

Approved Discharge Devices For Use With Ansul Foam Concentrates

General Description

Foam liquid concentrates are suitable for use on fires involving ordinary hydrocarbon petroleum products, and some foam liquid concentrates may also be suitable for use on fires involving polar solvent fuels. The fire protection system designer first identifies the fuel load and selects the foam liquid concentrate according to its ability to be used for a given fuel load. Upon selecting the foam liquid concentrate, the designer then selects equipment, including discharge devices, based on listing/approval compatibility of the equipment with the concentrate.

Discharge devices fall into one of four categories:

- foam-water sprinklers
- foam-water spray nozzles
- non-aspirating spray nozzles
- standard sprinklers

Tyco Fire Protection Products (TFPP) provides a number of standard spray sprinklers and foam-water sprinklers that can be used with foam liquid concentrates. The data provided in this technical data sheet is intended to provide compatibility information with the following Aqueous Film Forming Foams (AFFF) manufactured by Ansul:

- Ansulite 1% AFFF (1609-95CG)
- Ansulite 3% AFFF (AFC-3A)
- Ansulite 3x3 Low Viscosity (3%) AR-AFFF



NOTICE

The TFPP Sprinklers referenced herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the National Fire Protection Association (NFPA), in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the performance of these products.

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. Contact the installing contractor or product manufacturer with any questions.

Technical Data

Approvals

UL Listed
FM Approved

Refer to Tables 1, 2, and 3, as applicable.

Minimum Application Rate

The Minimum Application Rate is a function of foam liquid concentrate, fuel load, and approval agency.

Refer to Tables 1, 2, and 3, as applicable.

Minimum Inlet Pressure

The Minimum Inlet Pressure is the minimum starting pressure for the discharge device for purposes of producing foam.

Refer to Tables 1, 2, and 3, as applicable.

The Minimum Inlet Pressure may need to be increased to meet the Minimum Application Rate as a function of sprinkler spacing. For example, a Minimum Inlet Pressure of 7 psi for a discharge K-factor of 5.6 produces 14.8 gpm. Assuming a sprinkler spacing of 10 ft. x 10 ft. (100 ft²), the theoretical application rate would then be 0.148 gpm/ft². However, if the required Minimum Application rate is 0.16 gpm/ft², The Minimum Inlet Pressure would need to be increased to 8.2 psi, or the sprinkler spacing would need to be decreased to a maximum of 92 ft².

In all cases the Minimum Application Rate requirements override the Minimum Inlet Pressure requirements.

Sprinkler			Fuel	Minimum Application Rate ¹ , gpm/ft ² (mm/min)	Minimum Inlet Pressure ² , psi (bar)	Agency Listing or Approval
Type	SIN or Model	Data Sheet				
2.8K Upright	TY1131 TY1151	TFP171 TFP151	Hydrocarbons	0.16 (6,52)	30.0 (2,07)	UL
2.8K Pendent	TY1231 TY1251	TFP171 TFP151	Hydrocarbons	0.16 (6,52)	30.0 (2,07)	UL
4.2K Upright	TY2131	TFP171	Hydrocarbons	0.16 (6,52)	13.0 (0,90)	UL
4.2K Pendent	TY2231	TFP171	Hydrocarbons	0.16 (6,52)	13.0 (0,90)	UL
5.6K Upright	TY3121 TY3131 TY3151	TFP130 TFP171 TFP151	Hydrocarbons	0.16 (6,52)	7.0 (0,48)	UL
5.6K Pendent	TY3231 TY3251	TFP171 TFP151	Hydrocarbons	0.16 (6,52)	7.0 (0,48)	UL

Notes:
1. Minimum Application Rate required per UL 162 "Foam Equipment and Liquid Concentrate Standard"
2. Minimum Inlet Pressure is the minimum starting pressure required for the sprinkler; however, the Minimum Application Rate overrides the Minimum Inlet Pressure (depending on sprinkler spacing)

TABLE 1
ANSULITE 1% AFFF (1609-95CG)

Sprinkler			Fuel	Minimum Application Rate ¹ , gpm/ft ² (mm/min)	Minimum Inlet Pressure ² , psi (bar)	Agency Listing or Approval
Type	SIN or Model	Data Sheet				
5.6K Upright	TY3131 TY3151	TFP171 TFP151	Hydrocarbons	0.16 (6,52)	7.0 (0,48)	UL, FM
5.6K Pendent	TY3231 TY3251	TFP171 TFP151	Hydrocarbons	0.16 (6,52)	7.0 (0,48)	UL, FM
8.0K Upright	TY4131 TY4151	TFP171 TFP151	Hydrocarbons	0.22 (8,96)	7.0 (0,48)	UL, FM
8.0K Pendent	TY4231 TY4251	TFP171 TFP151	Hydrocarbons	0.22 (8,96)	7.0 (0,48)	UL, FM
11.2K Upright	TY5111 TY5131 TY5151	TFP340 TFP344 TFP342	Hydrocarbons	0.32 (13,04)	7.0 (0,48)	UL, FM
11.2K Pendent	TY5211 TY5231 TY5251	TFP340 TFP344 TFP342	Hydrocarbons	0.32 (13,04)	7.0 (0,48)	UL, FM
Foam-Water 3.0K Upright or Pendent	Model B-1	TFP840	Hydrocarbons	0.16 (6,52)	30.0 (2,07)	UL

Notes:
1. Minimum Application Rate required per UL 162 "Foam Equipment and Liquid Concentrate Standard"
2. Minimum Inlet Pressure is the minimum starting pressure required for the sprinkler; however, the Minimum Application Rate overrides the Minimum Inlet Pressure (depending on sprinkler spacing)

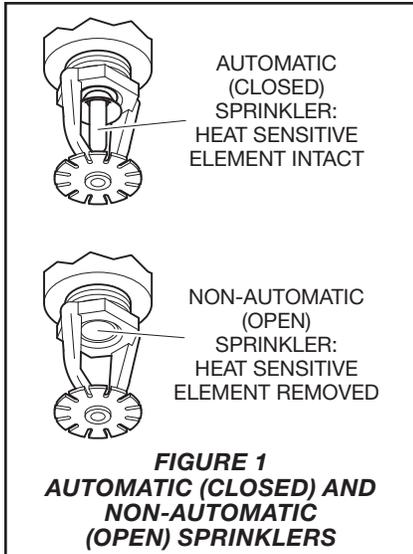
TABLE 2
ANSULITE 3% AFFF (AFC-3A)

Sprinkler			Fuel	Minimum Application Rate ¹ , gpm/ft ² (mm/min)	Minimum Inlet Pressure ² , psi (bar)	Agency Listing or Approval
Type	SIN or Model	Data Sheet				
5.6K Upright	TY3131 TY3151	TFP171 TFP151	Hydrocarbons	0.16 (6,52)	7.0 (0,48)	UL, FM
			Alcohols	0.22 (8,96)	14.5 (1,00)	
			Denatured Ethanol	0.16 (6,52)	7.0 (0,48)	
			E-85 Blend*	0.16 (6,52)	7.0 (0,48)	
5.6K Pendent	TY3231 TY3251	TFP171 TFP151	Hydrocarbons	0.16 (6,52)	7.0 (0,48)	UL, FM
			Alcohols	0.22 (8,96)	14.5 (1,00)	
			Denatured Ethanol	0.16 (6,52)	7.0 (0,48)	
			E-85 Blend*	0.18 (7,33)	9.0 (0,62)	
8.0K Upright	TY4131 TY4151	TFP171 TFP151	Hydrocarbons	0.22 (8,96)	7.0 (0,48)	UL, FM
			Alcohols	0.25 (10,19)	9.0 (0,62)	UL
			Alcohols	0.28 (11,41)	12.0 (0,83)	FM
			Denatured Ethanol	0.22 (8,96)	7.0 (0,48)	UL, FM
8.0K Pendent	TY4231 TY4251	TFP171 TFP151	Hydrocarbons	0.22 (8,96)	7.0 (0,48)	UL, FM
			Alcohols	0.27 (11,00)	11.0 (0,76)	UL
			Alcohols	0.28 (11,41)	12.0 (0,83)	FM
			Denatured Ethanol	0.22 (8,96)	7.0 (0,48)	UL, FM
11.2K Upright	TY5111 TY5131 TY5151	TFP340 TFP344 TFP342	Hydrocarbons	0.32 (13,04)	7.0 (0,48)	UL, FM
			Alcohols	0.36 (14,67)	9.5 (0,66)	
			Denatured Ethanol	0.32 (13,04)	7.0 (0,48)	
11.2K Pendent	TY5211 TY5231 TY5251	TFP340 TFP344 TFP342	Hydrocarbons	0.32 (13,04)	7.0 (0,48)	UL, FM
			Alcohols	0.36 (14,67)	9.5 (0,66)	
			Denatured Ethanol	0.32 (13,04)	7.0 (0,48)	
Foam-Water 3.0K Upright or Pendent	Model B-1	TFP840	Hydrocarbons	0.16 (6,52)	30.0 (2,07)	UL
			Alcohols	0.16 (6,52)	30.0 (2,07)	
			Denatured Ethanol	0.16 (6,52)	30.0 (2,07)	
			E-85 Blend*	0.16 (6,52)	30.0 (2,07)	

Notes:

1. Minimum Application Rate required per UL 162 "Foam Equipment and Liquid Concentrate Standard"
 2. Minimum Inlet Pressure is the minimum starting pressure required for the sprinkler; however, the Minimum Application Rate overrides the Minimum Inlet Pressure (depending on sprinkler spacing)
- * E-85 Blend based on 75% Denatured Ethanol / 25% Heptane

TABLE 3
ANSULITE 3X3 LOW VISCOSITY (3%) AR-AFFF



Limited Warranty

For warranty terms and conditions, visit www.tyco-fire.com.

Ordering Procedure

Refer to the TFP Data Sheet referenced in Tables 1, 2 or 3 for information on ordering standard spray sprinklers and foam-water sprinklers.

Installation

Depending on the nature of the hazard, foam water sprinkler systems may require use of automatic (closed) or non-automatic (open) sprinklers.

For instances where non-automatic sprinklers are required, automatic sprinklers are typically first installed with their fusible link or frangible bulb heat sensitive element intact. This provides for the ability to hydrostatically test the system. After successfully meeting the system hydrostatic test requirements, the fusible link or frangible bulb heat sensitive element can then be removed to provide a non-automatic (open) discharge device (Ref. Figure 1).

NOTICE

Extreme care is to be used when removing a fusible link or frangible bulb heat sensitive element from an automatic sprinkler to avoid personal injury. Wear safety glasses.

With sprinkler installed, wrap the element within a disposable protective covering, such as a cloth rag or several layers of paper towel, before prying the link parts or snapping the glass bulb. The size and thickness of the covering must be sufficient to completely envelop the element and provide cushioning against the release of the element under tension, as well as contain the dislodged pieces or metal or glass fragments.

Discard protective covering without unwrapping the captured element pieces. Carefully remove and discard element material not captured in the protective covering and remaining on sprinkler body, orifice or deflector.