

Switchgear Building Protection.

The AFP range of blast vents have been specifically designed and tested to vent the excess pressure in a building that can arise when an electrical fault in a switchgear gas cooled compartment causes a discharge into the surrounding building.



Blast Simulation

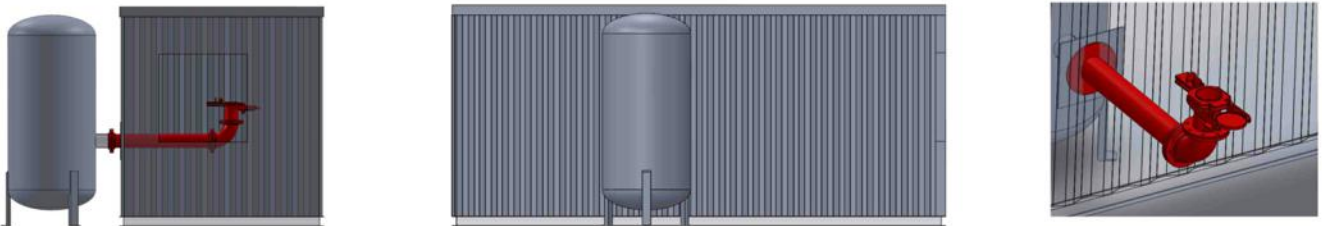
There is no standard or testing protocol for blast venting in these exact circumstances and this is why AFP has built its Blast Simulator to mimic these types of extremely rapid pressure discharges and designed our own testing standard for blast vents.



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Blast Simulation

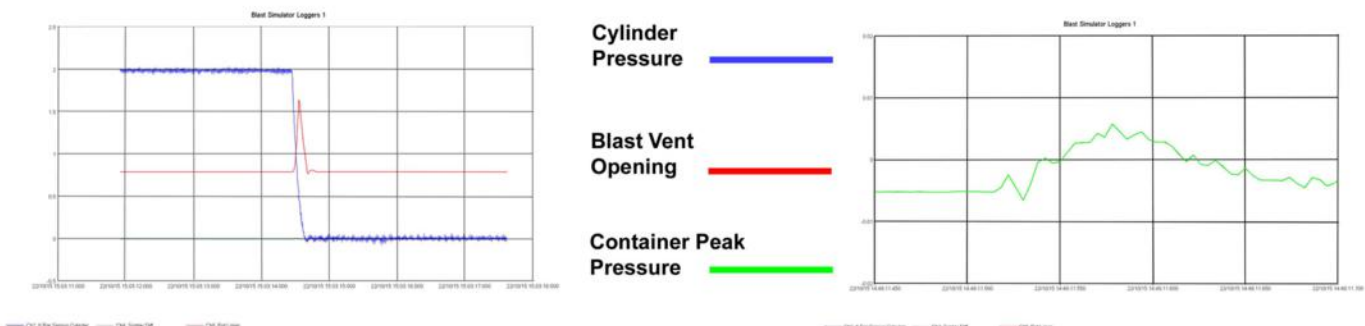
The AFP Blast Simulator has been built to simulate a variety of switchgear gas cooled compartments with volumes up to 1.8m³. It can operate at pressures up to 10bar to recreate rupture disk burst settings up to this pressure, and also has output orifices up to 150mm to represent varying rupture disk diameters.



This produces the same instant pressure discharge as can be produced during a switchgear fault, with a typical total discharge time of between 0.1 and 0.2 seconds. When the correct sized AFP SHX UN Blast vents are installed, this results in the time to peak pressure, in the building, being suppressed to just 0.06 seconds which has the effect of massively reducing any potential overpressure that could result in structural damage.



By monitoring the pressure in the pressure cylinder, the test container and also the position of the blast vent blades at 20HZ, the relationship between the rates of gas volume increase in the test container, versus the rate at which the blast vent blades open, can be associated with the peak pressure in the container.



Discharge Time 0.1s

Peak Pressure 0.06s

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The data collected from the AFP live discharge tests can also be integrated into the results produced by certain software simulations.

Most of the simulations we have seen do not take into account the rate at which the blast vent opens, in the 0.01s increments needed to fully assess how the over pressure relates to the free vent area of the vents over time.

This now means that thanks to AFP blast testing, the theoretical simulations can finally be matched up to an expected discharge from the 'real world'.

SHX UN Blast Vents.



The SHX UN Pressure/Blast vent also comes in a motorised version so as to provide ventilation if so required.

(Please visit our website www.afpairtech.co.uk for all product details)

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SHX UN Blast Vents additional testing.

The SHX UN range has also been Gas Ignition explosion tested. Using a high speed camera they have been measured to full open in 11ms with no structural failures at non vented enclosure test pressure up to 20 bar (oxygen/acetylene mix)



Certified fire tested to 4 hours for all sizes.



Environment testing of all of our external louver units, which have been proven to give superb external weather protection.

