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NEWSLETTER

Foam Transition Updates & Insights

Navigating the Complex Landscape

The transition from PFAS-based foams to Synthetic Fluorine-Free Foam (SFFF) is a topic that has garnered significant attention in recent months. Regulatory bodies such as NFPA and its research arm, FPRF, have been actively publishing technical advisories, emphasizing the importance of a thorough and considered approach to foam transitioning. Their latest communications focus on the critical steps required for a successful and compliant transition, highlighting areas often overlooked by the industry.

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KEY UPDATES FROM NFPA & FPRF

NFPA RESEARCH FOUNDATION
RESEARCH FOR THE NFPA MISSION

Foam System Integrity Assurance

NFPA has introduced a comprehensive framework consisting of 10 elements derived from fire and explosion hazard management processes. This aligns closely with our approach at Archer, where we advocate for a complete 360-degree assessment of foam concentrate and system compatibility before making any transition. A detailed and thorough analysis of the entire system is imperative to ensure safety and compliance. NFPA and most fire safety authorities necessitate a detailed and thorough review of system design because as one fireman put it: SFFF is “not AFFF”. Given the aggressive marketing around new SFFF products, it is common for SFFF products to be marketed as ‘drop-in’ replacements due to disinformation or lack of training. Common issues that can arise when systems are not engineered correctly: Incompatibility of hardware, foam pumps not working, proportioners not proportioning correctly, fuel-foam incompatibility (lighter hydrocarbons or aromatic hydrocarbons can break down SFFF foam blankets faster resulting is shorter burn back times, and many other concerns).

Photo Courtesy: LASTFIRE

Focus on Foam Concentrate Procurement

Choosing the right foam concentrate is more than just meeting fire test specifications like LASTFIRE, UL, and EN standards. It involves ensuring material compatibility, assessing shelf life, and conducting batch testing prior to acceptance. This step is crucial as it directly impacts the safety and efficacy of your firefighting systems. In the latest NFPA guidelines, it is recommended for teams to pay special attention to hydrocarbon fuels with boiling points below 100 degrees Fahrenheit (37.78 degrees Celsius). It is also recommended that multiple passes of foam concentrate may be required depending on the model or brand – ultimately, specific tests are recommended for each application type, to ensure foam performance.

Hydraulic Analysis and Flow Characteristics

Traditional hydraulic calculations using the Hazen-Williams formula, which are suitable for water, may not accurately represent the flow characteristics of fluorine-free foam solutions. This necessitates a revised approach to ensure proper pump sizing and system performance. Studies have previously shown that some blends of currently available SFFF foam solutions (this is the fluid that is downstream of the foam proportioner) have 20-30% greater friction losses. This is a great concern especially for systems that are using centralised proportioning, and the majority of the system piping is foam solution piping.

Samples of two different FFFs - Note water absorption creating “sludge” on top of product. Photo Courtesy: LASTFIRE

Storage Considerations

A much lesser-known consideration is that certain commercially available blends of SFFF are known to be highly hygroscopic, which means it absorbs moisture. When foam absorbs moisture, it becomes more gel like (almost like a sludge). Sludging can affect performance in proportioning and firefighting. In this part of the world, we are living in particularly high-humidity environments due to our tropical climates. Most foam tanks are placed outdoors. Proper storage conditions must be assessed and maintained to avoid these challenges. For example, atmospheric tanks must be filled to the fill column to reduce interfacing areas. Using sealer oils to seal against high humidity environments. Also making sure that temperatures are controlled to ensure that foams do not thermally degrade.

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360° PROTECTION

Commitment and Expertise

At Archer, we understand the intricate technical challenges associated with foam transitioning from day one. We have spent countless hours educating our partners and end-users, cautioning them against hasty decisions driven by aggressive marketing. Unlike other distributors, our role as consultants and advisors comes without any competing interests. Our goal is to provide you with the best, most cost-effective solution that meets your specific needs.

Our comprehensive proposals are designed to cover all aspects of foam transition, offering a detailed assessment that spans procurement, compatibility, and system performance. This ensures that every element of your foam transition process is meticulously planned and executed, minimizing risks and maximizing compliance.

A Call to Action: Ensuring a Safe and Compliant Transition

Transitioning to SFFF is not just a regulatory requirement; it is a commitment to safety and environmental responsibility. We encourage all facility owners and safety professionals to approach this transition with the seriousness it deserves. Our mission at Archer is to help you navigate this complex process with confidence, ensuring compliance while saving time and costs both in the short and long term.

Archer has no brand affiliation and serves as your trusted technical advisor, providing unbiased recommendations tailored to your unique operational needs. For more information or to discuss your foam transition strategy, please contact **Kenny Lee**, Lead Consultant and Director, at kenny@archer-systems.com.

We look forward to supporting you in this critical transition.