



TECHEUROPA INSPECTION & CERTIFICATIONS PRIVATE LIMITED

CERTIFICATE No: EN.IN.052.22-07/23

CERTIFICATE OF COMPLIANCE

MANUFACTURER	:	INTEGRATED FIRE PROTECTION PVT. LTD
INSPECTION SITE	:	RAJBARIPARA, JALPAIGURI - 735101, WEST BENGAL
PRODUCT	:	IFP UNILIGHT AR-AFFF TYPE 3/3 ^{C6} (SELF-HEALING) [AR-AFFF 3X3]
APPLICABLE STANDARD	:	EN 1568-3 & 4
DATE OF ISSUE	:	22 JUNE 2023
DATE OF EXPIRY	:	22 JUNE 2026 (SUBJECTED TO SUCCESSFUL ANNUAL SURVEILLANCE AUDIT)

This certificate is issued to **INTEGRATED FIRE PROTECTION PVT. LTD.**, to certify that at their request, the undersigned surveyor to this company select sample of **IFP UNILIGHT AR-AFFF TYPE 3/3^{C6} (SELF-HEALING) [AR-AFFF 3X3]** for the purpose of confirming that the properties were within the technical specifications and were in accordance with EN 1568-3 & 4

The necessary tests were witnessed by the surveyor and the results obtained were all within the limits given in the manufacturer's specifications, and the requirements of EN 1568-3.

Tolerance to freezing and thawing (Annex E)

No Stratification or non-homogeneity could be detected in the sample.

Sediment (Annex C)

Before ageing of the sample: NIL
After ageing of the sample:
(24 hours at 60°C) NIL

Viscosity at 20°C (Annex D):

At 20°C 1028 cst
At 10°C 1264 cst
At 0°C 1313 cst

pH of the concentrate at 20°C: 7.87

Surface Tension, Interfacial Tension and spreading coefficient (Annex F) :

	<u>Surface Tension</u>	<u>Interfacial Tension</u>	<u>Spreading Co-efficient</u>
	N/m	N/m	
Before conditioning:	15.46	3.04	5.98
After conditioning: At -30°C for 24 Hrs followed by 48 hrs at 20° C (Four cycles)			
After freezing cycle			
Top Layer:	15.73	1.64	7.11
Bottom Layer:	15.64	1.64	7.2
After conditioning at 60° for 7 days followed by 2 days at 20°C			
Top Layer:	15.12	2.15	5.21
Bottom Layer:	14.88	2.02	5.58



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Expansion and Drainage (Annex G):

Before conditioning of the sample:

	Fresh Water	Sea Water
Expansion:	8.9	8.84
25% drainage time:	7 min 30 sec	6 min 38 sec
50% drainage time:	11 min 57 sec	10 min 38 sec

After conditioning of the sample:

In accordance with Annex E

TOP LAYER

Expansion:	8.29	8.12
25% drainage time:	7 min 52sec	6 min 28 sec
50 % drainage time:	12 min 27 sec	11 min 08 sec

BOTTOM LAYER

Expansion:	8.16	8.12
25 % drainage:	7 min 42 sec	6 min 19 sec
50% drainage time:	12 min 29 sec	11 min 25 sec

Fire Test (Annex H)

A] Forceful Application in accordance with EN 1568-3(Annex H1 & H3) :

With Fresh water and sea water:

Pre-burn time:	60 sec	
Foam application:	180 sec	
Wait after foam application:	300 sec	
Fire tray:	4.5 m ²	
Fuel:	commercial n-Heptane	
	Fresh Water	Sea Water
90% Control:	35 sec	44 sec
99% Control:	55 sec	61 sec
100% Extinction:	60 sec	67 min
25% Burnback time:	> 10 min	> 10 min
Air Temp:	30° C	25° C
Fuel Temp:	22° C	18° C
Wind Speed (m/sec)	2	0.5

B1] Gentle application in accordance with EN 1568-4(Annex H1 &H2):

With Fresh water and sea water:

Pre-burn time:	120 sec
Foam application:	300 sec
Wait after foam application:	300 sec
Fire tray:	1.7 m ²
Fuel:	Acetone



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	Fresh Water	Sea Water
90% Control:	35 sec	25 sec
99% Control:	1 min 15 sec	42 sec
100% Extinction:	2 min 51 sec	45 sec
25% Burn-back time:	8 min 50 sec	7 min 30 sec
Air Temp:	27° C	24° C
Fuel Temp:	18° C	17° C
Wind Speed (m/sec)	0.55	0.2

B2] Gentle application in accordance with EN 1568-4(Annex H1 &H2):

With Fresh water and sea water:

Pre burn time:	120 sec
Foam application:	300 sec
Wait after foam application:	300 sec
Fire tray:	1.7 m ²
Fuel:	Iso Propyl Alcohol

	Fresh Water	Sea Water
90% Control:	31 sec	25 sec
99% Control:	48 sec	30 sec
100% Extinction:	55 sec	35 sec
25% Burn back time:	12 min 15 sec	9 min 30 sec
Air Temp:	26° C	23° C
Fuel Temp:	17° C	17° C
Wind Speed (m/sec)	0.4	0.3

From the above test result it is confirmed that **IFP UNILIGHT AR-AFFF TYPE 3/3^{C6} (SELF-HEALING) [AR-AFFF 3X3]** is a film forming foam concentrate suitable for use at 3% concentration with potable and sea water. **IFP UNILIGHT AR-AFFF TYPE 3/3^{C6} (SELF-HEALING) [AR-AFFF 3X3]** has tolerance to freezing and thawing (Annex E). The product can withstand temp. Upto - 30°C.

The Fire extinguishing performance

(A) HYDROCARBON FUEL		
WITH FRESH WATER:	Class I	Burn back resistance level A.
WITH SEA WATER:	Class I	Burn back resistance level A
(B) POLAR FUEL ACETONE		
WITH FRESH WATER:	Class I	Burn back resistance level C
WITH SEA WATER:	Class I	Burn back resistance level C
(C) POLAR FUEL ISO PROPYL ALCOHOL		
WITH FRESH WATER:	Class I	Burn back resistance level B.
WITH SEA WATER:	Class I	Burn back resistance level C



Amiya Sagar
Surveyor