CONVENTIONAL SPRINKLER: An "old style" sprinkler intended to be installed with the deflector in either the upright or pendent position. The deflector provides a spherical type pattern with 40 to 60 percent of the water initially directed downward and a proportion directed upward. Must be installed in accordance with installation rules for conventional or old style sprinklers. **DO NOT USE AS A REPLACEMENT FOR STANDARD SPRAY SPRINKLERS.** Marked "C U/P" (Conventional Upright/Pendent) on the deflector.

Viking Technical Data may be found on
The Viking Corporation's Web site at
<http://www.vikinggroupinc.com>.
The Web site may include a more recent
edition of this Technical Data Page.



TECHNICAL DATA

SPRINKLER OVERVIEW

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

VERTICAL SIDEWALL (VSW) SPRINKLER: A sprinkler intended for installation near the wall and ceiling. The deflector provides a water spray pattern outward in a quarter-spherical pattern and can be installed in the upright or pendent position with the flow arrow in the direction of discharge. Marked "SIDEWALL" on the deflector with an arrow and the word "FLOW". (Note: Some vertical sidewall sprinklers can only be installed in the upright or pendent position—in this case, the sprinkler will also be marked "UPRIGHT" or "PENDENT".)

HORIZONTAL SIDEWALL (HSW) SPRINKLER: A sprinkler intended for installation near the wall and ceiling. The special deflector provides a water spray pattern outward in a quarter-spherical pattern. Most of the water is directed away from the nearby wall with a small portion directed at the wall behind the sprinkler. The top of the deflector is oriented parallel with the ceiling or roof. The flow arrows point in the direction of discharge. Marked "SIDEWALL" and "TOP" with an arrow and the word "FLOW".

EXTENDED COVERAGE (EC) SPRINKLER: A spray sprinkler designed to discharge water over an area having the maximum dimensions indicated in the individual listings. Maximum area of coverage, minimum flow rate, orifice size, and nominal K-Factor are specified in the individual listings. EC sprinklers are intended for Light-Hazard occupancies with smooth, flat, horizontal ceilings unless otherwise specified. In addition to the above markings, the sprinkler is marked "EC".

QUICK RESPONSE (QR) SPRINKLER: A spray sprinkler with a fast-actuating operating element. The use of quick response sprinklers may be limited due to occupancy and hazard. Refer to the Authority Having Jurisdiction (AHJ) prior to installing.

QUICK RESPONSE EXTENDED COVERAGE (QREC) SPRINKLER: A spray sprinkler designed to discharge water over an area having the maximum dimensions indicated in the individual listing. This is a sprinkler with an operating element that meets the criteria for quick response. QREC sprinklers are only intended for Light Hazard occupancies. The sprinkler is marked "QREC".

FLUSH SPRINKLER: A decorative spray sprinkler intended for installation with a concealed piping system. The unit is mounted flush with the ceiling or wall, with the fusible link exposed. Upon actuation, the deflector extends beyond the ceiling or wall to distribute water discharge. The sprinkler is marked "SSP", "PEND", or "SIDEWALL" and "TOP".

CONCEALED SPRINKLER: A decorative spray sprinkler intended for installation with a concealed piping system. The sprinkler is hidden from view by a cover plate installed flush with the ceiling or wall. During fire conditions, the cover plate detaches, and upon sprinkler actuation, the deflector extends beyond the ceiling or wall to distribute water discharge. The sprinkler is marked "SSP", "PEND", or "SIDEWALL" and "TOP".

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. DO NOT RECESS ANY SPRINKLER NOT LISTED FOR USE WITH THE ESCUTCHEON.

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.

DRY SPRINKLER: A special-service sprinkler intended for installation on dry pipe systems or wet pipe systems where the sprinkler is subject to freezing temperatures. The unit consists of a sprinkler permanently secured to an extension nipple with a sealed inlet end to prevent water from entering the nipple until the sprinkler operates. The unit MUST be installed in a tee fitting. Dry upright sprinklers are marked with the "B" dimension [distance from the face of the fitting (tee) to the top of the deflector]. Dry pendent and sidewall sprinklers are marked with the "A" dimension [the distance from the face of fitting (tee) to the finished surface of the ceiling or wall].

LARGE DROP SPRINKLER: A type of special application sprinkler used to provide fire control of specific high-challenge fire hazards. Large drop sprinklers are designed to produce an umbrella-shaped spray pattern downward with a higher percentage of "large" water droplets than standard spray sprinklers. The sprinkler has an extra-large orifice with a nominal K-Factor of 11.2. Marked "HIGH CHALLENGE" and "UPRIGHT".

EARLY SUPPRESSION FAST-RESPONSE (ESFR) SPRINKLER: A sprinkler intended to provide fire suppression of specific high-challenge fire hazards through the use of a fast response fusible link, 14.0, 16.8, or 25.2 nominal K-Factor, and special deflector. ESFR sprinklers are designed to produce high-momentum water droplets in a hemispherical pattern below the deflector. This permits penetration of the fire plume and direct wetting of the burning fuel surface while cooling the atmosphere early in the development of a high-challenge fire. Marked "ESFR" and "UPRIGHT" or "PEND".

INTERMEDIATE LEVEL/RACK STORAGE SPRINKLER: A standard spray sprinkler assembly designed to protect its operating element from the spray of sprinklers installed at higher elevations. The assembly consists of a standard or large orifice upright or pendent sprinkler with an integral upright or pendent water shield and guard assembly. Use only those sprinklers that have been tested and listed for use with the assembly. Refer to the technical data page for allowable sprinkler models.

RESIDENTIAL SPRINKLER: A sprinkler intended for use in the following occupancies: one- and two-family dwellings with the fire protection sprinkler system installed in accordance with NFPA 13D; residential occupancies up to four stories in height with the fire protection system installed in accordance with NFPA 13R; and where allowed by the Authority Having Jurisdiction in residential portions of any occupancy with the fire protection system installed in accordance with NFPA 13.



TECHNICAL DATA

SPRINKLER OVERVIEW

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Residential sprinklers have a unique distribution pattern and utilize a “fast response” heat sensitive operating element. They enhance survivability in the room of fire origin and are designed to provide a life safety environment for a minimum of ten minutes. For this reason, residential sprinklers must not be used to replace standard sprinklers unless tested for and approved by the Authority Having Jurisdiction. In addition to standard markings, the unit is identified as “RESIDENTIAL SPRINKLER” or “RES”.

4. INSTALLATION

Refer to appropriate NFPA Installation Standards.

5. OPERATION

Refer to the appropriate sprinkler technical data page(s).

6. INSPECTIONS, TESTS AND MAINTENANCE

Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

7. AVAILABILITY

Viking sprinklers are available through a network of domestic and international distributors. See The Viking Corporation web site for the closest distributor or contact The Viking Corporation.

8. GUARANTEE

For details of warranty, refer to Viking’s current list price schedule or contact Viking directly.

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers and the appropriate sprinkler general care, installation, and maintenance guide. Vikings sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate standards of NFPA, FM Global, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable. The sprinkler technical data page may contain installation requirements specific for the sprinkler model selected. The use of certain types of sprinklers may be limited due to occupancy and hazard. Refer to the Authority Having Jurisdiction prior to installation.

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

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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.