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TESTING OF FOAM CHAMBER, IDENTIFIED AS *FLAMEOUT FTFS TYPE B FOAM MAKER AND FOAM CHAMBER*, IN ACCORDANCE WITH SECTIONS 8 AND 10 OF UL 162, *FOAM EQUIPMENT AND LIQUID CONCENTRATES (1999 EDITION)*

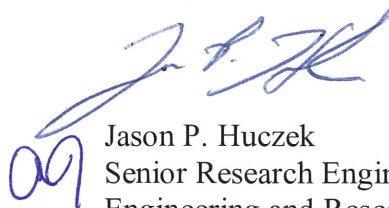
FINAL REPORT
Consisting of 5 Pages

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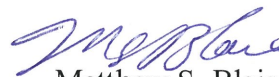
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1.0 INTRODUCTION

The objective of this program was to evaluate the effectiveness of the Client's foam chamber, identified by Flameout Design & Fabrication (Client), as *Flameout FTPS Type B Foam Maker and Foam Chamber*, when discharging various different types of foam fire extinguishing agent. Testing was conducted in accordance with Sections 8 and 10 of Underwriter's Laboratory (UL) Test Standard 162, *Foam Equipment and Liquid Concentrates (1999 Edition)*. Requirements for the use of foaming agents in foam chambers are discussed in the National Fire Protection Association (NFPA) Standard 11, *Standard for Low -, Medium-, and High-Expansion Foam (2005 Edition)*.

The test methods described in this report are intended to measure and describe the properties of materials or products in response to heat and flame under controlled laboratory conditions. The results should not be used alone to describe or appraise the fire hazard or the fire risk of materials, products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a complete fire hazard for fire risk assessment, which takes into account all the factors that are pertinent to an assessment of the fire hazard or risk of a particular end-use.

The results presented in this report apply specifically to the specimens tested, in the manner tested, and not to the entire production of these or similar materials, nor to the performance when used in combination with other materials.

2.0 SAMPLE DESCRIPTION

The Client supplied the foam generator for testing, as well as several liquid foam concentrates. Figures 1 and 2 provide photographs of the foam generator and its components. The foam generator was identified as "*Flameout FTPS Type B Foam Maker and Foam Chamber*". Figures 3–5 show a photograph of the label for each liquid foam concentrate tested.



Figure 1. Client's *Flameout FTPS Type B Foam Maker and Foam Chamber* (Front View).



Figure 2. Client's *Flameout FTPS Type B Foam Maker and Foam Chamber* (Rear View).



Figure 3. Photograph of Label for Tridol Liquid Foam Concentrate.

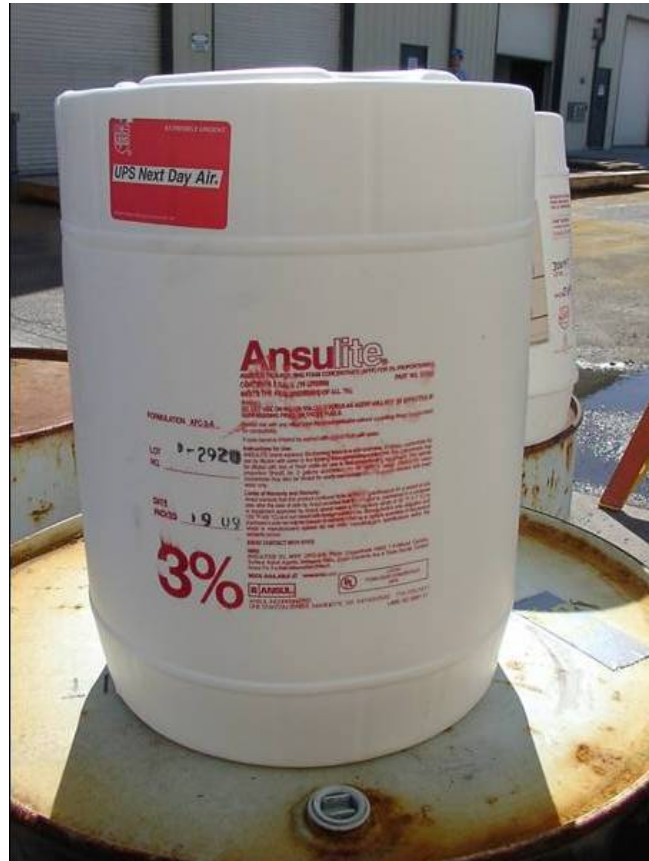


Figure 4. Photograph of Label for Ansulite® Liquid Foam Concentrate.

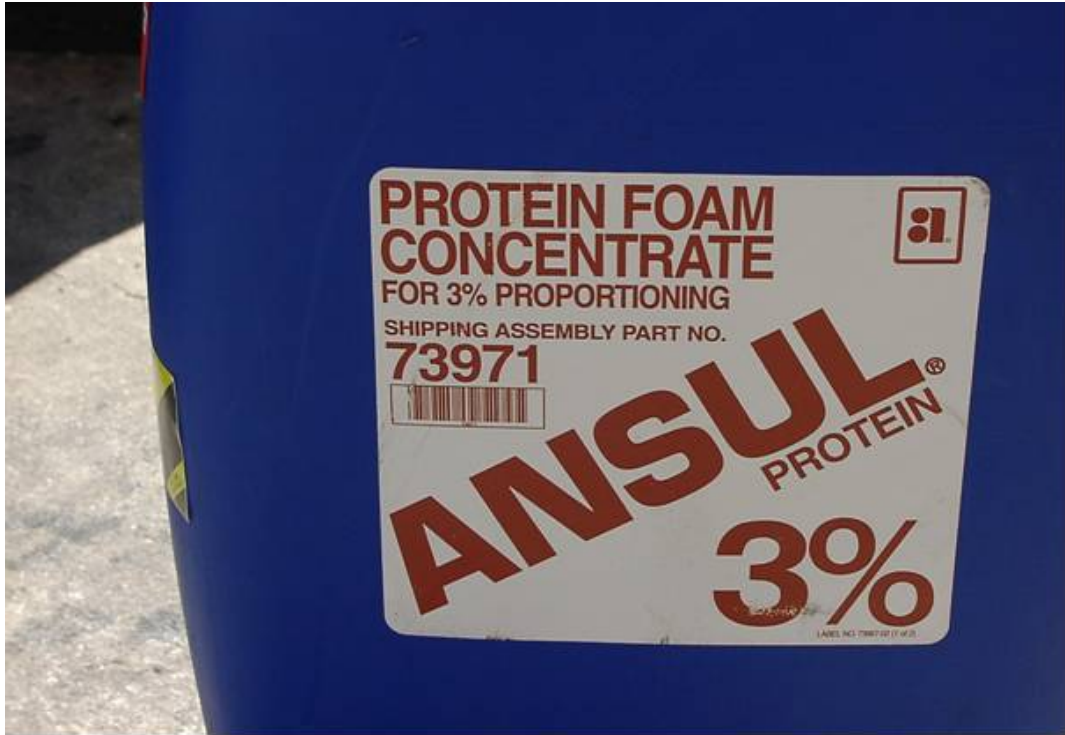


Figure 5. Photograph of Label for Ansul[®] Protein Liquid Foam Concentrate.

3.0 TEST RESULTS

Testing was conducted on October 14–16, 2009, for Flameout Design & Fabrication, at Southwest Research Institute’s Fire Technology Department, in San Antonio, Texas. Table 1 provides a summary of the foam quality results.

Both UL 162 and NFPA 11 require that the foam quality (expansion ratio and 25% drain time) be compared to the foam quality during the original fire approval tests and fall within prescribed limits. The specific foam quality data for the agents tested during their approval fire tests was not available for comparison; however, foam quality tests for various AFFF agents were conducted with the Client’s foam chamber and those results are summarized in Table 1 below. Typical expansion ratios for low-expansion foam range from 2:1 to 20:1 and drain times can vary from several minutes to several hours.

The Client’s foam chamber, *Flameout FTFS Type B Foam Maker and Foam Chamber*, discharged foam with the properties summarized in Table 1. These properties are consistent with low-expansion foam agents discharged at a slow flow rate, as required in UL 162.

Table 1. Summary of Test Results.

| Test ID | Foam Concentrate | Expansion Ratio (water/foam) | 25% Drain Time (min:s) |
|---------|-------------------------------|------------------------------|------------------------|
| 1 | 3/3% Tridol AR-AFFF | 2.75 | 7:20 |
| 2 | Ansulite [®] 3% AFFF | 5.31 | 19:55 |
| 3 | Ansul [®] Protein 3% | 3.91 | 13:20 |