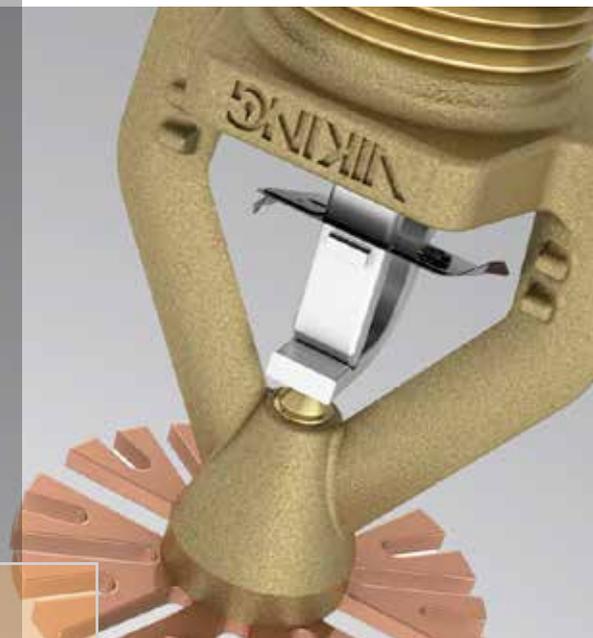
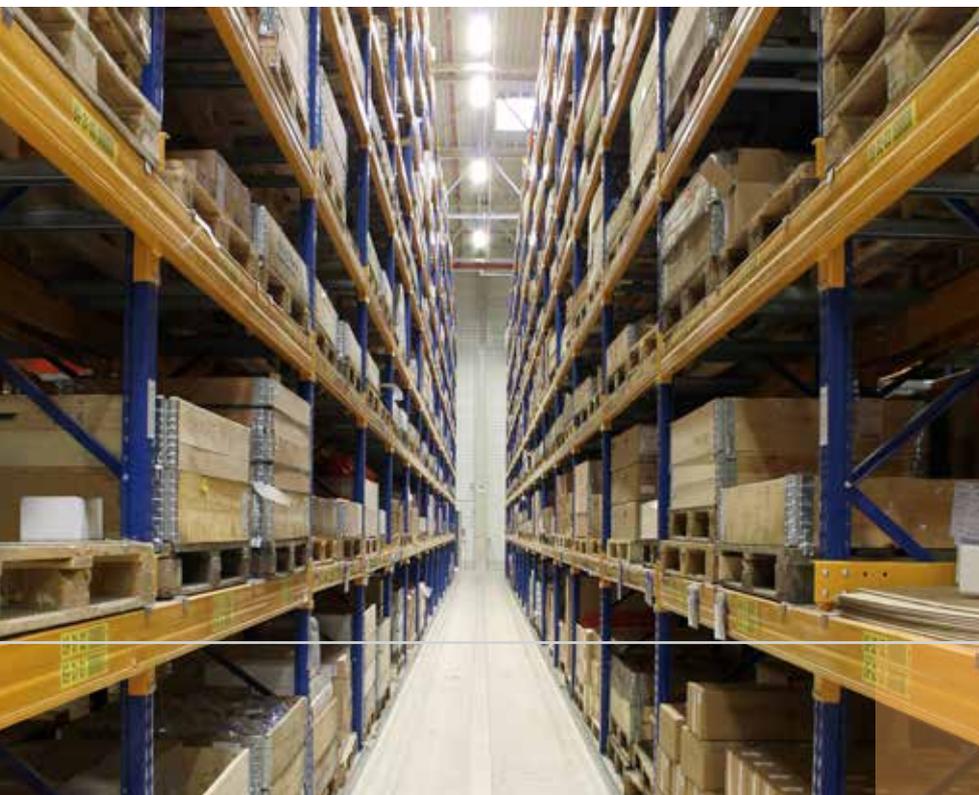


ESFR Sprinklers –

Early Suppression Fast Response Technology
for Storage Spaces



More flexibility

For storage spaces

Warehouses characteristically store a high volume of assets in a comparatively small area. This makes the potential for large and rapidly spreading fires a dangerous reality for any logistic business. For many storage spaces, ESFR sprinklers installed at the ceiling provide excellent fire protection without requiring in-rack sprinklers.



Factors such as ceiling height, storage height, type of stored commodity, and method of storage all impact the expected severity of a storage fire. Generally, sprinkler systems with sprinklers installed under the ceiling and, if applicable, in storage racks have a proven record of protecting warehouses. However, using ESFR (Early Suppression Fast Response) sprinklers can provide optimal solutions for challenging operational conditions, such as:

- high-bay warehouses with varying levels of stored goods or with moveable racks, which impede the use of in-racks sprinklers
- high-bay warehouses with heavy forklift traffic, which increases the risk of damaging in-rack sprinklers
- block storage and high-bay facilities with severe fire load, which requires massive application of extinguishing water

ESFR sprinklers are fast response fusible element type sprinklers designed for early fire suppression. They use large quantities of water per sprinkler head. Equipped with a special deflector, ESFR sprinklers produce large, high-momentum water droplets that penetrate the fire plume and attack the fire as well as wetting the burning surfaces of surrounding goods which slows the fire growth. Due to their short length, Viking ESFR sprinklers provide more installation flexibility than competitive products.

However, there are specific rules that must be followed in the design of any ESFR storage sprinkler system. Viking ESFR sprinklers are limited to wet type sprinkler systems and must be installed in buildings that have flat ceilings or roofs with a height of not more than 13.7m. Furthermore, it is important that the sprinkler is installed with a required distance from possible obstructions, such as a ceiling bar joist, that would impede its spray pattern. For this reason, ESFR systems require very careful and precise planning. Viking provides technical support and helps you choose the right ESFR product.

Especially in high-bay warehouses, block storages, hazardous substance storages, paper roll depots or tyre depots, ESFR sprinklers provide more flexibility in the design of the sprinkler system. Even refrigerated storage can be fitted with special ESFR dry sprinklers as long as there is sufficient space at ambient temperatures above the cold storage area.



Wide range of ESFR sprinklers

For different applications

ESFR sprinklers are available in a range of K-factors, from K14 (202) to K25 (363). Depending on the type of stored commodity as well as the method of storage, different types of ESFR sprinkler might be suitable. In general, ESFR sprinklers with higher K-factors are better suited for protecting warehouses with higher ceiling and storage heights and other situations where a more severe fire is possible. The majority of Viking ESFR sprinklers are UL listed and FM approved.

We have suitable ESFR sprinklers for variety of special applications. For example, the VK506 and VK510 are designed to suppress specific high-challenge fires such as expanded polystyrene and polyurethane commodities.



Pendent ESFR VK510 sprinkler

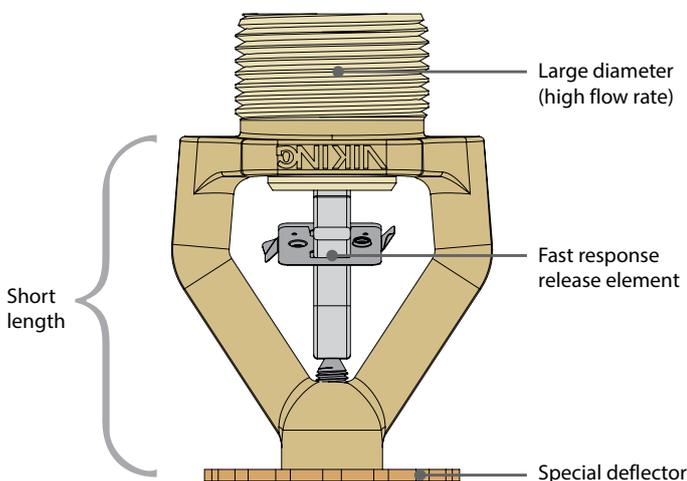
The VK520 provides more options for designing around obstructions due to its upright orientation.

The dry pendent ESFR sprinklers VK502 and VK504 combine the suppression benefits of an ESFR with dry barrel technology. They are suitable for protecting freezers and cold storage facilities where the sprinkler system piping is installed in a heated space above the temperature-controlled area.

Compared to a preaction system with in-rack sprinklers, the dry pendent ESFR sprinkler solution is an easier and more cost effective approach.



Upright ESFR VK520 sprinkler



Dry pendent ESFR VK504 sprinkler

Advantages

At a glance

- Excellent fire protection for storage spaces
- Greater racking flexibility for high-bay warehouses with movable racks and varying levels of stored goods
- Dependable protection of facilities with severe fire loads that require massive application of water
- More installation flexibility due to shorter length than competitive products
- Variety of tailored ESFR sprinkler types for special applications such as cold storage
- Ceiling-only protection reduces the installed cost

Type	Standard/ Dry Barrel	K-factor		Orientation	Approvals					
		nominal	metric		cULus	FM	VdS	LPCB	CE	CNBOP
VK500	Standard	14	202	Pendent	✓	✓	✓		✓	
VK503	Standard	16.8	242	Pendent	✓	✓				✓
VK506	Standard	22.4	320	Pendent	✓	✓				✓
VK510	Standard	25.2	363	Pendent	✓	✓	✓	✓	✓	✓
VK520	Standard	14	202	Upright		✓			✓	
VK502	Dry Barrel	14	202	Pendent	✓	✓				
VK504	Dry Barrel	16.8	242	Pendent	✓					

For further information, please contact your local Viking sales office or refer to the technical documentation. The contents of this publication are subject to modifications without notice.

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