

SAN DIEGO FIRE RESCUE DEPARTMENT
TRAINING AND EDUCATION DIVISION
TRAINING BULLETIN

NO.: 19-01
DATE: October 2nd, 2019
TO: All Personnel
FROM: Willie Melendez, Battalion Chief, Training Officer
SUBJECT: Class A Foam Application
SUBMITTED BY: James Laing, Driver Training Officer, Training Division

Introduction: There has been a noticeable increase to the usage of Class A foam on small vegetation fires. In fact, it has only been a few months into our fiscal year and we have already spent over half of the budgeted funds available on Class A Foam for the year.

Description: Review of proper application rates and methods for Class A Foam

Training/Implementation: Class A foams were developed for forestry firefighting in the mid-1980s. However, over time, it has been found that foam can also be a valuable tool with other Class A type fuels, including structural firefighting. Class A foam concentrates are a mixture of foaming and wetting agents in a non-flammable solvent. These products are generally non-hazardous, non-corrosive and non-flammable as well as bio-degradable. Class A foam is used at very low concentrations, in ranges from 0.1% to 1.0% depending on the application. San Diego Fire-Rescue Department now uses SILV-EX Plus "Class A " Fire Control Concentrate. SILV-EX PLUS is a low, medium, and high expansion, SILV-EX PLUS concentrate is designed specifically for use on Class A fuel fires including wood, paper, coal, and rubber. Although designed for Class A fires, SILV-EX PLUS foam can be effective on some Class B flammable liquid fires when applied by medium and high expansion devices. SILV-EX PLUS foam concentrate can be proportioned from 0.1% to 1.0% in fresh, brackish or sea water

Extinguishing Properties and Uses of Class A Foam

Class A foam extinguishes fires in a variety of ways. Just like water alone, Class A foam commonly achieves extinguishment by cooling the fuel and absorbing the heat. Studies have found that Class A foam can be as much as 300% better at cooling fires than water alone. In addition, Class A foam is around 1,000 times better at penetrating fuel than water. Foam has an additional advantage over water as well. Foam can be applied as a barrier before the fire arrives, insulates the fuel from the heat and utilizes comparatively low volumes of water, thus limiting damage.

SAN DIEGO FIRE RESCUE DEPARTMENT
TRAINING AND EDUCATION DIVISION
TRAINING BULLETIN

Class A Foam Concentrations

As stated before, Class A foam uses relatively low concentrations of foam. Proportioning percentages range from 0.1% to 1.0%. Anything over 1.0% is considered a waste of Class A foam concentrate.

San Diego Fire-Rescue Class "A" Foam Application Rates:

- **.1%, Overhaul** (Wetting Agent)
- **.3%, Direct Attack and Pre-treat brush** (All Type I Engines are preset to .3% when you turn on the apparatus)
- **.7%, Structure Pre-Treatment**
- **1%, Structure Pre-Treatment High Wind**

If using a Portable Foam Eductor use the following Application Rates:

- **1/4%, Overhaul** (Wetting Agent)
- **1/4 to 1/2%, Direct Attack and Pre-treat brush**
- **1/2 to 1%, Structure Pre-Treatment**
- **1%, Structure Pre-Treatment High Wind**

If additional foam aeration is desired utilization of the Nozzle Aspirated Foam System – (NAFS) should be used, and a foam setting of .3% to 1% depending on wind, humidity, and fuel type. San Diego Fire-Rescue apparatus use a low energy nozzle aspirated foam system to discharge a foam solution. This means that air is mixed to the foam/water mix upon exiting the nozzle. Because the air is not added until the end of the hose line, the hose weighs about the same as a standard water-filled hose. In addition, the fog nozzles used are low expansion nozzles so that the discharge is a wet foam that is more suited to direct attack and overhaul, but can still be used for structure protection. NAFS is considered to be five times more effective than water. Nozzle reaction and stream reach are similar to water.

Class A foam concentrate is found on all Type I and Type III apparatus in the SFD. Additional resources for Class A foam can be requested through the Logistics Division which operates a foam supply trailer. This trailer carries 500 gallons of Class A foam concentrate to replenish engine companies on large scale incidents.

SAN DIEGO FIRE RESCUE DEPARTMENT
TRAINING AND EDUCATION DIVISION
TRAINING BULLETIN



Portable Foam Eductor



Nozzle Aspirated Foam
System Nozzle Attachment
used on 125 GPM Nozzle