

FOAM COMPATIBILITY

Solberg Re-Healing™ Foams (RF) have been field tested for compatibility with other foam technologies, and it has been determined that there are no issues with the co-application of different foams with RF Foam Technology.

NFPA and Australian Standards (AS 1940) state that foam concentrates should not be mixed in foam storage tanks, however, they can be co-applied onto the same fire. Undoubtedly, a large emergency may result in the local fire authority having to use a combination of foam technologies to mount a foam attack. This has been the reality for all major incidents over the last 40 years. Fire fighters have always worried about the co-application of fluoroprotein foams and AFFF foam. The argument has always been that the stiff flowing foam of a protein may not flow fast enough to keep up with the AFFF technology. Obviously when two foam technologies meet, then the dominant foam will do most of the work. Then there is the added complexity of the performance level of the foam concentrate, as low spec. products don't work as efficiently. If there are any issues, it will be where the foam technologies meet, or if the durability of one foam is not as long as the other.

With the added long term environmental concerns of fluorochemical based foams, we have now seen the addition of a new category of Class B fire fighting foams that contain no fluorochemicals. One of the most successful is the Solberg Re-Healing™ Foams, or RF Foams. Without the use of fluorosurfactants, fluoropolymers, or any fluorochemicals, RF Foams have achieved high level fire performance, such as the petrochemical industry standard LASTFire. With the increasing use of Solberg RF Foam Technology the opportunity for two or more foam technologies to be used has dramatically increased.

In 2010, a significant tank split occurred in South Eastern Australia dumping thousands of litres of unleaded petrol into the tank bund. Solberg Re-Healing™ Foam RF3x6ATC was used by the local fire authority in a vapour suppression operation of the bunded area. Back up supplies of fluoroprotein foam augmented the supply of foam concentrates. There were no issues with the co-application of the fluorochemical free RF foam and the fluoroprotein foam. A subsequent foam trial was carried out to confirm the findings. The photograph shown as Figure 1 helps illustrate the findings. The RF3x6ATC built up a thicker foam blanket that

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actually pushed over and flowed overtop of the fluoroprotein foam. The trial continued to observe other protein based foam technology including FFFP and FFFP/AR generated foams. No negative effects were observed during evaluations. Similar testing was carried out with AFFF and Solberg Re-Healing™ Foam (RF) Technology, and again no negative effects were observed. The foam blanket of the combined foams had a suitable duration for a vapour suppression scenario.

Remember, in vapour suppression operations additional foam still must be applied approximately every 30 minutes to maintain a foam blanket. Weather conditions can influence the frequency of the required foam application. A foam blanket of between 100 to 200 mm should be maintained during the entire operation involving hydrocarbon (water immiscible) fuels. Water miscible fuels, such as ethanol, require more frequent applications at higher foam height and application density.



Figure 1: Solberg Re-Healing™ Foam RF3x6ATC being co-applied to a protein based foam blanket. Note the wave of RF Foam Technology flowing over top of the protein blanket. (Photo Courtesy of AkzoNobel Australia)

We have to conclude that emergency response personnel will use all tools that are available to them during a large emergency involving flammable liquids. Therefore, different foam technologies are likely to be used. We are now certain that there are no compatibility issues between the older foam technologies (FP, FFFP, FFFP/AR, AFFF, AFFF/AR) and the Solberg Re-Healing™ Foam (RF) Technology. The co-application of foam technologies will reduce the environmental advantage of the Solberg Re-Healing™ Foams, as the resulting mixture now contains fluorochemicals. If only Solberg RF Foam Technology was

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used, then the foam solution could be treated through an activated sludge waste treatment facility. If it is mixed with FP, FFFP, FFFP/AR, AFFF, or AFFF/AR, then the resulting mixture of foam solution would require ultra high temperature incineration as part of the waste disposal process as per the recommendations of the manufacturers of the fluorochemicals.

If you have any further questions on this topic, please contact the undersigned.

Author: Ted Schaefer BSc MChemTech ME CChem
Manager – Technical/R&D
Solberg Asia-Pacific P/L
E-mail: ted@solbergfoams.com
Website: www.solbergfoams.com

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Solberg Asia Pacific Pty Limited
[ABN 27 124 181 791]
3 Charles Street
ST MARYS NSW 2760
Ph: (02) 9673-5300

