

When to Use Balanced Pressure Foam Systems

1. Balanced pressure foam systems are normally selected when the flammable liquid hazard to be protected requires a foam / water solution flow rate of 600 LPM or more and a duration of 10 minutes or greater.

2. Bladder tank systems become less effective at flow rates above this range when proportioning accuracy is needed or the flow rate varies due to zoned system activation or closed head sprinkler systems.

3. The size of 5000 liter or larger bladder tanks also becomes a consideration. Bladder tanks need to be located near the sprinkler or discharge device riser pipe. Balanced pressure systems offer an advantage in that the balanced pressure foam pump system can be located anywhere and the foam concentrate is pumped to the ILBP ratio controller located in the riser. The location flexibility of the balanced pressure system often is the preferred foam proportioning option. Further, when multiple sites need foam protection to be installed, the foam can be piped to each location without the need for multiple bladder tanks. This saves money and makes the installation easier.

4. Balanced foam proportioning systems provide the best foam proportioning accuracy. This is important for safety reasons, ensuring that the foam concentrate is added into the water stream at the design percentage and not below.

5. Balanced pressure foam systems can save the customer money as they will not require an “outside expert” to recharge the bladder once a discharge has taken place. All that is required with a balanced pressure system is the refill of the foam tank.

6. Balanced pressure foam systems do not require an elastomeric bladder that can deteriorate or tear over time.

7. Balanced pressure foam systems can be refilled during a fire and immediately after a fire, making the system “ready” again in a very short time. This is important as there are usually unignited flammable liquids still present after the fire is extinguished and the need for an operational foam system is critical for clean up and safety.

8. Balanced pressure foam systems are not subject to valves that may be left open by accident. Bladder tank systems use valves that can be left open, which can allow the foam to drain into the riser over time. There is no way to tell that this has occurred. Thus, the foam is already in the riser and diluted. When the system is activated, the foam that is needed may not be present or pure.

9. The cost of balanced pressure systems are usually less than bladder tank systems greater than 4000-5000 liter capacity. A “certified and stamped pressure vessel” is not required for balanced pressure foam systems.

10. Balanced pressure systems do not use a “sealed” tank so that the foam can be easily sampled and a visual inspection can be done. In addition, the customer can change the foam concentrate type if the hazard changes and a new foam type is required. It is simple and easy to change the foam in a balanced pressure foam system storage tank.

In summary, balanced pressure foam proportioning systems offer advantages in many applications. There many factors to consider when selecting the best foam proportioning system for the hazard to be protected. A detailed cost and engineering analysis should be done to advise the customer of all options and considerations.

Balanced pressure foam proportioning systems quite often are the best choice for the hazard, and are popular worldwide for many of the reasons that have been reviewed above.