1. DESCRIPTION
The Viking Microfast® Quick Response Fusible Element Horizontal Sidewall Sprinkler VK334 is a small thermosensitive solder link spray sprinkler available with various finishes and temperature ratings to meet design requirements. The special Polyester, PTFE and Electroless Nickel PTFE (ENT) coatings can be used in decorative applications where colors are desired. In addition, the ENT coating has been investigated for installation in corrosive environments and is listed/approved as indicated in the Approval Charts.

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: 175 psi (12 bar), Factory tested hydrostatically to 500 psi (34.5 bar)
   Deflector (Sprinkler 13949): U.S.A. Patent No. 4,296,816
   Thread Size: 1/2” (15 mm) NPT
   Nominal K-Factor: 2.8 U.S. (40.3 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: 2-1/2” (64 mm)
   Material Standards:
   Frame Casting: Brass UNS-C84400
   Deflector: Copper UNS-C19500
   Bushing: Brass UNS-C36000
   Fusible Element Assembly: Nickel Alloy
   Trigger and Support: Stainless Steel UNS-S31600
   Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape
   Seat and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400
   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
   For ENT Coated Sprinklers: Belleville Spring-Exposed, Screw and Pip Cap ENT Plated
   Ordering Information: (Also refer to the current Viking price list.)
   Order Quick Response Horizontal Sidewall Fusible Element Sprinkler VK334 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, Black PTFE = N, and ENT = JN
   Temperature Suffix: 165 °F / 74 °C = C, 205 °F / 96 °C = E, and 280 °F / 138 °C = G
   For example, sprinkler VK334 with a Brass finish and a 165 °F / 74 °C temperature rating = Part No. 13962AC
   Available Finishes And Temperature Ratings: Refer to Table 1.
   Accessories: (Also refer to the Viking website.)
   Sprinkler Wrenches (see Figure 1):
   A. Standard Wrench: Part No. 21475M/B (available since 2017).
   B. Wrench for recessed sprinklers with protective shields: Part No. 13655W/B** (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.

Figure 1: Sprinkler Wrenches
TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

<table>
<thead>
<tr>
<th>Sprinkler Temperature Classification</th>
<th>Sprinkler Nominal Temperature Rating¹</th>
<th>Maximum Ambient Ceiling Temperature²</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 Polyester⁵, Black Polyester⁵, Black PTFE⁶, and ENT³,⁴

Corrosion Resistant Sprinkler Coatings: ENT³,⁴

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 The corrosion resistant coatings have passed the standard corrosion test required by the approving agencies indicated in the Approval Chart(s). These tests cannot and do not represent all possible corrosive environments. Prior to installation, verify through the end-user that the coatings are compatible with or suitable for the proposed environment. Note that the spring is exposed on sprinklers with ENT coatings. For ENT coated automatic sprinklers, the waterway is coated.
⁴ cULus Listed as corrosion resistant.
⁵ 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.
⁶ A 1/2" ratchet is required (not available from Viking)

Step 1: Carefully slide the wrench sideways around the deflector, ensuring engagement with the sprinkler wrench flats.

Sprinkler wrench 13655W/B** must be used for installing recessed HSW 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 13655W/B for Recessed Sprinklers
## Approval Chart 1 (UL)

**Quick Response Fusible Element Horizontal Sidewall Sprinkler VK334**

<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>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>NPT BSPT U.S. metric</td>
<td>Inches mm</td>
<td>cULus(^a) LPCB</td>
</tr>
<tr>
<td>13962(^a)</td>
<td>VK334</td>
<td>175 psi</td>
<td>1/2&quot; 15 mm</td>
<td>2.8 40.3</td>
<td>2-9/16 64</td>
</tr>
<tr>
<td>20990</td>
<td>VK334</td>
<td>175 psi</td>
<td>1/2&quot; 15 mm</td>
<td>2.8 40.3</td>
<td>2-9/16 64</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\(^a\), Black Polyester\(^a\), and Black PTFE
2 - ENT\(^7\)

**Approved Escutcheons**

X - Installed with standard surface-mounted escutcheons
Y - Installed with standard surface-mounted escutcheons or recessed with the Viking Micromatic\(^a\) Model E-1, E-2, E-3, or G-1 Recessed Escutcheon
Z - Installed with standard surface-mounted escutcheons or recessed with the Viking Micromatic\(^a\) Model E-1 Recessed Escutcheon

**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 Other colors are available on request with the same Listings and Approvals as the standard colors.
6 The sprinkler orifice is bushed.
7 cULus Listed as corrosion resistant.

## DESIGN CRITERIA - UL

(Also refer to Approval Chart 1 above.)

**cULus Listing Requirements:**

Quick Response Horizontal Sprinkler VK334 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.

- Small orifice sprinklers are limited to Light Hazard Occupancies with hydraulically calculated wet systems only.
- 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.
- Align the top of the deflector parallel with 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.
Figure 3: Sidewall Sprinkler Dimensions with a Standard Escutcheon

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

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

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