1. DESCRIPTION

Viking MicrofastHP® Quick Response Fusible Element Horizontal Sidewall Sprinkler VK320 is a small thermosensitive solder link spray sprinkler available with various finishes and temperature ratings to meet design requirements. The special Polyester and PTFE coatings can be used in decorative applications where colors are desired.

2. LISTINGS AND APPROVALS

**cULus Listed:** Category VNIV

Refer to Approval Chart 1 and Design Criteria for cULus Listing requirements that must be followed.

3. TECHNICAL DATA

**Specifications:**
- Minimum Operating Pressure: 7 psi (0.5 bar)
- Maximum Working Pressure: 250 psi (17 bar)
- Factory tested hydrostatically to 500 psi (34.5 bar)
- Nominal K-Factor: 5.6 U.S. (80.6 metric†)

† Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.

**Overall Length:** 2-11/16" (68 mm)

**Material Standards:**
- Frame Casting: Brass UNS-C84400
- Deflector: Copper UNS-C19500
- Fusible Element Assembly: Nickel Alloy
- Trigger and Support: Stainless Steel UNS-S31600
- Seat and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400
- Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape
- Screw: Brass UNS-C36000

For PTFE Coated Sprinklers:
- Belleville Spring-Exposed, Screw-Nickel Plated, Pip Cap-PTFE Coated

For Polyester Coated Sprinklers:
- Belleville Spring-Exposed

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

Order Quick Response Fusible Link Horizontal Sidewall Sprinklers 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 = F, White Polyester = M-W, Black Polyester = M-B, and Black PTFE = N

**Temperature Suffix:** (°F/°C): 165°/74° = C, 205°/96° = E, and 280°/138° = G

For example, sprinkler VK320 with a Brass finish and a 165 °F/74 °C temperature rating = Part No. 13955AC

**Available Finishes And Temperature Ratings:**

Refer to Table 1.

**Accessories:** (Also refer to the Viking website.)

**Sprinkler Wrenches:**
- B. Wrench for recessed sprinklers with protective shields: Part No. 13655WB** (available since 2003)
  **“A ½” ratchet is required (not available from Viking).**

**Sprinkler Cabinets:**
- A. Six-head capacity: Part No. 01724A (available since 1971)
- B. Twelve-head capacity: Part No. 01725A (available since 1971)

4. INSTALLATION

Refer to appropriate NFPA Installation Standards.
5. OPERATION
During fire conditions, the heat-sensitive fusible element assembly disengages, releasing the seat and spring assemblies to open the waterway. Water flowing through the sprinkler orifice strikes the sprinkler deflector, forming a uniform spray pattern to extinguish or control the fire.

6. INSPECTIONS, TESTS AND MAINTENANCE
Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

7. AVAILABILITY
Viking Quick Response Horizontal Sidewall 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.

### TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

<table>
<thead>
<tr>
<th>Sprinkler Temperature Classification</th>
<th>Sprinkler Nominal Temperature Rating$^1$</th>
<th>Maximum Ambient Ceiling Temperature$^2$</th>
<th>Frame Paint Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordinary</td>
<td>165 °F (74 °C)</td>
<td>100 °F (38 °C)</td>
<td>None</td>
</tr>
<tr>
<td>Intermediate</td>
<td>205 °F (96 °C)</td>
<td>150 °F (65 °C)</td>
<td>White</td>
</tr>
<tr>
<td>High</td>
<td>280 °F (138 °C)</td>
<td>225 °F (107 °C)</td>
<td>Blue</td>
</tr>
</tbody>
</table>

Sprinkler Finishes: Brass, Chrome, White Polyester$^3$, Black Polyester$^3$, and Black PTFE$^3$

**Footnotes**

$^1$ Decorative sprinklers may not be color coded. The temperature rating is stamped on the deflector.

$^2$ 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.

$^3$ For automatic sprinklers, the coatings indicated are applied to the exposed exterior surfaces only. Note that the spring is exposed on sprinklers with Polyester and PTFE coatings. For PTFE coated open sprinklers only, the waterway is coated.

**Figure 1:**
Standard Sprinkler Wrench 21475MB
## Approval Chart 1 (UL)

**MicrofastHP® Quick Response Fusible Element**  
**HSW Sprinkler VK320**

### Technical Data

**Maximum 250 PSI WWP**  
For Light or Ordinary Hazard Occupancies

Deflector must be located 4” to 12” (102 mm to 305 mm) below the ceiling.

<table>
<thead>
<tr>
<th>Base Part Number</th>
<th>SIN</th>
<th>Maximum Pressure</th>
<th>Thread Size</th>
<th>Nominal K-Factor</th>
<th>Overall Length</th>
<th>Listings and Approvals</th>
</tr>
</thead>
<tbody>
<tr>
<td>13955</td>
<td>VK320</td>
<td>250 psi</td>
<td>NPT 1/2</td>
<td>5.6</td>
<td>2-11/16</td>
<td>A1Y, B1X</td>
</tr>
</tbody>
</table>

### Approved Temperature Ratings

- **A** - 165 °F (74 °C), 205 °F (96 °C), 280 °F (138 °C)
- **B** - 165 °F (74 °C) and 205 °F (96 °C)

### Approved Finishes

1. Brass, Chrome, White Polyester, Black Polyester, and Black PTFE

### Approved Escutcheons

- **X** - Installed with standard surface-mounted escutcheons or recessed with the Viking Micromatic® Model E-1, E-2, E-3 or G-1 Recessed Escutcheon
- **Y** - Installed with standard surface-mounted escutcheons

### Footnotes

1. Base part number shown. For complete part number, refer to Viking’s current price schedule.
2. Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.
3. This table shows the listings and approvals available at the time of printing. Other approvals may be in process.
4. Listed by Underwriters Laboratories Inc. for use in the U.S. and Canada.
5. Meets New York City requirements, effective July 1, 2008.
6. Other colors are available on request with the same Listings and Approvals as the standard colors.

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**DESIGN CRITERIA - UL**  
(Also refer to Approval Chart 1 above.)

**cULus Listing Requirements:**

Quick Response Horizontal Sidewall Sprinkler VK320 is cULus Listed as indicated in the Approval Chart for installation in accordance with the latest edition of NFPA 13 for sidewall standard spray sprinklers.

- Designed for use in Light or Ordinary Hazard occupancies.
- Protection areas and maximum spacing shall be in accordance with the tables provided in NFPA 13. Minimum spacing allowed is 6 ft. (1.8 m).
- Refer to the Approval Chart for allowable deflector distance below the ceiling. Align with the leading edge of the deflector parallel to the ceiling.
- Maximum distance from end walls shall be no more than one-half of the allowable distance between sprinklers. The distance shall be measured perpendicular to the wall. Minimum distance from end walls is 4 in. (102 mm).
- The sprinkler installation and obstruction rules contained in NFPA 13 for sidewall standard spray sprinklers must be followed.

**IMPORTANT:** Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to Form No. F_080614 for general care, installation, and maintenance information. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate standards of NFPA, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.
Step 1: Carefully slide the wrench sideways around the deflector, ensuring engagement with the sprinkler wrench flats.

Sprinkler wrench 13655WB** must be used for installing wax coated sprinklers.

** A 1/2" ratchet is required (not available from Viking)

Step 2: Carefully press the wrench onto the sprinkler wrench flats.

**Figure 2: Wrench 13655WB for Recessed Sprinklers**

Wall Opening Size:
2-5/16" (59 mm) minimum
2-1/2" (64 mm) maximum

Installed with a Standard 1/8" Surface-Mounted Escutcheon

**Figure 3: Sidewall Sprinkler Dimensions with a Standard Escutcheon**
MicrofastHP® QUICK RESPONSE FUSIBLE ELEMENT HSW HIGH PRESSURE SPRINKLER VK320 (K5.6)

TECHNICAL DATA

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.

Figure 4: Sidewall Sprinkler Dimensions with the Model E-1 and E-2 Recessed Escutcheons

Wall Opening Size:
2-5/16" (59 mm) minimum
2-1/2" (64 mm) maximum

Installed with the Micromatic Model E-1 Recessed Escutcheon

Installed with the Threaded Model E-2 Recessed Escutcheon

Step 2: Carefully press the wrench onto the sprinkler wrench flats.

Figure 5: Sidewall Sprinkler Dimensions with the Model G-1 Escutcheon

Wall opening size with the Model G-1 Escutcheon:
2-5/8" (66 mm) minimum
3-3/4" (95 mm) maximum

** A 1/2" ratchet is required (not available from Viking)