



Dafo Fomtec AB
Viking Nordic AB

FG Sprinklerkonferansen

Gardermoen, October 30th 2025



Company presentation

Dafo Fomtec AB Introduction

Dafo Fomtec AB was founded in 2001 by fire industry professionals with decades of combined experience.

Fomtec develops, manufactures, and distributes high-quality firefighting foams and selected foam equipment to the fire protection industry globally.

Fomtec is an independent and privately owned company with a strong customer focus. Fomtec is committed to meet and exceed the standards we set behind the company's core values of:

Performance – Trust – Sustainability

Company presentation



John-Olav Ottesen
Owner and CEO



Carl Rydén
Regional Sales Manager



Fomtec sales and management team



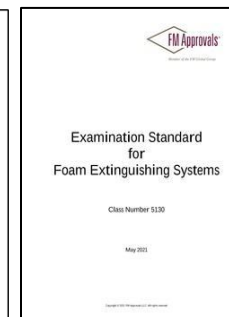
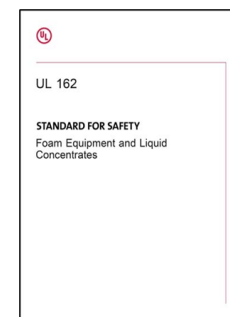
Fomtec production and R&D – Helsingborg, Sweden

Company presentation

Fomtec product certifications and quality control

Fomtec company and products are certified by:

- DNV, ISO 9001, Annual Audit
- Lloyds Register, MED Module D, Annual Audit
- RINA, MED Module D, Annual Audit
- Underwriters Laboratories, UL 162, Quarterly Audit
- Factory Mutual, FM 5130, Quarterly Audit
- MIL-F-24385F, US military specification



Product	Foam type	Main application	Certification
Fomtec Enviro USP	Class B	Sprinkler system Tank protection Bund protection	UL 162 FM 5130
Fomtec Enviro ARK	Class B & B AR	Sprinkler system Tank protection Dike protection	UL 162 FM 5130

Company presentation

Fomtec Enviro range for approved systems

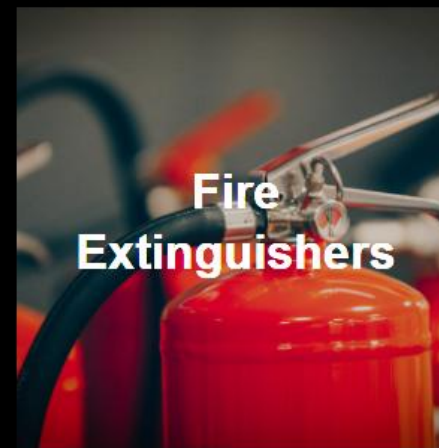
- Fomtec Enviro USP – for hydrocarbon fuels
- Fomtec Enviro ARK – for polar solvent fuels
- Fomtec foam concentrates are tested and certified in co-operation with proportioning and discharge devices from world-wide partner Viking – low- medium- and high expansion foam systems



enviro
by fomtec

Company presentation

Fomtec market segments



Company presentation



Water systems



Water mist



Foam systems



Gas systems



Detection & control

Viking Foam Products



Foam systems

- European manufacturer of foam hardware
- Big range of foam components and systems
- Unique solutions
- FM-approved and UL-listed foam systems
- World wide partner with Fomtec



Company presentation



Viking Foam Products



Foam systems

- Proportioning options



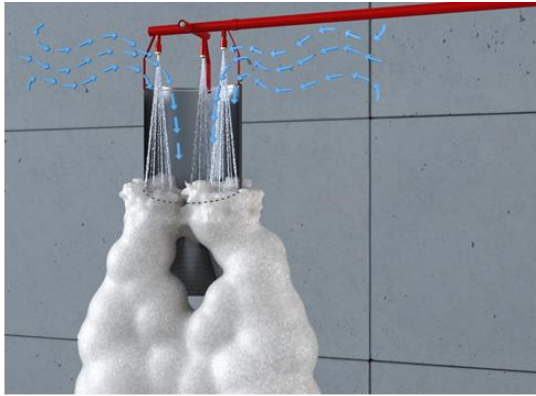
- Discharge devices



Company presentation



Viking Foam Solutions



Back-Up Generator Rooms



Floating Roof Tanks



Large Storage Tank Protection



Large Storage Tank Protection



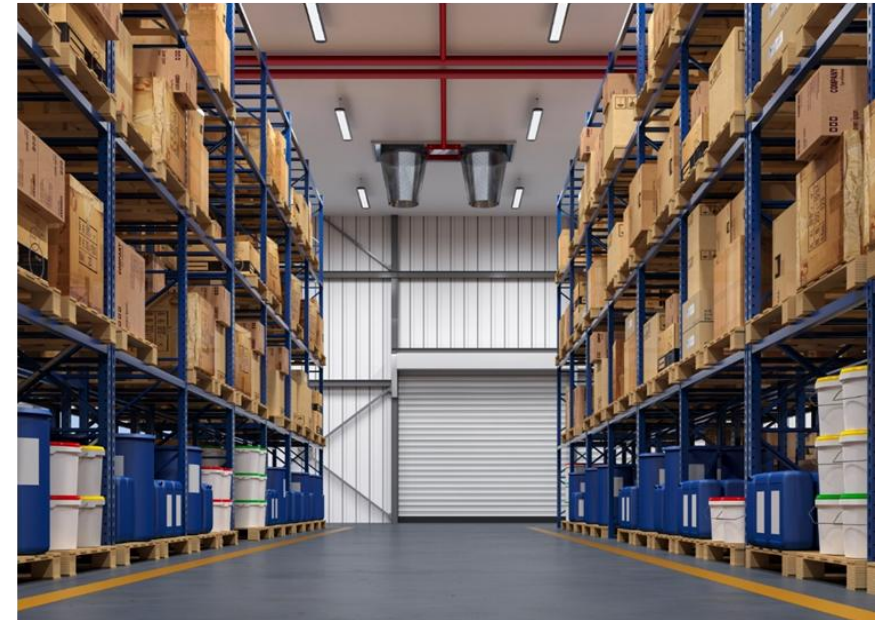
Bunded/Dike Area Protection

Company presentation



Viking Foam Solutions

Warehousing, Storage



Viking Foam Solutions



Flame
Detection



Foam
Deluge
Systems



Manual or
Oscillating
Monitors



Various options for tested, certificated and approved solutions for Aircraft Hangars



Proportioning &
Control Systems



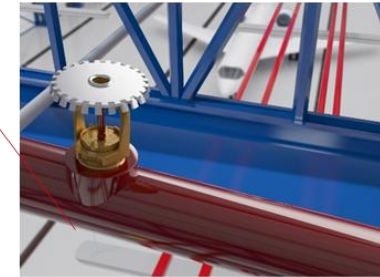
"USP" SFFF Foam
Concentrate



High
Expansion
Systems



Foam
Sprinkler
Systems



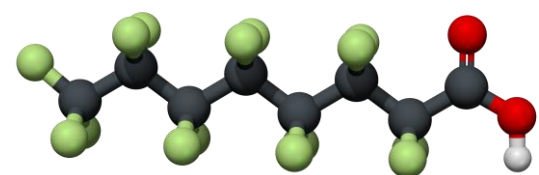
Trench
Nozzle
Systems*





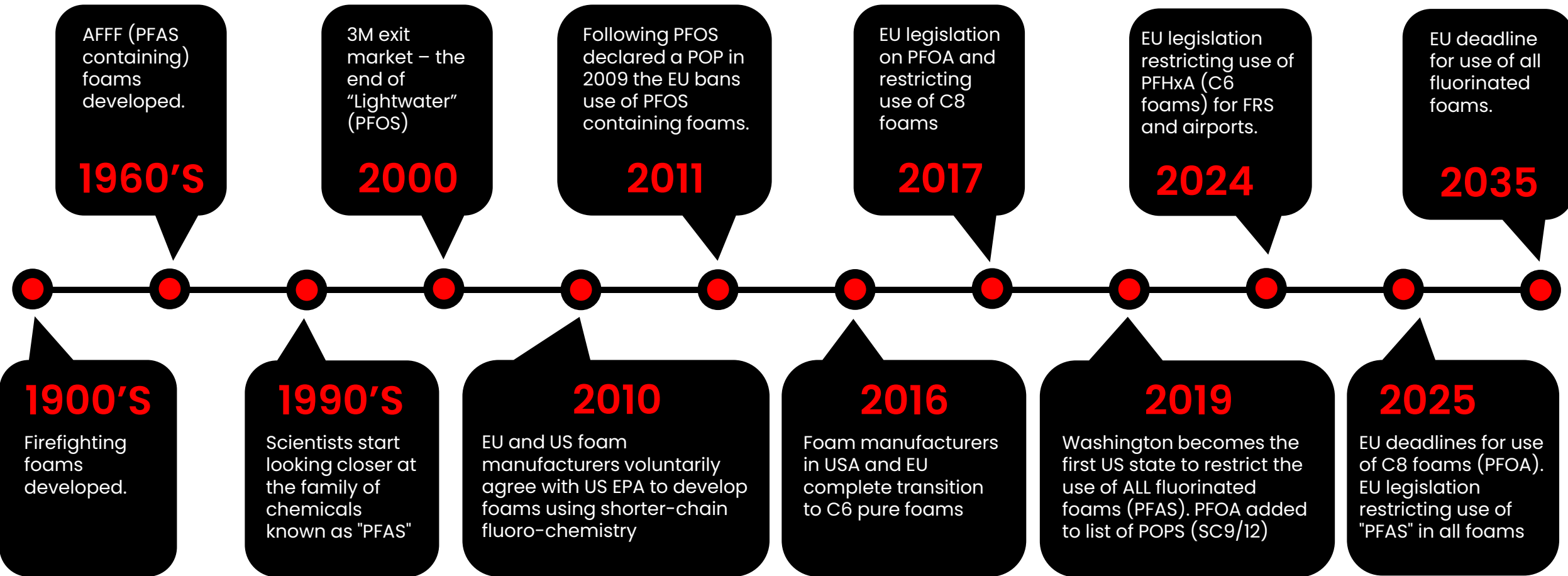
"PFAS" regulations

"PFAS" regulations – terms

- SFFF = Synthetic fluorine free foams. The term was introduced by NFPA and used by the foam business for all “new” generation of high-performance fluorine free foams.
- Film forming foams = AFFF/AFFF ARC/FFFP/FP type foams contain **fluorine surfactant** – often referred to as “PFAS” foams
- "PFAS" = umbrella name for fluorine surfactants = carbon (C) + fluorine chains/molecules of different length/strength and characteristics
- **PFOS** = long chain molecule part of fluorine surfactant manufactured with ECF (electrochemical fluorination) method used by 3M in their “Lightwater” products
- **PFOA** = fluorine surfactant 8 carbon atoms = “C8 fluorine”

- PFHxA = 6 carbon atoms, as pure as can be (minimum C8/PFOA contamination) = “C6 pure fluorine”

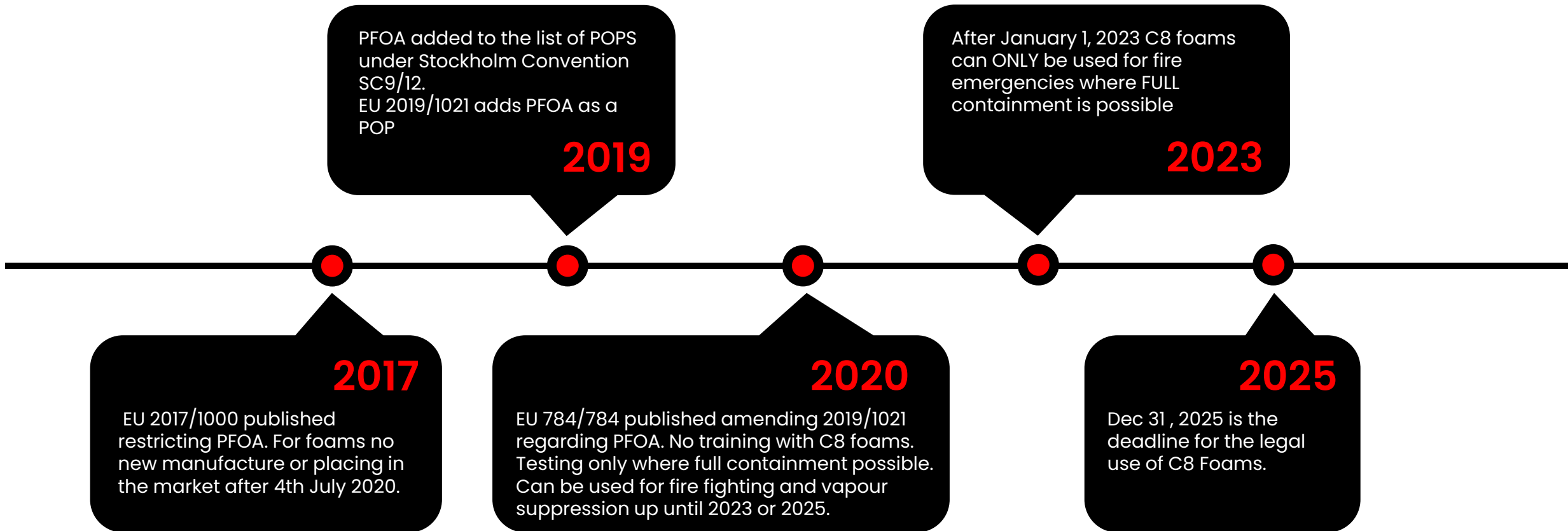
- **PFOS**
 - bio-persistent
 - bio-ackumulative
 - carcinogenic
 - extremely poiseuous
 - reproduction defects
- **PFOA (C8)**
 - persistant
 - break-down products unknown
 - assumed reproductive harm
- **PHFxA (C6)**
 - persistant
 - assumed reproductive harm

PFAS regulations – timeline



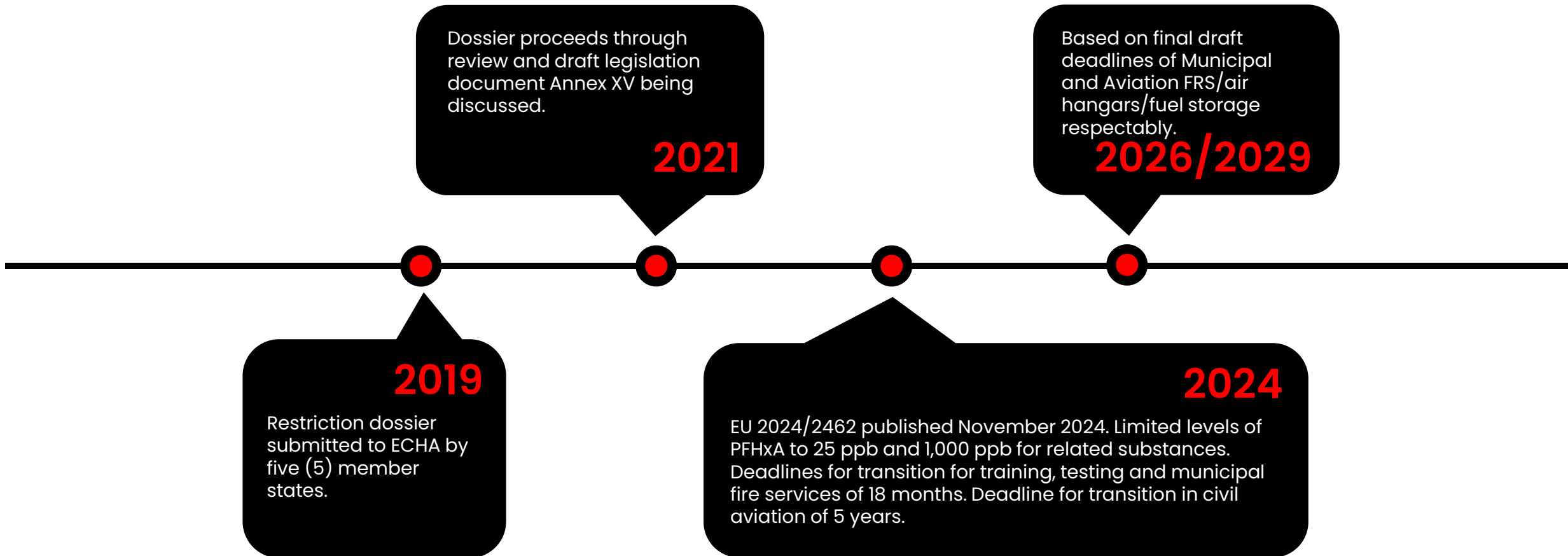
PFAS regulations – PFOA (C8) timeline

EU directives 2017/1000, 2019/1021, 2020/784



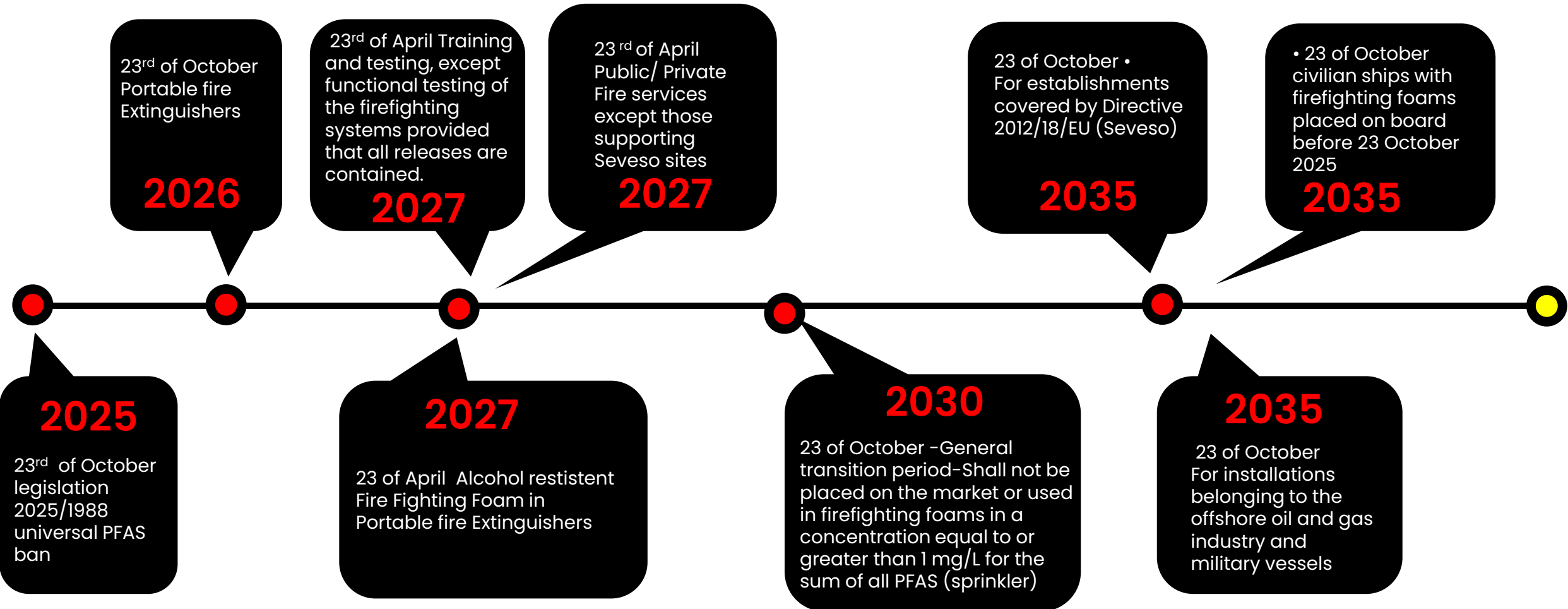
PFAS regulations – PHFxA (C6) timeline

EU directive 2024/2462 applicable for municipal fire brigades and civil airport FRS/air hangars/fuel storage



PFAS regulations – PFAS total ban timeline

EU directive 2025/1988 applicable for all use and storage of firefighting foams with fluorine surfactants ("PFAS")



PFAS regulations – Fomtec foams

- **PFOA (C8)** – Fomtec products with added fluorine surfactant manufactured up to 2016
Banned by EU since 2011
- **PFOA (C8)** – Fomtec products with added fluorine surfactant manufactured up to 2016
Regulated by EU since 2023 and should be completely removed by July 4th 2025. Limit value 25 ppb PFOA and its salts, or 1000 ppb for the sum of PFOA-related substances
- **PFHxA (C6)** – Fomtec products with added fluorine surfactant manufactured from 2016
*Regulated by EU since November 2024. ECHA confirm products should be completely removed by **2029 for airports/air hangars (sprinkler)**. Limit value 25 ppb PFHxA and its salts, or 1000 ppb for the sum of PFHxA-related substances*
- **All PFAS substances related to firefighting foams** – Fomtec products with added fluorine surfactant
*Regulated by EU since October 2025 and cover use and storage of all fluorine containing (PFAS) foams and all market segments and applications. Deadlines will follow pattern of previous regulations (12 months to 10 years depending on market segment/application). For sprinkler applications the **deadline for storage and use of firefighting foams with PFAS substances is 2030** (unless for Seveso site).*



PFAS free foams in
foam sprinkler systems

SFFF fire performance – ”foam quality”

- Without any **fluorine surfactant** the SFFF products cannot rely on film-formation, supreme heat resistance or minimal fuel pickup
- SFFF products rely much more on the build up of a thick foam layer – foam quality – good expansion ratio, long(er) drainage time and bubble structure strength
- SFFF foam quality is determined by the discharge device and is absolutely decisive for fire performance
- SFFF products are much more sensitive to the type of fuel or chemical!

SFFFs are very sensitive to "foam quality" generated by the sprinkler nozzle or discharge device

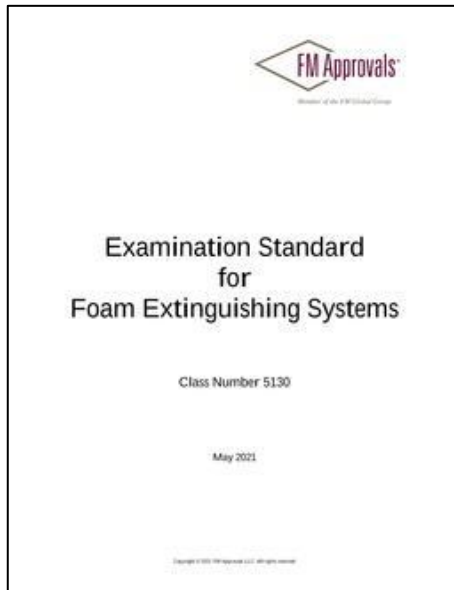
SFFFs are **not drop in-replacements** in sprinkler systems

The SFFF foam concentrate is **one part** of the foam system

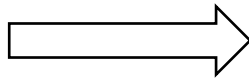
It's not just about the foam concentrate – and it never was!

PFAS free foams – solutions in focus

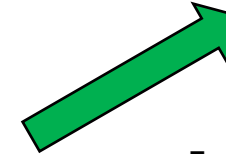
Example: Importance of foam quality generated in a foam sprinkler system



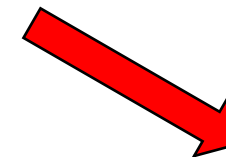
Recognized sprinkler test standard
(FM 5130)



Fomtec Enviro USP foam concentrate
(FM approved with Viking foam sprinkler nozzles)



Foam sprinkler Viking VK300I
(FM approved with Fomtec Enviro USP)



Foam sprinkler head model "B"
(non-approved)

PFAS free foams – solutions in focus

Result after 3 minutes of foam application



Fomtec Enviro USP discharged through Viking VK300I



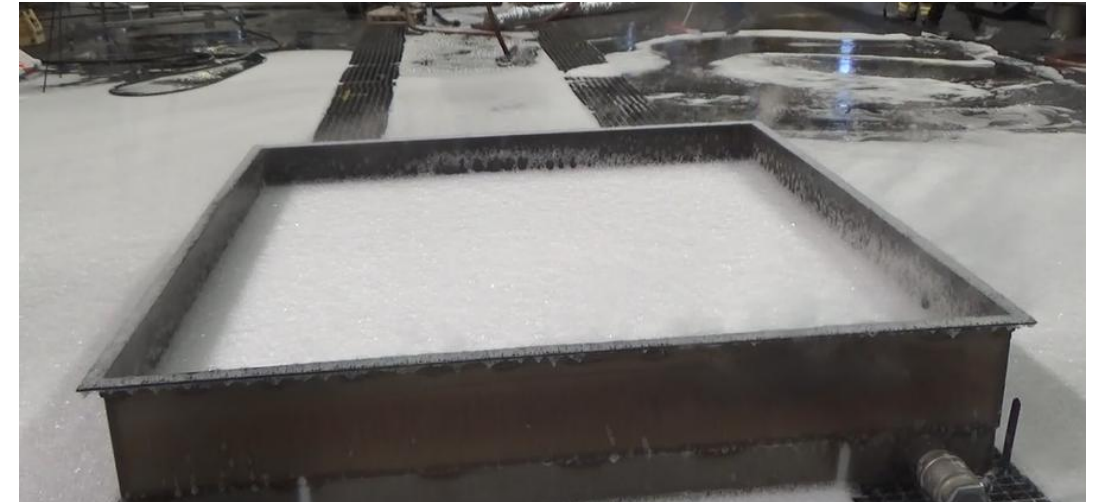
Fomtec Enviro USP discharged through nozzle "B"

PFAS free foams – solutions in focus

Result after 5 minutes of foam application



Foam pass extinguishing test. Fomtec Enviro USP discharged through Viking VK3001 nozzle create a thick, strong foam layer with high foam quality – crucial to prevent re-ignition



Foam just pass extinguishing test. Foam layer from nozzle "B" is heavily reduced from drainage due to inferior "foam quality" – major risk for re-ignition

PFAS free foams – solutions in focus

Result from burnback (re-ignition) test



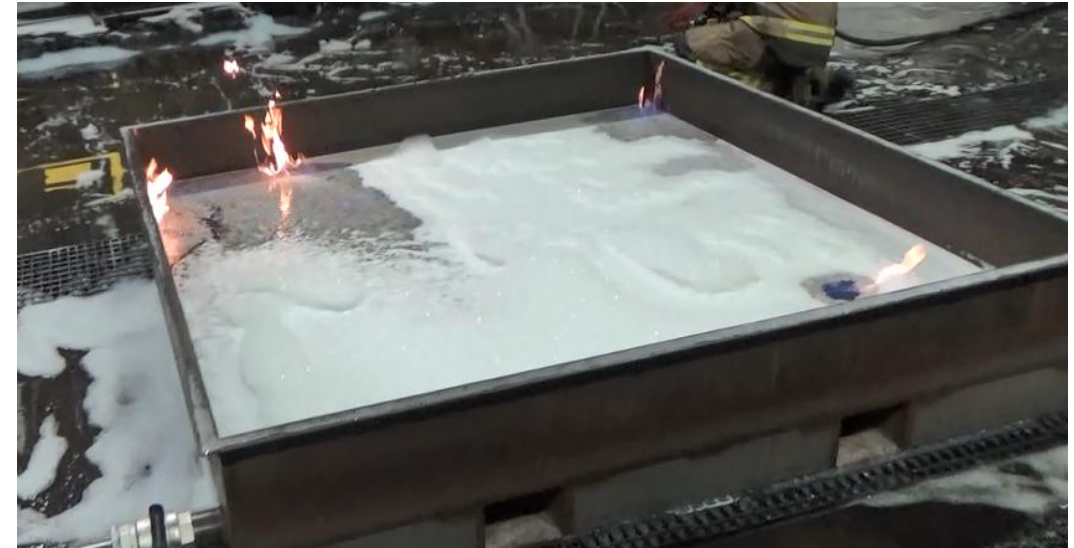
PASS



Foam layer from Viking VK300I and Fomtec Enviro USP is so strong that it is able to close the burning surface and extinguish. Tested and approved system solution!



FAIL



Foam layer from nozzle "B" break down during burnback test and fire re-ignites. This could be the result of drop-in replacement of an SFFF product without proper test and approval.



SFFF transition
requires a holistic
approach

Holistic approach – Approved systems



- SFFF foam concentrates are different from AFFF types
- Different performance, viscosity, properties etc
- Performance must be tested and documented



Holistic approach with FM-approved and UL-listed systems

* Foam concentrate * Proportioning device * Discharge device



Holistic approach – Approved systems



- NFPA 11 – Standard for Low-, Medium-, and High-Expansion Foam
- 6.4.2 Discharge Devices.
- 6.4.2.1 - Discharge devices and foam concentrates shall be listed for use together.
- **FM DS 4-12 – Foam extinguishing systems**
- 2.4.2 Design
- 2.4.2.1 Provide low-expansion foam fire extinguishing systems in accordance with their:
 - A. FM Approval listing limitations.
 - B. Manufacturer's FM Approved design, installation, operation and maintenance (DIOM) manual.
- 2.4.3 Foam Concentrate
- 2.4.3.1 Use foam concentrates in accordance with their FM Approval listings including the ignitable liquid type, equipment, and components identified in the FM Approval Guide as part of the system listing.

Good old-fashioned approach

Performance of a foam system is dependent on a **holistic approach**

What is my fuel? How does it work with my proportioning device? How does my discharge devices work with this new concentrate?

Any approval requirement? What design standard do we need to follow.

A concentrate replacement in a foam system must be proven by testing – not wishful thinking!

Transition of your foam system to PFAS free foam

1. Make a complete system inventory – holistic approach – and consult your foam partner
2. Can the manufacturer or foam partner provide data – **not opinion** – for your system?
3. Ask your foam supplier for a SFFF product tested and documented for your system
4. It may be required to replace foam mixing or foam discharge devices to ensure function of system
5. It may be required to increase system application rate or time for your particular fire risk

Data – not opinion

Holistic approach – recommendations

Fomtec and Viking offer support and tools for a holistic approach:

1. FM approved or UL listed foam sprinkler systems
2. Internal test data according to FM or UL
3. Full scale test using other equipment, foams and fuels
4. Fomtec "foam prediction tool" - unique database
5. Fomtec foam laboratory (foam destruction test)



Holistic approach – recommendations

- Fomtec is the only manufacturer to have a unique tool to determine stability of a specific SFFF product on a specific fuel or chemical – ”foam prediction tool”
- Based on information from existing FM approvals and UL listings
- Based on information from +3500 full scale fire tests
- The database include almost 10000 fuels and chemicals

Fomtec ”foam prediction tool”

CAS No	Substance	Flash Point (°C)	FD-Assessment		Minimum Application Densities				Comment
			Gel Formation	Foam Destruction	Topside (mm/min)	Sprinkler (mm/min)	Topside (gpm)	Sprinkler (gpm)	
67-54-1	Acetone	-18°C	Yes	No	8,2	12,2	0,20	0,30	Based on fire tests
123-86-4	Butyl Acetate	27°C	No	Yes	12,2	12,2	0,30	0,30	Based on fire tests
64-17-5	Ethanol	12°C	Yes	No	6,5	12,2	0,16	0,30	Based on fire tests
78-93-3	MEK	-9°C	No	Yes	23,7	24,2	0,58	0,60	Based on fire tests
108-10-1	MIBK	14°C	No	Yes	23,7	24,2	0,58	0,60	MEK-case

Summary



Viking and Fomtec support:

- Risk assessment based on data – **not opinion**
- Complex projects with many chemicals involved
- Testing opportunities in Sweden and Norway
- Transitioning to SFFF foam systems
- Fomtec Foam Prediction Tool
- Fomtec International Foam School (Helsingborg, Sweden)

Questions? Please contact us ...

Alexander Aria

ariaa@viking-emea.com | +46 709 22 31 40

Carl Rydén

carl@fomtec.com | +46 707 68 04 48