



**TECHNICAL DATA**

**SPRINKLER WATER SHIELDS AND GUARDS**

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](http://www.vikinggroupinc.com)

**1. DESCRIPTION**

Viking Model A-1, B-1, and C-1 Sprinkler Water Shields and Guards are used in conjunction with Viking frame style upright or pendent sprinklers where allowed by the approvals. (Refer to the Approval Chart) The guards are hard-wire cages designed to encase the sprinklers and protect them from mechanical damage. They are recommended for areas where sprinklers are installed at a low elevation and/or near a high degree of human or mechanical activity.

Water shields protect the sprinklers' heat-sensing operating element from water spray discharge from sprinklers located at a higher elevation. Viking frame style sprinklers with Model B-1 or C-1 Water Shields are converted to intermediate level/rack storage sprinklers. They may be used in any application where water shielding is required, such as in-rack sprinkler systems, under grating, on pilot sprinklers for deluge systems, and outdoors as a weather shield.

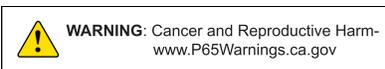
**NOTE: Sprinkler water shields and guards are not designed to be used on sprinklers installed in recessed escutcheons.**

**2. LISTINGS AND APPROVALS**

FM Approved: Class 2091

VdS Approved: Certificate G4920022

Refer to the Approval Chart for more information.



**3. TECHNICAL DATA**

**Specifications:**

**Model A-1, B-1, and C-1 Sprinkler Guards (Available since 1982)**

Diameter: 2-5/16" (59 mm), Height: 2-1/4" (57 mm)

**Model B-1 Sprinkler Water Shield (Available since 1984)**

Diameter: 4-3/8" (111 mm), Thickness: 0.0359" (1 mm)

**Model C-1 Sprinkler Water Shield (Available since 1986)**

Diameter: 3-1/2" (89 mm), Thickness: 0.0359" (1 mm)

**Material Standards:**

**Sprinkler Guards:** UNS-G10100 Bright Basic Steel Wire

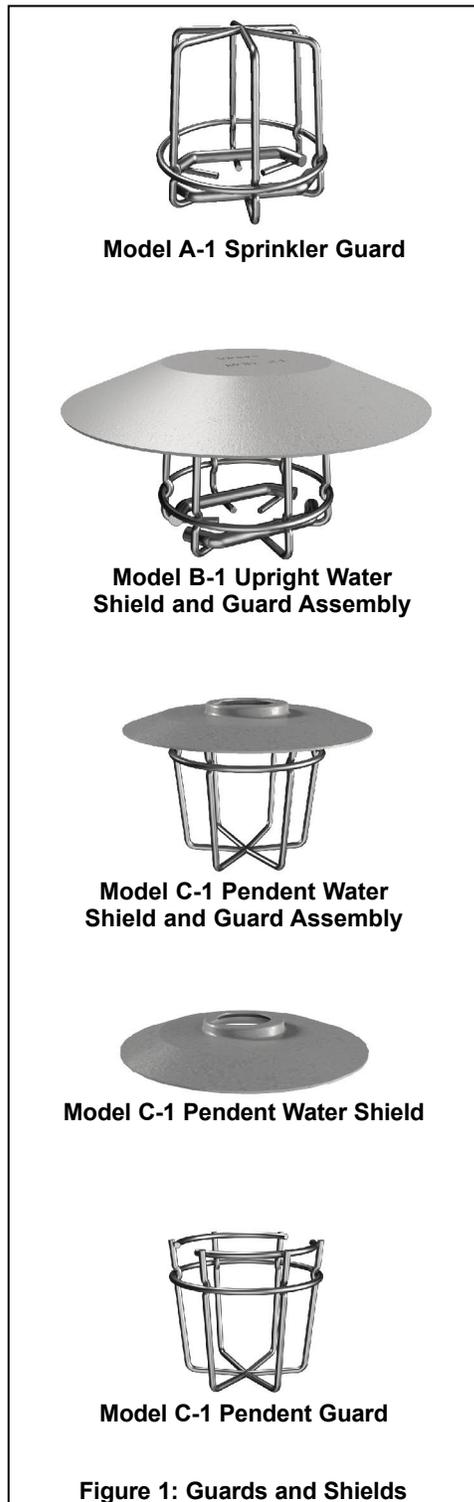
**Water Shields:** UNS-G10080 Cold Rolled Steel

**TABLE 1: ORDERING INFORMATION**

Sprinklers must be ordered separately. Refer to the appropriate sprinkler Technical Data Page

Part Number	Description	Size	
		NPT	BSP
05446A	Model A-1 Guard	1/2"	15 mm
21934	Model A-1 Guard	3/4"	20 mm
05866A	Model B-1 Guard with shield	1/2"	15 mm
06509A	Model C-1 Guard with shield	1/2"	15 mm
06682A	Model C-1 Guard with shield	3/4"	20 mm
06467B	Model C-1 Water Shield	1/2"	15 mm
06656B	Model C-1 Water Shield	3/4"	20 mm
06471A*	Model C-1 Guard	1/2"	15 mm
06471A*	Model C-1 Guard	3/4"	20 mm

\* Must be installed in conjunction with the Model C-1 Water Shield.



**Figure 1: Guards and Shields**



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### 4. INSTALLATION

**NOTE:** Viking Model A-1, B-1, and C-1 Sprinkler Water Shields and Guards are not available factory pre-assembled with the sprinklers. They must be ordered separately and then field installed onto the Viking frame style sprinklers.

Refer to the appropriate Viking sprinkler Technical Data Page for warnings and additional installation instructions. Then install units according to the following steps.

#### A. MODEL A-1 SPRINKLER GUARD

Viking frame style sprinklers must be installed on the system prior to adding the Model A-1 Sprinkler Guards onto the sprinklers. After the sprinklers are installed:

1. Remove the retaining ring from the Model A-1 Sprinkler Guard.
2. Spread and hold the two bracket halves at the base of the guard just enough to place the guard over the deflector and wrench boss of the sprinkler.

#### NOTICE

**Excessive spreading of the guard may break the weld.**

3. With the sprinkler inside the sprinkler guard, orient the guard with the heavy wire base parallel to the sprinkler wrench boss. The two halves of the bracket should grip the sprinkler in the slot between the wrench boss and the threads.
4. Press the retaining ring over the guard and toward the base of the sprinkler until the ring snaps firmly into the depressions provided on each of the six wire members of the guard.

#### Removal:

To remove, reverse the instructions. If the sprinkler must also be removed, follow the system instructions and notify appropriate personnel.

#### B. MODEL B-1 UPRIGHT SPRINKLER WATER SHIELD AND GUARD ASSEMBLY

The Model B-1 Upright Water Shield and Guard are available as a welded assembly only. Viking frame style upright sprinklers must be installed on the system prior to installing the Model B-1 Upright Water Shield and Guard Assembly onto the sprinklers. After the sprinklers are installed:

1. Position the retaining ring against the water shield.
2. Spread and hold the two bracket halves at the base of the guard just enough to place the guard over the deflector and wrench boss of the sprinkler.

#### NOTICE

**Excessive spreading of the guard may break the weld.**

3. With the sprinkler inside the sprinkler guard, orient the guard with the heavy wire base parallel to the sprinkler wrench boss. The two halves of the bracket should grip the sprinkler in the slot just below the wrench boss, and above the threads.
4. Press the retaining ring down until it slides into the notches in the six wire members of the guard.

#### Removal:

To remove, reverse the instructions. If the sprinkler must also be removed, follow the system instructions and notify appropriate personnel.

#### C. MODEL C-1 PENDENT SPRINKLER WATER SHIELDS AND GUARDS

The Model C-1 Pendent Water Shields can be installed with or without the Model C-1 Guard. However, the Model C-1 Guard cannot be installed without the Model C-1 Water Shield.

#### Water Shield:

1. Thread the Viking frame style pendent sprinkler into the shield. The concave surface of the shield should face the sprinkler deflector.
2. Apply a small amount of pipe-joint compound or tape to the external threads of the sprinkler only, taking care not to allow a build-up of compound in the sprinkler inlet.
3. Install the sprinkler unit on the piping using the standard sprinkler wrench. DO NOT use the shield to start or thread the sprinkler into the fitting.
4. Tighten the sprinkler until the water shield is snug against the face of the fitting.



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### C-1 Guard with Water Shield:

Viking frame style pendent sprinklers and Model C-1 Water Shields must be installed on the system prior to installing the Model C-1 Guard onto the sprinkler. If the Model C-1 Guard is used:

1. Remove the retaining ring from the guard.
2. Place the Model C-1 Guard over the sprinkler.
3. Spread each half of the cage slightly and gently push the cage onto the shield retainer until it snaps into place.

### NOTICE

**Excessive spreading of the guard may break the weld.**

4. Slide the retaining ring onto the cage by pressing up until it locks into the notches on each of the six wire cage members.

### Removal:

To remove, reverse the instructions. If the sprinkler must also be removed, follow the system instructions and notify appropriate personnel.

## 5. OPERATION

Refer to the sprinkler technical data page for the sprinkler model used. Water shields protect the sprinklers' heat-sensing operating element from water spray discharge from sprinklers located at a higher elevation. The Sprinkler Guard is a hard-wire cage designed to encase the sprinkler and protect it from mechanical damage.

## 6. INSPECTIONS, TESTS AND MAINTENANCE

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

## 7. AVAILABILITY

Viking sprinkler water shields and guards 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.

### NOTICE

#### IMPORTANT

- Viking Model A-1, B-1, and C-1 Sprinkler Water Shields and Guards are used in conjunction with Viking frame style 1/2" or 3/4" NPT (15 mm or 20 mm BSP) upright or pendent sprinklers where allowed by the approvals. (Refer to the Approval Chart.)
- Model A-1, B-1 and C-1 Sprinkler Water Shields and Guards are NOT designed to be used on sprinklers installed in recessed escutcheons.
- Always refer to Bulletin Form No. F\_091699 - Care and Handling of Sprinklers. Also refer to the appropriate sprinkler data page. Viking sprinklers are designed to be installed in accordance with the latest edition of Viking technical data, the latest 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 use of certain types of sprinklers may be limited due to occupancy and hazard. Refer to the Authority Having Jurisdiction prior to installation.

### ⚠ WARNING

Viking products are manufactured and tested to meet the rigid requirements of the approving agency. The sprinklers are designed to be installed in accordance with recognized installation standards. Deviation from the standards or any alteration to the sprinkler after it leaves the factory including, but not limited to: painting, plating, coating, or modification, may render the sprinkler inoperative and will nullify the approval and any guarantee made by The Viking Corporation.



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APPROVAL CHART			
Guard Model	Sprinkler SIN	FM	VdS
A-1	VK100	✓	
	VK102	✓	
	VK108	✓	
	VK110		✓ <sup>1</sup>
	VK130	✓	
	VK132	✓	
	VK200	✓	
	VK202	✓	✓ <sup>1</sup>
	VK206	✓	✓ <sup>1</sup>
	VK300	✓	
	VK302	✓	✓ <sup>1</sup>
	VK350	✓	
VK352	✓	✓ <sup>1</sup>	
B-1	VK100	✓	
	VK108	✓	
	VK200	✓	
	VK300	✓	
	VK350	✓	
C-1	VK102		✓ <sup>1</sup>
	VK110		✓ <sup>1</sup>
	VK202		✓ <sup>1</sup>
	VK206	✓	✓ <sup>1</sup>
	VK302	✓	✓ <sup>1</sup>
	VK352	✓	✓ <sup>1</sup>
<sup>1</sup> For VdS, only the 3/4" guard PN 06656B is approved. <sup>2</sup> This table shows the listing and approvals available at the time of printing. Other approvals may be in process.			



## 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

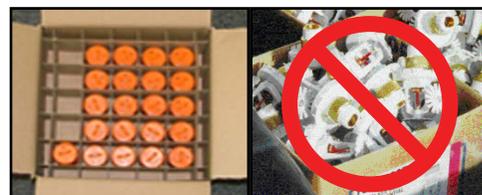
3/4" NPT: 20 ft-lbs.

1" NPT: 30 ft-lbs.



**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**

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](http://www.vikinggroupinc.com).



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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](http://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](http://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 <sup>1</sup>	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

<sup>1</sup> 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](http://www.vikinggroupinc.com).