



High Expansion Foam (HEF) Aerosol Research Project

FEA, the European Aerosol Federation, has investigated High Expansion Foam systems as an alternative to automatic sprinklers to control fires involving aerosols in warehouses.

The purpose of this 2-page flyer is to update you on the actual status of the project and to determine if your company would be interested in funding a full scale fire test programme to prove the functioning of an outside air High Expansion Foam system as an acceptable fire extinguishing system for aerosol storage.

The final objective is to make High Expansion Foam systems an available design option for the global aerosol industry and its supply chain through relevant international standards (e.g. NFPA 30B and NFPA 11). This final step will however take considerable time. Participants will benefit from early access and involvement.

You will find arguments in favour of High Expansion Foam systems on page 2.

FEA, the European Aerosol Federation, has previously coordinated several meetings between interested parties – major aerosol manufacturers, foam (equipment) suppliers, logistic companies, insurance companies and others.

Draft testing protocol has been defined and first quotations to carry out such large-scale fire test were received. Budget estimation for fire research is roughly €400 000.

In order to properly build a consortium, participation to the HEF Aerosol project, which is open to all parties, will be split into 4 categories:

- Decision-makers: who participate to decisions, to meetings and testing
- Influencers: who participate to meetings and testing, but without 'voting' right
- Supporters: who are not involved but received reports
- Guests: who only attend meetings and/or testing on invitation (e.g. authorities, NFPA officials)

The financial contributions will be shared in the following way:

- Decision-makers: €30 000
- Influencers: €15 000
- Supporters: €5 000
- Guests: no financial contribution

Participating in either of the above mentioned ways gives a unique opportunity to get information at first hand and benefit directly from test results far before these results will be published in any official standard. This invitation may be especially interesting for (but is certainly not limited to) the following parties: aerosol manufacturing and storage companies, third party logistic companies, insurers, consultants, foam (equipment) suppliers.

If you are interested in funding this important research project, please:

- **contact FEA** (Alain D'haese, FEA Secretary General, alain.dhaese@aerosol.org, +32 2 679 62 80) and,
- **confirm your financial commitment by latest 31 March 2011**.



Arguments in favour of High Expansion Foam (HEF) systems

- Universality:
 - o Other types of fire may already use HEF: combustible solids (A class), liquids (B class);
 - o For all types of aerosol risks: storage, filling, docking.
 - Compatibility with existing norms: the NFPA 11 and NFPA30B standards exist and are applicable.
 - Convenience of installation on existing facilities.
 - Confinement of heat. Testing should demonstrate the HEF capacity to confine heat.
 - Confinement of polluting emissions. This would be difficult to measure.
 - Confinement of smoke. This would be important to prove.
 - Better compatibility with products that react with water, because HEF contains significantly less water.
 - In-building installation.
 - Possible conversion from existing sprinklers installations to foam installations. Keeping parts of the same infrastructure, such as piping and water supply, could be considered.
 - Possible reduced maintenance costs.
 - Reduced pollution because the quantity of water is significantly less. The foaming agents are simple and low pollution surfactants.
 - Need of a low retention or containment capacity thanks to the reduced quantity of water. Reduced cost of installing retention on existing facilities.
 - Better versatility for the facilities, thanks to the universality of this extinguishing system, and the need of a reduced retention.
 - Possible reorganization of protected areas (racking), thanks to the absence of an in-rack sprinkler network.
 - Reduced products loss: only the burnt pallets may need to be destroyed. The other pallets could be saved once the foam is eliminated. Experiments to confirm this point should be carried out during testing.
 - Automatic sprinkler systems do not stop a fire that has not been extinguished at an early stage. With HEF, any fire is extinguished within 3 minutes after the delivery of the foam. This should be verified during testing.
 - With automatic sprinklers the missile effect can spread the fire. With foam, the missile effect would have no impact on the fire:
 - o Aerosol travel would be stopped by the foam. This should be verified.
 - o Aerosols that travel through the foam would be extinguished. This should be verified.
 - Reduced business interruption costs because of
 - o Reduced damage to goods
 - o Reduced damage to the structure of the storage facility
 - o Limitation of the damage to the specific area involved in the fire
 - o Faster environmental clean-up
- This should be verified during testing.