Low Expansion Foam Systems

Foam Concentrates. Used as a component of foam systems. Concentrates are only Approved for use with the specific proportioning, bladder tank, and discharge devices listed below and the sprinklers listed in the Foam Water Sprinkler section of the Approval Guide.

Use of a concentrate with other devices or outside the listed ranges may result in solutions too lean or rich or may produce foam unable to provide the required extinguishing or sealing performance.

Concentrates below are compatible with both fresh water and sea water.

Product	Company	Listing Country	Type of Equipment	For Use With			
				Concentrate Name	Concentrate Percent in Water	Configurations	Approved Fuel Hazards
HD AFFF 3F-C6	HD Fire	India	Concentrate	HD AFFF 3F-C6	3%	For use with HD Fire ratio controllers and bladder tanks specifically tested with this concentrate. Or Water Motor-Powered Positive Displacement Pumps within acceptable viscosity range only. May be used in a pre-mixed solution. For use with HD Fire discharge devices evaluated with the specific concentrate only.	Hydrocarbons
HD AR-AFFF 3x3-C6	HD Fire	India	Concentrate	HD AR-AFFF 3x3-C6	3%	For use with HD Fire ratio controllers and bladder tanks specifically tested with this concentrate. Or Water Motor-Powered Positive Displacement Pumps within acceptable viscosity range only. May be used in a pre-mixed solution. For use with HD Fire discharge devices evaluated with the specific concentrate only.	Hydrocarbons IPA Ethanol

Bladder tanks. For use with HD Fire Protect foam concentrates, proportioners, discharge devices, and foam water sprinklers within the specifications identified in the table below.

Product	Company	Listing Country	Type of Equipment	For Use With								Type	Maximum Operating Pressure	Sizes
				Concentrate Name	Concentrate Percent in Water	Configurations	Approved Fuel Hazards	Hydraulic Concentrate Control Valves						
								Model Number	Size, inches (NB)	Minimum Actuator Operating Pressure	Maximum Operating Pressure			
Vertical Bladder Tank	HD Fire Protect Pvt. Ltd.	India	Bladder Tank	HD AFFF 3F-C6	3%	Vertical	Hydrocarbon	Model CV	1 (25NB) 1.5 (40NB) 2 (50NB)	30 PSI (2.1 Bar)	175 PSI (12.1 Bar)	ASME Section VIII, Division 1	175 PSI (12 Bar)	36 - 2000 USG (140 - 7500 Liters)
				HD AR-AFFF 3x3-C6	3%	Vertical	Hydrocarbon, IPA, Ethanol							
Horizontal Bladder Tank	HD Fire Protect Pvt. Ltd.	India	Bladder Tank	HD AFFF 3F-C6	3%	Horizontal	Hydrocarbon	Model CV	1 (25NB) 1.5 (40NB) 2 (50NB)	30 PSI (2.1 Bar)	175 PSI (12.1 Bar)	ASME Section VIII, Division 1	175 PSI (12 Bar)	36 - 4000 USG (140 - 15000 Liters)
				HD AR-AFFF 3x3-C6	3%	Horizontal	Hydrocarbon, IPA, Ethanol							

Proportioners. For use with HD Fire Protect foam concentrates and bladder tank systems (where applicable) within the specifications identified in the table below.

Product	Company	Listing Country	Type of Equipment	For Use With				Approved Flow Range		Approved Pressure Range		Connection	Finish	Sizes
				Concentrate Name	Concentrate Percent in Water	Configurations	Approved Fuel Hazards	(gal/min)	(L/min)	(psi)	(bar)			
Model RCW-B, RCW-S, RCF-B, and RCF-S Ratio Controllers	HD Fire Protect Pvt. Ltd.	India	Ratio Controller	HD AFFF 3F-C6	3%	For use with HD Fire Protect bladder tanks and discharge devices as appear in the FM Approval Guide only.	Hydrocarbons	27 - 420	102 - 1590	30 - 175	2-12	Wafer (RCW)	Bronze (B) or Stainless Steel (S)	2.5" (65 NB)
				HD AR-AFFF 3x3-C6	3%		Hydrocarbons, IPA, Ethanol	132 - 272	500 - 1030			Flanged (RCF)		
Model RCW-B, RCW-S, RCF-B, and RCF-S Ratio Controllers	HD Fire Protect Pvt. Ltd.	India	Ratio Controller	HD AFFF 3F-C6	3%	For use with HD Fire Protect bladder tanks and discharge devices as appear in the FM Approval Guide only.	Hydrocarbons	77 - 790	290 - 2990	30 - 175	2-12	Wafer (RCW)	Bronze (B) or Stainless Steel (S)	3" (80 NB)
												Flanged (RCF)		
Model RCW-B, RCW-S, RCF-B, and RCF-S Ratio Controllers	HD Fire Protect Pvt. Ltd.	India	Ratio Controller	HD AFFF 3F-C6	3%	For use with HD Fire Protect bladder tanks and discharge devices as appear in the FM Approval Guide only.	Hydrocarbons	159 - 1598	600 - 6050	30 - 175	2-12	Wafer (RCW)	Bronze (B) or Stainless Steel (S)	4" (100 NB)
				HD AR-AFFF 3x3-C6	3%		Hydrocarbons, IPA, Ethanol	478 - 1622	1810 - 6140			Flanged (RCF)		
Model RCW-B, RCW-S, RCF-B, and RCF-S Ratio Controllers	HD Fire Protect Pvt. Ltd.	India	Ratio Controller	HD AFFF 3F-C6	3%	For use with HD Fire Protect bladder tanks and discharge devices as appear in the FM Approval Guide only.	Hydrocarbons	317 - 3027	1200 - 11460	30 - 175	2-12	Wafer (RCW)	Bronze (B) or Stainless Steel (S)	6" (150 NB)
				HD AR-AFFF 3x3-C6	3%		Hydrocarbons, IPA, Ethanol	1321 - 3249	5000 - 12300			Flanged (RCF)		
Model RCW-BM, RCW-SM, RCF-BM, and RCF-SM Ratio Controllers	HD Fire Protect Pvt. Ltd.	India	Ratio Controller	HD AR-AFFF 3x3-C6	3%	For use with HD Fire Protect bladder tanks and discharge devices as appear in the FM Approval Guide only.	Hydrocarbons, IPA, Ethanol	44 - 139	165 - 528	30 - 175	2-12	Wafer (RCW)	Bronze (B) or Stainless Steel (S)	2.5" (65 NB)
												Flanged (RCF)		

Model RCW-BM, RCW-SM, RCF-BM, and RCF-SM Ratio Controllers	HD Fire Protect Pvt. Ltd.	India	Ratio Controller	HD AR-AFFF 3x3-C6	3%	For use with HD Fire Protect bladder tanks and discharge devices as appear in the FM Approval Guide only.	Hydrocarbons, IPA, Ethanol	217 - 814	820 - 3080	30 - 175	2-12	Wafer (RCW) Flanged (RCF)	Bronze (B) or Stainless Steel (S)	3" (80 NB)
Model IE225-7B, IE225-7S, IE225-12B, IE225-12S Portable Inline Inductors	HD Fire Protect Pvt. Ltd.	India	Inline Inductor	HD AFFF 3F-C6	3%	For use with HD Fire Protect bladder tanks and ratio controllers as appear in the FM Approval Guide only.	Hydrocarbons	59 or 119	225 or 450	100, or 175	7, or 12	Hose Coupling	Bronze (B) or Stainless Steel (S)	2.5" (65 NB)
				HD AR-AFFF 3x3-C6	3%		Hydrocarbons, IPA, Ethanol	59*	225*	100 or 175	7 or 12			
Model IE450-7B, IE450-7S, IE450-12B, IE450-12S Portable Inline Inductors	HD Fire Protect Pvt. Ltd.	India	Inline Inductor	HD AFFF 3F-C6	3%	For use with HD Fire Protect bladder tanks and ratio controllers as appear in the FM Approval Guide only.	Hydrocarbons	119	450	100, or 175	7, or 12	Hose Coupling	Bronze (B) or Stainless Steel (S)	2.5" (65 NB)
				HD AR-AFFF 3x3-C6	3%		Hydrocarbons, IPA, Ethanol	119	450	175*	12*			

Note: Maximum static pressure is 200 PSI (13.8 Bar).

*Model IE450-7B and IE450-7S is not FM Approved for use with HD AR-AFFF 3x3-C6.

Topside discharge devices. For use with HD Fire Protect foam concentrates and bladder tank proportioning systems within the specifications identified in the table below.

Product	Company	Listing Country	Type of Equipment	For Use With				Approved Flow Range		Approved Pressure Range		Connection	Finish	Sizes
				Concentrate Name	Concentrate Percent in Water	Configurations	Approved Fuel Hazards	(gal/min)	(L/min)	(psi)	(bar)			
Model FCA 65 and FCA-S 65 Foam Chambers	HD Fire Protect Pvt. Ltd.	India	Foam Chamber	HD AFFF 3F-C6	3%	For use with HD Fire Protect bladder tanks and ratio controllers as appear in the FM Approval Guide only.	Hydrocarbons	41 - 140	155 - 531	40 - 100	2.8 - 7	Flanged	Carbon Steel or Stainless Steel (S)	2.5" (65 NB)
				HD AR-AFFF 3x3-C6	3%		Hydrocarbons, IPA, Ethanol	42 - 152	158 - 575	50 - 100	3.5 - 7			
Model FCA 80 and FCA-S 80 Foam Chambers	HD Fire Protect Pvt. Ltd.	India	Foam Chamber	HD AFFF 3F-C6	3%	For use with HD Fire Protect bladder tanks and ratio controllers as appear in the FM Approval Guide only.	Hydrocarbons	81 - 300	308 - 1135	40 - 100	2.8 - 7	Flanged	Carbon Steel or Stainless Steel (S)	3" (80 NB)
				HD AR-AFFF 3x3-C6	3%		Hydrocarbons, IPA, Ethanol	83 - 277	314 - 1048	50 - 100	3.5 - 7			
Model FCA 100 and FCA-S 100 Foam Chambers	HD Fire Protect Pvt. Ltd.	India	Foam Chamber	HD AFFF 3F-C6	3%	For use with HD Fire Protect bladder tanks and ratio controllers as appear in the FM Approval Guide only.	Hydrocarbons	164 - 671	620 - 2540	40 - 100	2.8 - 7	Flanged	Carbon Steel or Stainless Steel (S)	4" (100 NB)
				HD AR-AFFF 3x3-C6	3%		Hydrocarbons, IPA, Ethanol	159 - 666	600 - 2520	50 - 100	3.5 - 7			
Model FCA 150 and FCA-S 150 Foam Chambers	HD Fire Protect Pvt. Ltd.	India	Foam Chamber	HD AFFF 3F-C6	3%	For use with HD Fire Protect bladder tanks and ratio controllers as appear in the FM Approval Guide only.	Hydrocarbons	391 - 872	1480 - 3300	40 - 100	2.8 - 7	Flanged	Carbon Steel or Stainless Steel (S)	6" (150 NB)
				HD AR-AFFF 3x3-C6	3%		Hydrocarbons, IPA, Ethanol	387 - 872	1465 - 3300	50 - 100	3.5 - 7			

Model FMA 50 and FMA-S 50 Foam Maker	HD Fire Protect Pvt. Ltd.	India	Foam Maker	HD AFFF 3F-C6	3%	For use with HD Fire Protect bladder tanks and ratio controllers as appear in the FM Approval Guide only.	Hydrocarbons	25 - 92	95 - 350	40 - 100	2.8 - 7	Flanged	Carbon Steel or Stainless Steel (S)	2" (50 NB)
				HD AR-AFFF 3x3-C6	3%		Hydrocarbons, IPA, Ethanol	60 - 96	227 - 365	75 - 100	5.2 - 7			
Model FMA 65 and FMA-S 65 Foam Maker	HD Fire Protect Pvt. Ltd.	India	Foam Maker	HD AFFF 3F-C6	3%	For use with HD Fire Protect bladder tanks and ratio controllers as appear in the FM Approval Guide only.	Hydrocarbons	92 - 147	349 - 557	70 - 100	4.9 - 7	Flanged	Carbon Steel or Stainless Steel (S)	2.5" (65 NB)
				HD AR-AFFF 3x3-C6	3%		Hydrocarbons, IPA, Ethanol	41 - 148	155 - 560	50 - 100	3.5 - 7			
Model RPA 65 and RPA-S 65 Rimseal Foam Pourers	HD Fire Protect Pvt. Ltd.	India	Rimseal Pourer	HD AFFF 3F-C6	3%	For use with HD Fire Protect bladder tanks and ratio controllers as appear in the FM Approval Guide only.	Hydrocarbons	77 - 147	293 - 558	70 - 100	4.9 - 7	Flanged	Carbon Steel or Stainless Steel (S)	2.5" (65 NB)
				HD AR-AFFF 3x3-C6	3%		Hydrocarbons, IPA, Ethanol	14 - 148	54 - 560	50 - 100	3.5 - 7			
Model BP225-4.2, BP225-7, BP450-4.2 and BP450-7 Foam Branch Pipes	HD Fire Protect Pvt. Ltd.	India	Branch Pipe	HD AFFF 3F-C6	3%	For use with HD Fire Protect bladder tanks and ratio controllers, or in-line inductors, as appear in the FM Approval Guide only.	Hydrocarbons	59 or 119	225 or 450	60, or 100	4.2, 7	Hose Coupling	Aluminium	2.5" (65 NB)
				HD AR-AFFF 3x3-C6	3%		Hydrocarbons, IPA, Ethanol	59 or 119	225 or 450	100*	7*			

Foam chambers are fitted with glass or graphite vapor seals designed to rupture upon system discharge. Maximum permissible back pressure is 1 psi.

*Model BP450-4.2 is not FM Approved for use with HD AR-AFFF 3x3-C6.

Company Name:	HD Fire Protect Pvt. Ltd.
Company Address:	D-6/2, ROAD NO.34, WALGE INDUSTRIAL ESTATE, THANE, 400604 , MAHARASHTRA, INDIA
Company Website:	http://hdfire.com
New/Updated Product Listing:	Yes
Green Product:	No
Listing Country:	India
Certification Type:	FM Approved