



## TECHNICAL DATA SHEET

## FREEDOM RESIDENTIAL VK471 PENDENT SPRINKLER K3.7 (53.3)

### 1. PRODUCT IDENTIFICATION

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

Freedom Residential VK471 Pendent Sprinkler K3.7 (53.3)

### 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 or FM.
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](http://www.P65Warnings.ca.gov)

### 3. LISTING AND APPROVALS

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





## TECHNICAL DATA SHEET

## FREEDOM RESIDENTIAL VK471 PENDENT SPRINKLER K3.7 (53.3)

### 4. TECHNICAL SPECIFICATIONS

#### 4.1 Ratings and Physical Characteristics

Parameter	Value
Minimum operating pressure	7 PSI (0.5 bar)
Maximum rated pressure	See section 5
Factory-tested pressure	500 PSI (35 bar)
Thread size	1/2" NPT
Nominal K-factor	3.7 U.S. (53.3)
Minimum temperature rating (glass bulb)	-65 °F (-55 °C)

#### 4.2 Markings and Dimensions

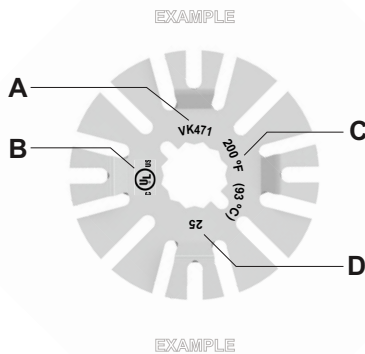


Figure – 1: Markings

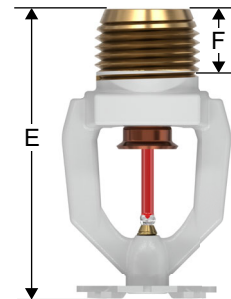


Figure – 2: Dimensions

Ref	Description	Value
A	Manufacturer's Sprinkler Identification Number (SIN)	VK471
B	Listings and Approvals	See sections 3 and 5
C	Nominal temperature rating	See marking
D	Manufacturing date	2025
E	Height	2¼" (58 mm)
F	Nominal pipe engagement	7/16" (11 mm)



## TECHNICAL DATA SHEET

## FREEDOM RESIDENTIAL VK471 PENDENT SPRINKLER K3.7 (53.3)

### 4.3 Materials of Construction

## NOTICE

Do not disassemble the sprinkler.

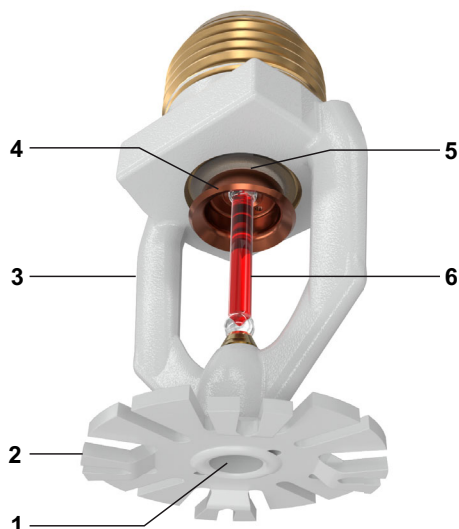


Figure – 3 Sprinkler Components

Ref	Description	Material
1	Compression screw	Brass UNS-C36000
2	Deflector	Phosphor bronze UNS-C51000
3	Sprinkler body casting	DZR Brass
4	Pip cap assembly	Copper UNS-C11000 and stainless steel UNS-30400
5	Belleville spring	Nickel alloy, coated with PTFE
6	Bulb	Glass, nominal 0.19" (3 mm) diameter


**TECHNICAL DATA SHEET**
**FREEDOM RESIDENTIAL  
VK471 PENDENT SPRINKLER  
K3.7 (53.3)**
**5. LISTING AND APPROVAL DESIGN REQUIREMENTS**
**5.1 Listing and Approval Specifications**

**NOTE:** Refer to Table 5.1 below for systems designed to NFPA 13D or NFPA 13R. For systems designed to NFPA 13, refer to “cULus Listing Requirements and Details” on page 5.

**Table 5.1: Listing and Approval Specifications (NFPA 13D or 13R)**

Sprinkler Base Part Number <sup>1</sup>	Thread Size		Nominal K-Factor		Maximum Water Working Pressure
	NPT	BSPT	U.S.	metric	
25642	1/2"	--	3.7	53.3	175 PSI (12 bar)
Max. Coverage Area Ft. x Ft. (m x m)	Ordinary Temp. Rating (155°F/68°C)		Intermediate Temp. Rating (200°F/93°C)		Approvals
	Flow <sup>5</sup> GPM (L/min)	Pressure <sup>5</sup> PSI (L/min)	Flow <sup>5</sup> GPM (L/min)	Pressure <sup>5</sup> PSI (L/min)	cULus
12 x 12 (3.7 x 3.7)	10 (37.9)	7.3 (0.50)	10 (37.9)	7.3 (0.50)	A1W
14 x 14 (4.3 x 4.3)	10 (37.9)	7.3 (0.50)	10 (37.9)	7.3 (0.50)	A1W
16 x 16 (4.6 x 4.6)	13 (49.2)	12.3 (0.82)	13 (49.2)	12.3 (0.82)	A1W
18 x 18 (4.9 x 4.9)	17 (64.43)	21.1 (1.44)	17 (64.43)	21.1 (1.44)	B1W
<b>Approval Specification (Temperature Ratings) Key:</b>					
A = 155 °F (68 °C) & 200 °F (93 °C)					
B = 155 °F (68 °C)					
<b>Approval Specification (Finishes) Key:</b>					
1 = Brass, chrome, white polyester <sup>2,3</sup> , black polyester <sup>2,3</sup> , and ENT <sup>3,4</sup>					
<b>Approval Specification (Escutcheons) Key:</b>					
W = Installed with standard surface-mounted escutcheons or recessed with the Model E-1, E-2, or E-3 recessed escutcheon					
<b>Footnotes</b>					
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. UL Listed as corrosion-resistant.					
5. For areas of coverage smaller than shown, use the flow and pressure for the next larger area listed. Flows and pressures shown are per sprinkler.					



## 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 13D or 13R for residential pendent sprinklers.

For guidelines concerning spacing of residential sprinklers near beams, obstructions, heat sources, and sloped ceilings refer to the applicable NFPA standard and the Authority Having Jurisdiction (AHJ). Sloped, beamed, and pitched ceilings could require special design features such as larger flow, or a design for more sprinklers to operate in the compartment, or both.

### For systems designed to NFPA 13:

The number of design sprinklers is to be the four contiguous most hydraulically demanding sprinklers. The minimum required discharge from each of the four sprinklers is to be the greater of:

1. The flow rates given in Table 5.1 for NFPA 13D and 13R applications for each listed area of coverage  
**OR**
2. calculated based on a minimum discharge of  $0.1 \text{ gmp/ft}^2$  over the "design area" in accordance with NFPA 13.

Additionally, the following requirements must be met:

- Minimum spacing: 8 ft. (2.4 m)
- Maximum spacing: refer to Table 5.1 (no greater than the maximum Listed coverage area)
- Distance from walls: not greater than 1/2 the Listed sprinkler spacing and not less than 4 inches (102 mm) from walls, partitions, or obstructions as defined in the applicable standards.
- Deflector position (pendent orientation only): 1 to 4 inches (25 to 102 mm) below smooth ceilings with the deflector parallel to the ceiling or roof.
- Venting is not required.

## 5.3 WaterMark

WaterMark Certificate WMTS-486, WM-022899

## 5.4 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 Electroless Nickel PTFE (ENT) finish passed the UL 199 thirty-day corrosion test and is cULus Listed 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 ferric chloride. Ferric Chloride is commonly used in indoor pool areas as a PH level balancer. The ENT finish is not recommended for these applications.

## 5.5 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. The maximum expected ceiling temperature must be known before selecting the appropriate temperature classification.

Before ordering a sprinkler, use a maximum-reading thermometer to determine the maximum expected temperature. In addition, refer to recognized installation rules which may require a higher temperature classification to be used. The rules may depend upon the following criteria:

- Sprinkler location
- Occupancy classification
- Commodity classification
- Storage height
- Other nearby 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**
**FREEDOM RESIDENTIAL  
VK471 PENDENT SPRINKLER  
K3.7 (53.3)**
**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: 25642MB/W** = VK471 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
25642	1/2" NPT	Brass	A	155 °F (68 °C)	Red	100 °F (38 °C)	B
		Chrome	F	200 °F (93 °C)	Green	150 °F (65 °C)	E
		White polyester	M-/W				
		Black polyester	M-/B				
		ENT	JN				

## 6.2 Sprinkler Accessories



Figure – 4: Sprinkler Accessories

Ref	Part Number	Description
1	13577W/B	Recessed sprinkler socket wrench
2	21475M/B	Straight wrench: required for proper installation
3	15915	Cover plate and escutcheon outer cup installer tool
4	01725A	Sprinkler cabinet (6-12 sprinklers)
5	01724A	Sprinkler cabinet (up to 6 sprinklers)

## 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](http://www.vikinggroupinc.com/locations) OR Europe, Middle East, Africa (EMEA): [www.viking-emea.com/contact](http://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](mailto:techsvcs@vikingcorp.com)

### Importer EU:

Viking S.A.  
21, Z.I. Haneboesch  
L-4562 Differdange / Nieder Korn  
Tel.: +352 58 37 37 – 1  
Fax: +352 58 37 36  
[vikinglux@viking-emea.com](mailto: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](mailto:vikingAPAC@vikingcorp.com)



## HANDLING AND INSTALLATION INSTRUCTIONS

## RESIDENTIAL PENDENT SPRINKLERS

### 1. PRODUCT IDENTIFICATION

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

**VK471 Freedom Residential Pendent Sprinkler K3.7 (47)**

### 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*.

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





## HANDLING AND INSTALLATION INSTRUCTIONS

## RESIDENTIAL PENDENT SPRINKLERS

### 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. Refer to Figure 1.

- 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.

Images are representative only. Your sprinkler may vary.

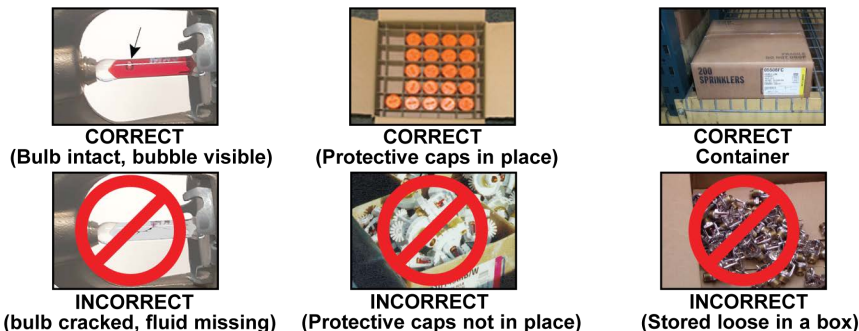


Figure – 1: Sprinkler Handling Best Practices

#### 4. INSTALLATION

### 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)

### 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.

Ceiling Opening Size:

MIN: 2<sup>5</sup>/<sub>16</sub>" (59 mm)

MAX: 2<sup>1</sup>/<sub>2</sub>" (64 mm)

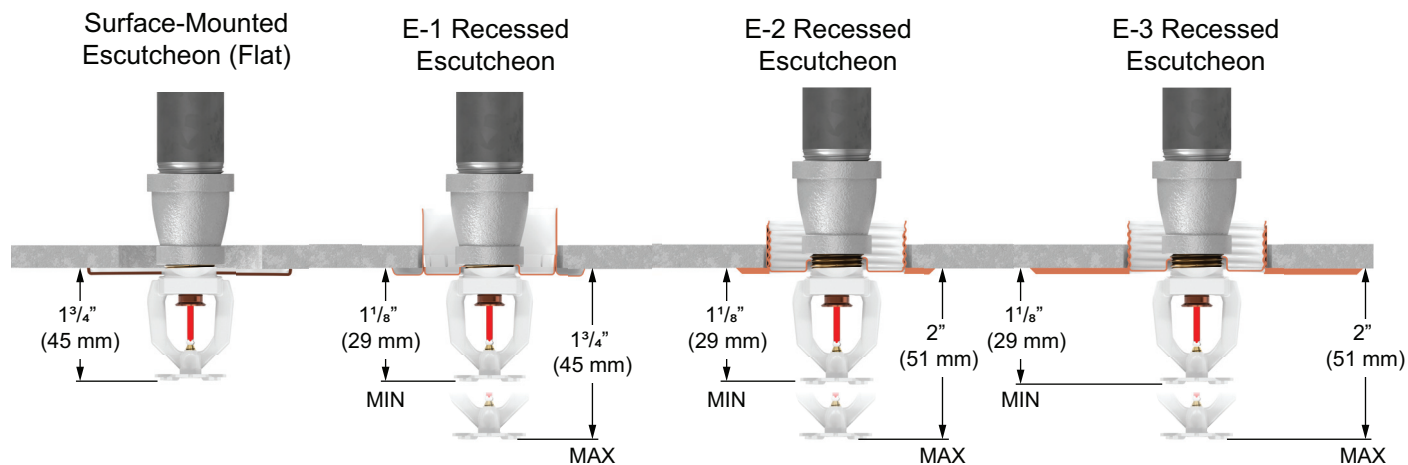


Figure – 2 Installation Dimensions with Viking Escutcheons

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. If applicable, 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).

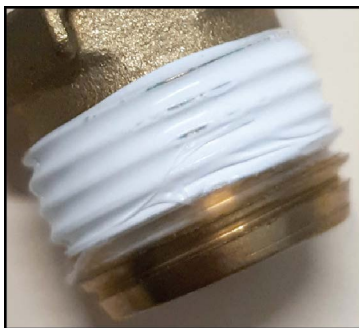


Figure – 3: Sealing the Threads

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 ensure engagement with the sprinkler wrench flats.
  - b) **For the standard sprinkler wrench (Figure 3b):** Carefully slide the wrench onto the sprinkler wrench flats.

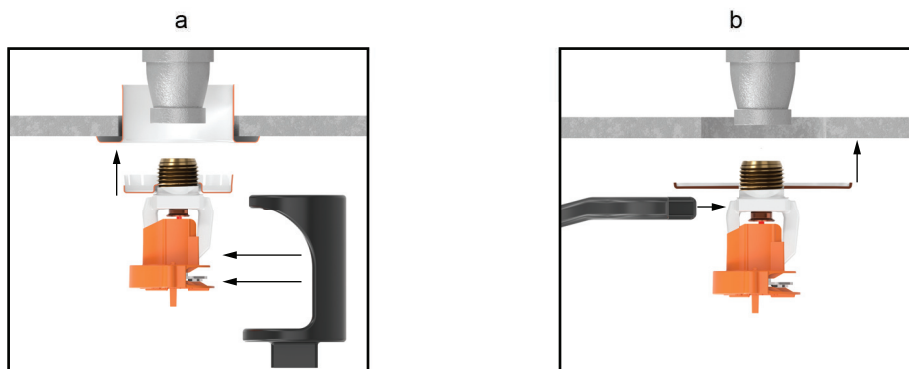


Figure – 4: Installing the Sprinkler



## HANDLING AND INSTALLATION INSTRUCTIONS

## RESIDENTIAL 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 torque of 20 ft-lbs (27,1 Nm).

Tighten the sprinkler as necessary. **DO NOT EXCEED THE MAXIMUM TORQUE SPECIFIED ABOVE.**

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	Manufacturer's Sprinkler Identification Number (SIN)	<p style="text-align: center;">EXAMPLE</p> <p style="text-align: center;">Figure – 5: Deflector Markings</p>
B	Listings/Approval mark(s)	
C	Nominal temperature rating	
D	Manufacture date	

## 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](http://www.vikinggroupinc.com/locations) OR Europe, Middle East, Africa (EMEA): [www.viking-emea.com/contact](http://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](mailto: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](mailto: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](mailto:vikingAPAC@vikingcorp.com)



## OPERATION AND MAINTENANCE INSTRUCTIONS

## RESIDENTIAL PENDENT SPRINKLERS

### 1. PRODUCT IDENTIFICATION

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

**VK471 Freedom Residential Pendent Sprinkler K3.7 (47)**

### **WARNING**

Cancer and Reproductive Harm [www.P65Warning.ca.gov](http://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.



## OPERATION AND MAINTENANCE INSTRUCTIONS

## RESIDENTIAL PENDENT SPRINKLERS

### **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.



## OPERATION AND MAINTENANCE INSTRUCTIONS

## RESIDENTIAL PENDENT SPRINKLERS

### **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](http://www.vikinggroupinc.com/locations) OR Europe, Middle East, Africa (EMEA): [www.viking-emea.com/contact](http://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](mailto:techsvcs@vikingcorp.com)

### **Importer EU:**

Viking S.A.  
21, Z.I, Haneboesch  
L-4562 Differdange / Nieder Korn  
Tel.: +352 58 37 37 – 1  
Fax: +352 58 37 36  
[vikinglux@viking-emea.com](mailto: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](mailto:vikingAPAC@vikingcorp.com)





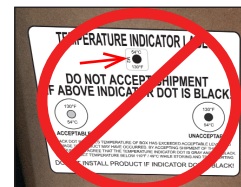
## BULLETIN

## BEST PRACTICES FOR RESIDENTIAL SPRINKLER HANDLING & INSTALLATION

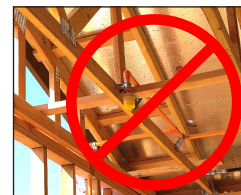
The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058  
 Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com  
 Visit the Viking website for the latest edition of this technical data page.

### SPRINKLERS ARE FRAGILE - HANDLE WITH CARE!

- Always keep sprinklers in a cool dry place.
- Protect sprinklers during storage, transport and handling as well as before, during and after installation. Refer to Viking's Care and Handling of Sprinklers Bulletin [Form No. F\\_091699<sup>2</sup>](#).
- Proper transit, storage and installation of sprinklers in a high-heat environment is a must. Care should be taken to prevent sprinklers from being exposed to ambient heat conditions in excess of those referenced in installation standards.
- Do not stage or store sprinklers on the job site in advance in a non-conditioned space prior to installation.
- Keep sprinklers in the original packaging and check temperature indicators on box label prior to installation. If the indicator has turned black, DO NOT install any product contained in the box. Refer to Viking product return policies.
- Temperatures exceeding the maximum ambient temperature of the sprinkler temperature-rating during storage, transport, handling and installation must be avoided.
- Per NFPA standards 13, 13R, and 13D, sprinklers installed where maximum ambient temperatures are at or over 101 °F (38 °C ) through 150 °F (66 °C) shall be intermediate temperature-rated sprinklers. Additionally, if sprinklers are installed in an unventilated concealed space under an uninsulated roof or in an unventilated attic, they shall be of intermediate temperature classification.
- Sprinklers installed where ambient temperatures are at or below 100 °F (38 °C) may be either ordinary or intermediate temperature-rated sprinklers. Refer to NFPA standards 13R 6.2.3.1 and 13D 7.5.6.1.
- Rough-in of sprinkler piping during hot weather conditions should not include the installation of sprinklers unless reasonable ambient temperatures can be maintained. Ambient temperatures that are considered when choosing the temperature rating for a sprinkler should take into account the range of ambient temperatures that are expected from installation through establishment and maintenance of temperature in a conditioned space. Appropriate insulation may be considered. **Example:** An ordinary temperature sprinkler should not be exposed to maximum ambient temperature higher than 100 °F (38 °C) or more. Refer to NFPA 13, Table 6.2.5.1, NFPA 13R, 6.2.3.1 and NFPA 13D, 7.5.6.1.
- CPVC fire sprinkler products exposed to high ambient temperatures (e.g. installed in unventilated, concealed spaces such as attics) should be insulated to maintain a cooler environment. Refer to Viking Plastics Installation and Design Manual, [Form No. F\\_080712<sup>2</sup>](#), for care and handling procedures.
- Protect all sprinklers and connecting CPVC piping in attic spaces and unvented concealed spaces from excessive heat exposure above 100 °F (38 °C). To separate excessive attic heat, properly tent and fully insulate all pipe in unconditioned spaces.
- Pressure relief valves should be installed on wet sprinkler systems where there is a risk of over-pressurization of a checked water supply, due to thermal expansion. Refer to NFPA 13, 7.1.2.1 and NFPA 13D, A.5.2.2.2.
- Fire sprinkler systems should be installed per current referenced editions of building codes and installation standards adopted in the jurisdiction where work is being performed.



**INCORRECT**  
(Heat exposure)



**INCORRECT**  
(Unconditioned at rough-in)



**INCORRECT**  
(Exposed piping)



**INCORRECT**  
(No pressure relief valve)

**WARNING:** Cancer and Reproductive Harm-  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

<sup>1</sup>Hot weather condition is defined as temperatures that can reach the maximum ambient temperature-rating of the sprinkler.

<sup>2</sup>Clicking on blue hyperlink will open referenced document.

### ⚠ 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).**



**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](mailto: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**

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](http://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](http://www.vikinggroupinc.com) or contact Viking directly.