UL 1767B

SPECIFIC APPLICATION EARLY-SUPPRESSION FAST-RESPONSE (ESFR) PENDENT SPRINKLERS HAVING A NOMINAL DISCHARGE COEFFICIENT OF 28.0.

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Summary of Topics

This First Issue of the Outline of Investigation for Specific Application Early- Suppression Fast-Response (ESFR) Pendent Sprinklers Having A Nominal Discharge Coefficient Of 28.0, UL 1767B, includes requirements for ESFR sprinklers having a nominal K-factor of 28.0 intended for protection of cartoned, unexpanded Group A plastic commodity stored up to 43 feet (13.1 m) in height with a maximum ceiling height of 48 feet (14.6 m).

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INTRODUCTION

1 Scope

1.1 These requirements cover specific application early suppression fast response (ESFR) sprinklers intended for installation in accordance with the Standard for the Installation of Sprinklers, NFPA 13.

1.2 ESFR sprinklers covered by this Outline are also required to comply with the applicable requirements in the Standard for Early-Suppression Fast-Response Sprinklers, UL 1767, except as noted herein.

1.3 The requirements in this Outline are not intended to restrict the application of representative fire and other tests for special sprinklers, as referenced in Standard for the Installation of Sprinklers, NFPA 13, that are intended to provide protection for specific fire hazards.

2 Components

2.1 Except as indicated in 2.2, a component of a product covered by this Outline shall comply with the requirements for that component.

2.2 A component is not required to comply with a specific requirement that:

a) Involves a feature or characteristic not required in the application of the component in the product covered by this Outine, or

b) Is superseded by a requirement in this Outline.

2.3 A component shall be used in accordance with its rating established for the intended conditions of use.

2.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

3 Units of Measurement

3.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

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4 Undated References

4.1 Any undated reference to a code or standard appearing in the requirements of this outline shall be interpreted as referring to the latest edition of that code or standard.

5 Glossary

5.1 For the purpose of these requirements, the following definitions apply.

5.2 STANDARD FIRE TEST COMMODITY – CARTONED GROUP A PLASTICS (UNEXPANDED) – Single wall corrugated cardboard cartons measuring a nominal 21 by 21 by 20.5 inches (0.53 by 0.53 by 0.52 m) high containing 125 crystalline polystyrene cups in separate compartments within the carton. Single wall corrugated cardboard sheets are used to separate the five layers of cups and interlocking single wall corrugated cardboard vertical dividers are used to separate the 25 cups in each layer. Eight of the cartons are arranged in a 2 x 2 x 2 array with the open end of the cups facing down and placed on a nominal 42 by 42 by 5 inches (1.1 by 1.1 by 0.13 m) high two-way hardwood pallet.

CONSTRUCTION

6 Nominal “K” Factors

6.1 A large K-factor ESFR sprinkler shall have a ″K″ factor as specified in Table 6.1 or larger as referenced in Standard for the Installation of Sprinklers, NFPA 13.

Table 6.1
Nominal “K” factor and thread size

Nominal K	Discharge coefficient ″K″	External thread-type
28.0	26.6 – 29.4	1 inch NPT

PERFORMANCE

7 Large Scale Fire Tests for Specific Application Pendent ESFR Sprinklers having a Nominal K-factor of 28.0

7.1 When tested as described in 7.2 - 7.6, a sprinkler shall be capable of suppressing the large-scale fires described for each sprinkler such that compliance with the requirements in Table 7.1 is demonstrated.

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