

Foam Operations for Brush Fires

Overview

The use of foam at times can assist with control and extinguishment of brush fires.

Foam Proportion Rates

Class A fires generally use 0.1% to 1% depending on the application purpose.

*Remember that Class B fires see higher rates of 3% or 6% depending on the fuel.

Foam Proportioning Rate for Class A Fires		
0.1%	<-->	1%
Wetter Foam: Reduces Surface Tension of Water allowing it to soak in and penetrate	<-->	Drier Foam: Allows Foam Solution to stick to vertical and horizontal surfaces better
Shorter Drain Time	<-->	Longer Drain Time
Uses: Situations where we want water to soak in the burning fuels	<-->	Uses: Structure Protection, Fire Breaks

*Generally there is not a benefit of using <1% for Class A fires.

Our Go To Foam Rate for Brush Fires is 0.3% - At this rate we find a balance between the foam being too wet and too dry.

Foam Produced Given Foam Proportioning Rate and Amount of Foam Concentrate		
Foam Proportioning Rate	5 Gallons of Foam Concentrate	30 Gallons of Foam Concentrate
0.1%	5,000 Gallons	30,000 Gallons
0.3%	1667 Gallons	10,000 Gallons
0.5%	1000 Gallons	6,000 Gallons
1%	500 Gallons	3,000 Gallons
3%	167 Gallons	1,000 Gallons
6%	84 Gallons	500 Gallons

0.3 Gallons of Foam Concentrate + 99.7 Gallons of Water = 100 Gallons of 0.3% Foam

Nozzle Considerations:

Smoothbore Nozzles - Should not be used as they do not aerate the foam solution unless they are used as part of a CAFS foam system.

Fog Nozzles - Baseline nozzle to use with foams

Air-Aspirating Nozzle - Increase the aerate of the foam solution leading to higher drain times

Situations Where Foam is Typically Used:

Direct Attack – Foam solution applied directly to the base of flame and adjacent unburned fuels by a Brush unit or Engine Company.

Indirect Attack – Not used by structural fire departments but used by Wildland firefighters to set backfires.

Mop Up/Overhaul – Allows foam solution to soak into fuels such as wood, hay, etc.

Exposure Protection – Foam applied by an air-aspirated nozzle will last about 30 minutes in hot weather. High-quality foaming agents will leave at least ½-inch of foam on all surfaces. A 1% foam rate allows foam solution to stick to surfaces better.

References:

Pierce Manufacturing Inc.'s Foam Training manual –

National Wildfire Coordination Group PMS 210, January 2014

IFSTA Pumping Apparatus Driver/Operator Handbook, 2nd Edition