

# TECHNICAL BULLETIN

## High-Expansion Foam Concentrate

*The expansion of foam depends on the equipment or hardware installation and the foam concentrate design.*

### **When is High-Expansion Foam needed?**

There are several situations in which high-expansion foam can be used for fire protection.

- **To keep water usage and damage to a minimum:** A high-expansion foam can expand 200 to more than 2500 times. This means that a given volume of foam solution, expanded 1000 times, yields 1000 times that volume.
- **To fill up difficult-to-reach spaces:** Some spaces can't be entered or reached. High-expansion foam can fill up these areas and suppress the fire.

- **Three-dimensional fire situations**

High-expansion foam can fill up spaces from the ground up, providing the coverage needed for higher-level fires or three-dimensional fires.

### **Major Considerations When Using High-Expansion Foam**

While there are many advantages to using high-expansion foam in the appropriate situations, there are important points to consider before utilizing the high-expansion foam solution.

The following recommendations are helpful guidelines regarding the best approach to using high-expansion foams in situations from the ideal to the practical reality.

- High-expansion foam concentrate

is specially designed to produce high-expansion foam. This foam is not recommended to be used in applications other than those requiring filling up areas in order to suppress the fire. The typical expansion is around 1000:1 or even higher. (Standards define high expansion as foam expansion from 200 to 2500, and higher).

- The application is typically in closed spaces. The foam has to build up in height in order to extinguish higher and three-dimensional areas.
- Measures must be taken to prevent the foam from escaping the protected space.
- Because high-expansion foams are vulnerable to heat and acid smoke from the fire, the area must be ventilated.



*Solberg is a global company that is a one-stop resource for firefighting foam concentrates and custom-designed foam suppression systems hardware, offering both traditional and innovative firefighting foam technology. [www.solbergfoam.com](http://www.solbergfoam.com)*



### **ARCTIC™ Foam and High Expansion**

SOLBERG high expansion foam is specially designed to provide expansion exceeding 1000:1 with proper equipment.

High Expansion	200 - 2500
Medium Expansion	20 - 200
Low Expansion	4 - 20
Very Low Expansion (Water spray/sprinklers)	1.5-4

ARCTIC ATC™ foam concentrates are also able to provide expansions in the high-expansion range. ARCTIC 3x3% ATC foam concentrate provides expansion of 79 gallons (300 litres) and ARCTIC 3x6% ATC foam concentrate provides expansion of up to 132 gallons (500 litres) when used at 6%. (Expansion of ARCTIC 3x3 ATC can also be increased when used at higher concentrations.)

The advantage of ARCTIC ATC foam concentrates is that they have a wider range of application, for added versatility. They are typically used in low to very low expansions. But, when necessary, this same foam concentrate can be used as high-expansion foam.

The draining of AFFF/ATC foams will provide a film which will cover liquid spills on the floor. This same draining will provide faster cooling of hot surfaces. This can be effective in case of hot and liquid fire combinations.

Most of the time, the major extinguishing mechanism of a high-expansion foam on fire is suppression (preventing oxygen from feeding the fire).

#### **Conclusion**

When used properly, high-expansion foam can be a very effective — and versatile — firefighting tool.