

Fire PROTECTION Standards

In a new “environmental” trend

DEFINITIONS

- Standards, Guidelines
 - e.g.: NFC (US) (NFPA 11, NFP 2001 ...)
- Approvals
 - equipment, agents ...
 - ISO, CEN, DIN, UL ...
 - Marking CE, MED ...
- Regulation
 - Governmental
 - Fire Protection
 - Environmental
 - Fire Brigades

Purpose

- Approvals/Standards and their value
 - Certified Laboratories (Notified in CEN, CPD)
 - Authorized Approval Body's
- Future trends of Foam standards and approvals
 - Adoption of standards to foam agents
 - Adoption of foam agent to standards

2 approaches

- **Hardware + Agent**
(Approval of combination)

PRO:

- Combo will work !
- Specified configuration

CONTRA

- All combo's to be approved
- Expensive testing
- Flexibility ?

- **Hardware / Agent**
Separate approvals

PRO:

- Stand alone Product Quality proven
- Less expensive testing

CONTRA

- Will any combination work ?
- Will any configuration work?

Hardware, Agent combination

- UL 162 Foam concentrate + hardware
Approved by UL/FM
- EN 3 (portable extinguisher)

The Agent is tested in combination with the hardware it's going to be used with it.

The combination is kind of “proved to be working”. However external circumstances can not be foreseen.
However mostly safety factors are foreseen.

On all flammable liquids ?

Agent Standards

- EN 1568 / ISO 7203
- Def 42-40
- LASTFIRE fire test
- US Mil Spec F 24365 F
- Etc ..

The Agent is tested independent from the hardware it's going to be used with it.

Hardware and circumstances are artificial.

On all flammable liquids ?

Value off approvals

Levels of importance

- Customer-User acceptance
- Company Insurance
- Governmental Regulation

- US Mil Spec F 24365 F
- Marine applications
- CEN =>
- EN 1568

QPL Listed

MED

CE marking

CPD Certified laboratory

EN 1568

TOUGH COMPETITION, FOAM PRICES GO DOWN !

- Is the approval done by a CEN CPD notified laboratory ?
- Is the foam concentrate you buy from a reliable company, of exact the same formulation
- Certificate + Fire test ?
- Verification test

Today every foam manufacturer can make a top quality foam, but is limited for price reasons. Your foam is approved under perfect conditions, real life application will show the flexibility.

PAY for Value

Get value for your money

Foam Standards in New environmental Trends

Fluoro Free Foam

Fluoro-surfactant free foam

NON PFOS containing foam

Interludium

PTB

- Persistent
- Toxic
- Bio-Accumulative

Persistent

Simplified Definitions

- CF2 – CF2 – chains, DO NOT BREAK down
 - Or after many thousand years
 - Or by hard UV ray's in the upper atmosphere layers
- CF2 – CH2 – links, do break down easier
 - Reports show data that this happens (proven ?)
 - Or after many hundred years ?
- CH2 – CH2 – do break down kind of easy ...
 - Not always 100% within 28 day's
 - Possibly within a matter of years

Toxic

Simplified Definitions

- Water is possibly “toxic”, or people wouldn’t drown
- Alcohol is toxic, use proper dilution to drink (with some proper flavours)
- Toxic is matter of concentration

However, Fluoro-molecules concentration, will increase in nature, because they do not break down short time.

CONCENTRATION

Never put dishwasher soap in your aquarium, the fish probably all die

Bio-Accumulative

Simplified Definitions

If you drink contaminated water on a frequent base, will the concentration of the contamination in your cell's increase, stabilize or decrease?

Bioaccumulation, means **INCREASE** !

The Half life time of e.g. PFOS is about 200 days (on Monkeys)

2 approaches

(due to water regulation in UK)
(= also EC Directive)

USE none PTB foam

**USE OrganoHalogen
Free Foam**

Don't use foam ?

Collect fire water

- **Burn**

or

- Extract Fluoro- or
Organohalogen and
Burn

Fluor Free Foam

compare to Halon replacement Agents

Clean Extinguishing Agents
(Halon Replacements)

HALON was a super
product, worked anti
catalytic

New agents, typically need
close to the double in
concentration

NEW STANDARDS
with Lower Safety Limits

Fluor Free Foams

Already many years on the
market:

- Wetting agents
- Detergent foams

Meet **existing** standards

- EN 1568
- UL 162
- ...

EN 1568 and FFF

- Part 1: High Expanded Foam: OK
- Part 2: Medium Expanded Foam: OK
- Part 3: Low Expanded Foams: LEVEL ?
- Part 4: “ “ “ on water misc. liq.: OK

In most fire fighting practice, part 3 is the reference

EN 1568 Part 3

- 3 Extinguishment Levels, 4 Burn Back
 - LEVEL
 - 1: Typically for AFFF, FFFP, AFFF/AR, FFFP/AR
 - 2: Typically for FP
 - 3: Typically for Detergent type foams
- NO DIRECT APPLICATION

CONCLUSION = QUESTION TO THE ADIENCE

- Do we need new standards for FFF foams?
- Do we accept EN 1568 part 3 LEVEL 3 ?
Or de we want same performance as the current top quality foams = LEVEL I ?
- Do we need other tests, as e.g. LASTFIRE, ...?

UL 162 allows different foam types to be listed according different application rates.

UL 162 is ready for FFF foams ! ?

FINAL CONCLUSION

- Verify the value of an approval
 - Proper laboratory (expertise)
 - Proper protocol

EN 1568

CEN CPD notified Body

- NO NEED TO RE-INVENT The WHEEL
- Trust in your equipment / Agent supplier
- References
- TRAINING !
- Know the limitations and strengths of what you are working with!