



## Foam Concentrates Test and Fire Test

Office: Singapore

Date: 30 June 2018

This Certificate is issued to Global Fire Solution Pte Ltd. to certify that at their request, the undersigned surveyor to this Society did attend at their work on 07 February 2018 for the purpose of witnessing the Foam Concentrates Laboratory Test and on 27 February witnessed Fire Test according to International Civil Aviation Organisation (ICAO) standard level C.

### TECHNICAL DESCRIPTION OF FOAM CONCENTRATE:

Type : Aqueous Film-Forming Foam (AFFF) 3% & 6% (ICAO)  
Brand : GLOBALCHEM AFFF 3% & GLOBALCHEM AFFF 6% (ICAO)  
Manufacturer Name : Global Fire Solution Pte Ltd

The above foam concentrates were tested and found to within the specification:

Parameters	Specifications
pH	6.0 – 8.5
Viscosity at 20 deg. C, mm <sup>2</sup> /s (cSt)	< 200
Sedimentation, vol %	< 0.5 %

The fire tested was found to within the specification:

Parameters	Specifications
Nozzle ( Aspirated )	UNI 86
Nozzle Pressure ( Approx. ), bar	700 kPa
Application Rate , l/min/m <sup>2</sup>	1.56L/min/m <sup>2</sup>
Nozzle Discharge Rate , l/min	11.4 L/min
Fire Tray Size , m <sup>2</sup>	7.32 m <sup>2</sup> circular
Fuel	Kerosene

The fire tests were carried out under the following Environmental Conditions (Outdoor Test):

Parameters	Specifications
Air Temperature , Deg. C	≥ 15
Foam Temperature, Deg. C	≥ 1.5
Wind Velocity , m/s	≤ 3
Preburn Time, sec.	60s
Extinguishing Time, sec.	≤ 60 s
Foam Total Application Time, sec.	120s
25% Reignition Time, min.	≥ 5 min

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Foam analysis test report Cert No. GFS-301/18(3%) & GFS 302/18(6%) dated 07 February 2018  
Fire Test report No. GFSFTR-301/18(3%) & GFSFTR- 302/18(6%) dated 27 February 2018  
This certificate is valid until 03 March 2021



K. F. Liew  
Surveyor to Lloyd's Register Asia

a member of the Lloyd's Register group.



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### TECHNICAL DESCRIPTION OF FOAM CONCENTRATE:

Type : Film-Forming Fluoroprotein Foam (FFFP) 3% & 6% (ICAO)  
Brand : GLOBALCHEM FFFP 3% & GLOBALCHEM FFFP 6% (ICAO)  
Manufacturer Name : Global Fire Solution Pte Ltd.

The above foam concentrates were tested and found to within the specification:

Parameters	Specifications
pH	6.0 – 8.5
Viscosity at 20 deg. C, mm <sup>2</sup> /s (cSt)	< 200
Sedimentation, vol %	< 0.5 %

The fire tested was found to within the specification:

Parameters	Specifications
Nozzle ( Aspirated )	UNI 86
Nozzle Pressure ( Approx. ), bar	700 kPa
Application Rate , l/min/m <sup>2</sup>	1.56 L/min/m <sup>2</sup>
Nozzle Discharge Rate , l/min	11.4 L/min
Fire Tray Size , m <sup>2</sup>	7.32 m <sup>2</sup> circular
Fuel	Kerosene

The fire tests were carried out under the following Environmental Conditions (Outdoor Test):

Parameters	Specifications
Air Temperature , Deg. C	≥ 15
Foam Temperature, Deg. C	≥ 1.5
Wind Velocity , m/s	≤ 3
Preburn Time, sec.	60 s
Extinguishing Time, sec.	≤ 60 s
Foam Total Application Time, sec.	120 s
25% Reignition Time, min.	≥ 5min

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Foam analysis test report Cert No. GFS-303/18(3%), GFS- 304/18(6%)dated 07 February 2018  
FireTest report cert No. GFSFTR- 303/18(3%), GFSFTR- 304/18(6%) dated 27 February 2018  
This certificate is valid until 03 March 2021



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### TECHNICAL DESCRIPTION OF FOAM CONCENTRATE:

Type : HIGH EXPANSION 1% AND HIGH EXPANSION 2%  
Brand : GLOBALCHEM High Expansion 1% & 2% (ICAO)  
Manufacturer Name : Global Fire Solution Pte Ltd

The above foam concentrates were tested and found to within the specification:

Parameters	Specifications
pH	6.0 – 8.5
Viscosity at 20 deg. C, mm <sup>2</sup> /s (cSt)	>200
Sedimentation, vol %	< 0.5 %

The fire tested was found to within the specification:

Parameters	Specifications
Nozzle ( Aspirated )	UNI 86
Nozzle Pressure ( Approx. ), bar	700 kPa
Application Rate , l/min/m <sup>2</sup>	1.56 L/min/m <sup>2</sup>
Nozzle Discharge Rate , l/min	11.4 L/min
Fire Tray Size , m <sup>2</sup>	7.32 m <sup>2</sup> circular
Fuel	Kerosene

The fire tests were carried out under the following Environmental Conditions (Outdoor Test):

Parameters	Specifications
Air Temperature , Deg. C	≥ 15
Foam Temperature, Deg. C	≥ 15
Wind Velocity , m/s	≤ 3
Preburn Time, sec.	60 s
Extinguishing Time, sec.	≤ 60 s
Foam Total Application Time, sec.	120 s
25% Reignition Time, min.	≥ 5 min

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Foam analysis test report Cert No. GFS-305/18(1%) , GFS- 306/18(2%) dated 07 February 2018  
FireTest report cert No. GFSFTR- 305/18(1%), GFSFTR- 306/18(2%) dated 27 February 2018  
This certificate is valid until 03 March 2021



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