ANSUL

by Tyco Fire Suppression & Building Products

FOAM CHAMBERS

Data/Specifications

FEATURES

- Choice of four foam chamber sizes for various foam solution flow rate requirements.
- Hinged inspection hatch with captive bolt securement for ease of inspection and maintenance.
- Choice of primed or standard red finish. Polyamide “CR” epoxy finish available for marine and other corrosive environments.
- Teflon vapor seal allows unrestricted flow of expanded foam.
- Convenient vapor seal replacement without removal of retaining bolts.
- UL Listed.

APPLICATION

ANSUL foam chambers are air-aspirating foam discharge devices that are used to protect various types of flammable liquid storage tanks including open top floating roof tanks and cone roof tanks with or without internal floaters. Additional applications include most types of open tanks where flammable liquid products are involved.

Foam chambers are defined by NFPA 11 as Type II discharge outlets for delivering foam to the surface of a flammable liquid. They are commonly used with bladder tanks, balanced pressure pump proportioning systems, line proportioners, or foam trucks. These foam chambers can be used with ANSUL low-expansion foam agents that are determined to be suitable for the flammable liquid being protected.

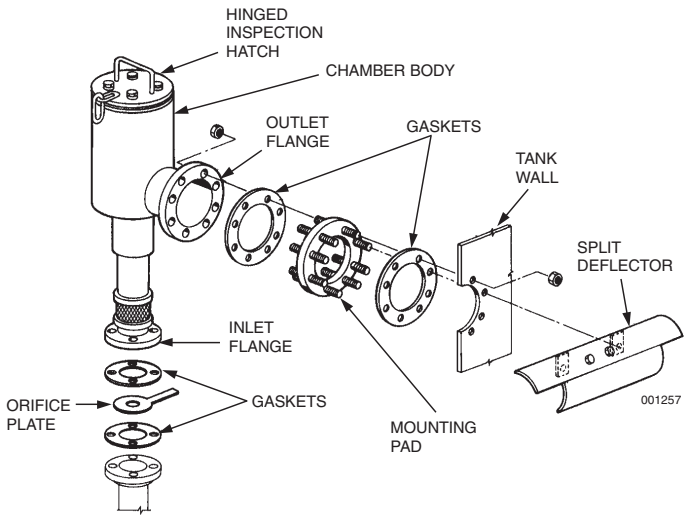
DESCRIPTION

The ANSUL foam chambers consist of a foam expansion chamber and an integral foam maker with a stainless steel screened air inlet. A removable orifice plate located at the flanged inlet to the foam maker is sized to deliver the required flow rate of foam solution at a specified inlet pressure. A frangible Teflon vapor seal is burst upon entry of foam solution allowing an unrestricted flow of expanded foam into the chamber body. From the chamber body, the foam flows through the foam deflector which disperses the foam into the storage tank.

The chamber vapor seal is accessible for inspection and service through a hinged inspection hatch that is secured with captive bolts. The hatch also contains a lifting handle that is designed to support the weight of the foam chamber.

The foam deflector directs the foam stream down the tank sidewall to lessen the submergence of the foam and agitation of the fuel surface (Type II application). The foam deflector is a split (two-piece) style. The split deflector allows for either bolting or welding to storage tanks when installation may be performed from both sides of the tank wall as with newly constructed tanks. The split deflector also allows for insertion of the deflector through the flange opening from the outside wall as is often required with tanks already in service.

The foam chamber and deflector can be bolted to the storage tank using a mounting pad. The pad contains mounting studs to fit standard flange holes.



SPECIFICATIONS

The foam chamber assembly shall consist of a chamber body with an integral foam maker and orifice plate. A foam deflector and foam chamber mounting pad shall be included with the assembly as required.

The foam chamber body shall be of steel construction with a choice of primed, standard red, or “CR” epoxy finish. The discharge outlet shall be of the flat-faced flange design that may be welded or bolted to the storage tank. For ease of access to the vapor seal, the chamber body shall contain a hinged inspection hatch secured with stainless steel captive bolts. The hatch shall also contain a lifting handle designed to support the weight of the chamber for hoisting.

The foam maker shall contain a stainless steel screen that is cylindrically shaped to conform to the air inlet surface to help prevent damage. The vapor seal shall be of Teflon construction to allow an unrestricted flow. The Teflon vapor seal shall be designed of a thickness to meet the UL required burst pressure range of 10 to 25 psi (0.69 to 1.72 bar). The vapor seal retainer shall be designed with slotted keyholes to eliminate bolt removal during replacement. The inlet to the foam maker shall be a raised-face flange with an orifice sized to allow the required flow rate of foam solution at the available pressure.

A split foam deflector shall be provided for either bolting or welding to the mounting surface, or for installation from the outside wall of the storage tank. For bolting applications, a mounting pad shall be available with a stud pattern compatible with the flat-face flange of the foam chamber body and the foam deflector.

A stainless steel nameplate shall be attached to the foam chamber hatch. The nameplate shall specify manufacturer, model number, and part number.

FLOW RANGE

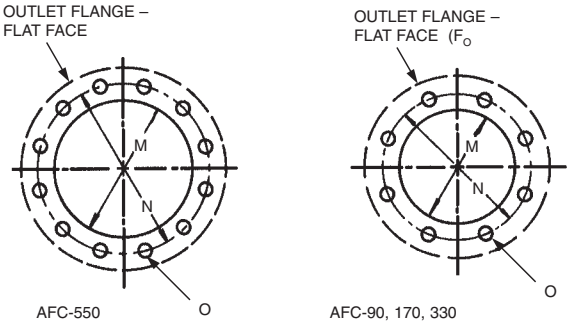
The flow rate of the foam chamber is determined by the orifice size and the inlet pressure. The flow ranges listed in the following table are based on 40 psi (2.76 bar) using the smallest orifice for the minimum flow and 100 psi (6.9 bar) using the largest orifice for the maximum flow.

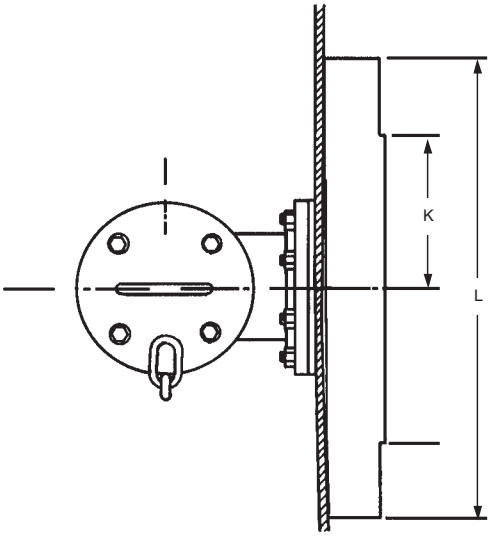
Model	Flow Range	K-Factor Range
AFC-90	49 to 151 gpm (185 to 572 Lpm)	7.8 to 15.1
AFC-170	94 to 279 gpm (356 to 1056 Lpm)	14.9 to 27.9
AFC-330	183 to 610 gpm (693 to 2309 Lpm)	28.9 to 61.0
AFC-550	350 to 980 gpm (1325 to 3709 Lpm)	55.3 to 98.0

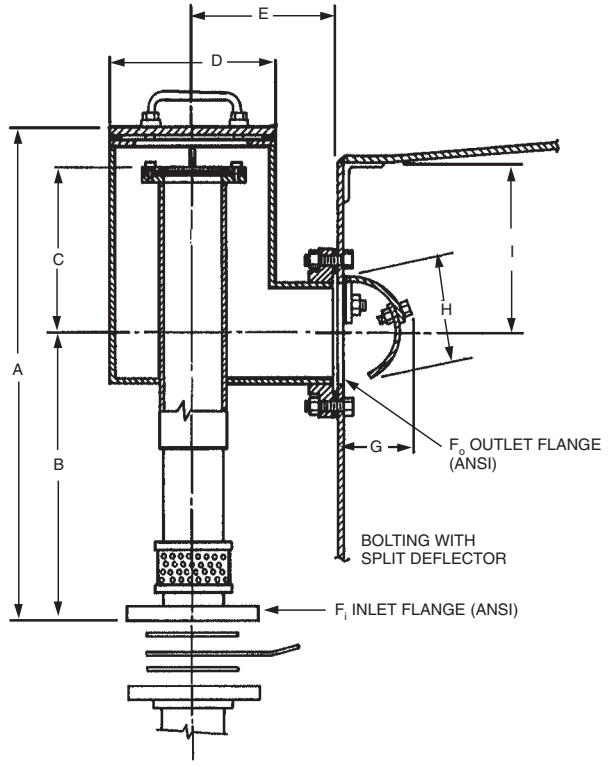
To determine flow rates for specific applications and proper orifice sizing, consult Technical Services, Marinette, WI 54143-2542.

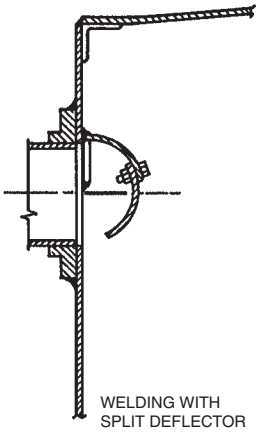
DIMENSION TABLE

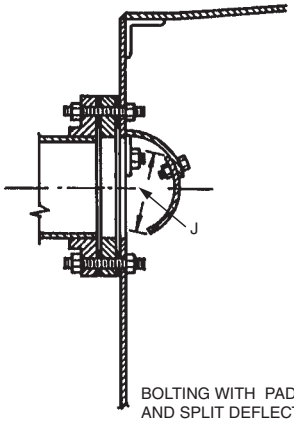
Dimension	AFC-90	AFC-170	AFC-330	AFC-550
A	26 1/16 in. (66.2 cm)	31 7/8 in. (81.0 cm)	35 3/8 in. (89.9 cm)	42 in. (106.7 cm)
B	15 5/16 in. (38.9 cm)	19 5/8 in. (49.8 cm)	20 5/8 in. (52.4 cm)	24 3/4 in. (62.9 cm)
C	8 1/2 in. (21.6 cm)	10 in. (25.4 cm)	11 1/8 in. (28.3 cm)	12 3/8 in. (31.4 cm)
D	8 3/8 in. (21.2 cm)	10 3/8 in. (26.4 cm)	12 3/8 in. (31.4 cm)	15 in. (38.1 cm)
E	7 in. (17.8 cm)	9 in. (22.9 cm)	10 in. (25.4 cm)	12 in. (30.5 cm)
F_i	2 1/2 in. (6.4 cm)	3 in. (7.6 cm)	4 in. (10.2 cm)	6 in. (15.2 cm)
F_o	4 in. (10.2 cm)	6 in. (15.2 cm)	8 in. (20.3 cm)	10 in. (25.4 cm)
G	3 1/4 in. (8.3 cm)	4 1/16 in. (10.3 cm)	5 in. (12.7 cm)	6 7/8 in. (17.5 cm)
H	5 5/16 in. (13.5 cm)	7 3/8 in. (18.7 cm)	9 1/8 in. (23.1 cm)	9 3/4 in. (24.8 cm)
I	8 in. (20.3 cm)	9 1/2 in. (24.1 cm)	11 in. (27.9 cm)	12 in. (30.5 cm)
J	4 5/8 in. (11.7 cm)	6 1/8 in. (15.6 cm)	7 3/4 in. (19.7 cm)	8 1/4 in. (20.9 cm)
K	8 in. (20.3 cm)	12 in. (30.5 cm)	16 in. (40.6 cm)	20 in. (50.8 cm)
L	12 in. (30.5 cm)	18 in. (45.7 cm)	24 in. (61.0 cm)	30 in. (76.2 cm)
M	4 1/2 in. (11.4 cm)	6 5/8 in. (16.8 cm)	8 5/8 in. (21.9 cm)	10 3/4 in. (27.3 cm)
N	7 1/2 in. (19.1 cm)	9 1/2 in. (24.1 cm)	11 3/4 in. (29.8 cm)	14 1/4 in. (36.2 cm)
O	3/4 in. (1.9 cm)	7/8 in. (2.2 cm)	7/8 in. (2.2 cm)	1 in. (2.5 cm)
P	2 7/8 in. (7.3 cm)	3 1/2 in. (8.9 cm)	4 1/2 in. (11.4 cm)	6 5/8 in. (16.8 cm)
Q	5 1/2 in. (13.9 cm)	6 in. (15.2 cm)	7 1/2 in. (19.1 cm)	9 1/2 in. (24.1 cm)
R	3/4 in. (1.9 cm)	3/4 in. (1.9 cm)	3/4 in. (1.9 cm)	7/8 in. (2.2 cm)
S	8 1/2 in. (21.6 cm)	12 in. (30.5 cm)	16 in. (40.6 cm)	20 in. (50.8 cm)
T	14 1/2 in. (36.8 cm)	16 in. (40.6 cm)	24 1/2 in. (62.2 cm)	23 1/4 in. (59 cm)
U	1 1/2 in. (3.8 cm)	1 1/2 in. (3.8 cm)	1 1/2 in. (3.8 cm)	3 5/16 in. (8.4 cm)
V	6 15/16 in. (17.6 cm)	8 25/32 in. (22.3 cm)	10 27/32 in. (27.5 cm)	13 3/4 in. (34.9 cm)
W	4 5/16 in. (11 cm)	4 11/16 in. (11.9 cm)	5 3/4 in. (14.6 cm)	7 5/32 in. (18.2 cm)



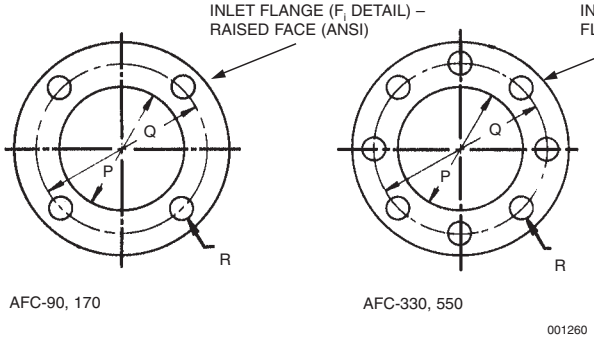




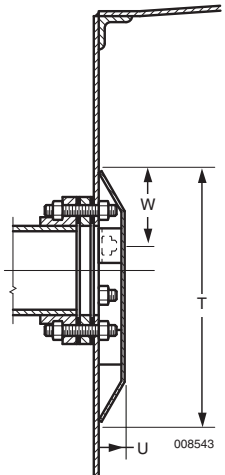


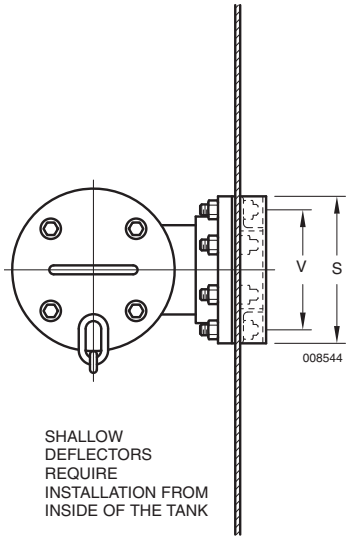


001259



001260





ORDERING INFORMATION

Part No.	Description	Approximate Shipping Weight lb	(kg)
Foam Chambers			
75887	Foam Chamber/Maker, AFC-90, Primed	60	(27.2)
75883	Foam Chamber/Maker, AFC-90, Standard Red	60	(27.2)
75879	Foam Chamber/Maker, AFC-90, CR EpoxyRed	60	(27.2)
74376	Split Deflector, AFC-90, Primed	5	(2.3)
428637	Shallow Deflector, AFC-90, Primed	5	(2.3)
75888	Foam Chamber/Maker, AFC-170, Primed	100	(45.4)
75884	Foam Chamber/Maker, AFC-170, Standard Red	100	(45.4)
75880	Foam Chamber/Maker, AFC-170, CR Epoxy Red	100	(45.4)
74380	Split Deflector, AFC-170, Primed	10	(4.5)
428638	Shallow Deflector, AFC-170, Primed	10	(4.5)
75889	Foam Chamber/Maker, AFC-330, Primed	145	(65.8)
75885	Foam Chamber/Maker, AFC-330, Standard Red	145	(65.8)
75881	Foam Chamber/Maker, AFC-330, CR Epoxy Red	145	(65.8)
74384	Split Deflector, AFC-330, Primed	20	(9.1)
428639	Shallow Deflector, AFC-330, Primed	20	(9.1)
75890	Foam Chamber/Maker, AFC-550, Primed	270	(122.5)
75886	Foam Chamber/Maker, AFC-550, Standard Red	270	(122.5)
75882	Foam Chamber/Maker, AFC-550, CR Epoxy Red	270	(122.5)
74388	Split Deflector, AFC-550, Primed	30	(13.6)
428640	Shallow Deflector, AFC-550, Primed	30	(13.6)

Note: Shallow deflectors are a lower protrusion option than the standard split deflectors illustrated on Page 3. Shallow deflectors may be required for cone roof tanks with internal floaters where the protrusion of a split deflector interferes with the internal floater operation.

Foam Chamber Accessories			
74392	Foam Chamber AFC-90 Mounting Pad, Primed	15	(6.8)
74390	Foam Chamber AFC-90 Mounting Pad, CR Epoxy Red	15	(6.8)
74396	Foam Chamber AFC-170 Mounting Pad, Primed	20	(9.1)
74394	Foam Chamber AFC-170 Mounting Pad, CR Epoxy Red	20	(9.1)
74400	Foam Chamber AFC-330 Mounting Pad, Primed	35	(15.9)
74398	Foam Chamber AFC-330 Mounting Pad, CR Epoxy Red	35	(15.9)
74404	Foam Chamber AFC-550 Mounting Pad, Primed	50	(22.7)
74402	Foam Chamber AFC-550 Mounting Pad, CR Epoxy Red	50	(22.7)
418581	Foam Chamber AFC-90 Vapor Seal Assembly	0.5	(0.23)
418582	Foam Chamber AFC-170 Vapor Seal Assembly	0.5	(0.23)
418583	Foam Chamber AFC-330 Vapor Seal Assembly	0.5	(0.23)
418584	Foam Chamber AFC-550 Vapor Seal Assembly	0.5	(0.23)
75985	Foam Chamber AFC-90 Cover Gasket	0.3	(0.14)
75986	Foam Chamber AFC-170 Cover Gasket	0.3	(0.14)
75987	Foam Chamber AFC-330 Cover Gasket	0.3	(0.14)
75988	Foam Chamber AFC-550 Cover Gasket	0.3	(0.14)
74610	Foam Chamber AFC-90 Orifice Plate	1	(0.45)
74611	Foam Chamber AFC-170 Orifice Plate	1	(0.45)
74612	Foam Chamber AFC-330 Orifice Plate	1	(0.45)
74613	Foam Chamber AFC-550 Orifice Plate	1	(0.45)
74408	Foam Chamber AFC-90 Foam Diverter Test Tube	15	(6.8)
74412	Foam Chamber AFC-170 Foam Diverter Test Tube	20	(9.1)
74416	Foam Chamber AFC-330 Foam Diverter Test Tube	40	(18.1)
74420	Foam Chamber AFC-550 Foam Diverter Test Tube	65	(29.5)
75968	Foam Chamber Cover Screw, All Models	0.3	(0.14)

Note: Foam chambers, mounting pads, foam deflectors are available constructed of 304 stainless steel.
► Contact Technical Services for pricing and availability.