AMEREX TECH Tip №48

COMPACTION AND CAKING OF DRY CHEMICAL EXTINGUISHING AGENT

One common misconception about stored-pressure fire extinguishers is that the dry chemical extinguishing agent is prone to compact over time to the point that it cannot discharge.

Stored-pressure dry chemical fire extinguishers maintain pressure exerted in all directions within the cylinder, not solely from the top. This constant internal pressure distributes the pressurizing gas between the dry chemical particles and keeps the chemical fluidized during both storage and compaction testing. Once the valve is opened, the gas rapidly expands, instantly fluidizing the agent. This is also the reason these types of extinguishers are always pressurized through the valve and downtube.

All UL Listed dry chemical fire extinguishers are subjected to rigorous vibration and compaction tests through UL299, CAN/ULC-S504, Dry Chemical Fire Extinguishers. The purpose of these tests is to compact the dry chemical so tightly, replicating elapsed time and conditions in the field, that it proves the extinguisher will discharge when needed. All Amerex dry chemical extinguishers have successfully pass these tests.

Cartridge-operated extinguishers, by contrast, are not under constant pressure, and as a result:

- They can be tampered with, (fill caps loosened, cartridges loosened, hoses loosened), which can allow the chemical to be compromised with moisture or foreign materials.
- Their operation relies upon gas going through a tube and a series of ports and check valves. If this gas tube is not removed during hydrotest you will certainly develop a block. It may also get blocked from chemical moving into the tube if it is not checked during annual maintenance.
- Must undergo an annual internal examination, unsealing the fill cap once a year.
- The gas distribution system in a cartridge operated extinguisher will not fluidize caked chemical, nor will a stored pressure extinguisher operate correctly with caked chemical. Cartridge operated extinguishers, by design, are more susceptible to moisture intrusion than stored pressure extinguishers.

Another misconception is that moisture can enter a stored-pressure fire extinguisher and cause caking of the dry chemical. This cannot occur under normal operating conditions. The internal pressure of our hand portable dry chemical extinguishers ranges from 195-240 psi, exerting pressure throughout the cylinder and onto the seal and o-ring of the valve assembly. For anything to enter the cylinder through any potential opening, the external pressure would have to be higher than the internal pressure. Atmospheric pressure outside the cylinder is approximately 14.7 psi and does not generate enough force to allow moisture to enter through any potential openings when the extinguisher is under normal operating pressure.

Stored pressure fire extinguishers are most susceptible to moisture when they are not under constant pressure, like a cartridge-operated extinguisher, during the refill or recharging process. ***Please download our Owner's Service Manual P/N 05602 for further information on servicing Amerex stored pressure dry chemical fire extinguishers. All manuals are readily available for download under "Amerex Manuals" at our "Learning Center" tab on our website: www.amerex-fire.com. Use the QR code at right for a direct link.***

TT48-0526

7595 Gadsden Hwy.
P.O. Box 81
Trussville, AL 35173

Ph (205) 655-3271
customer.service@amerex-fire.com
intl.sales@amerex-fire.com

www.amerex-fire.com
webstore.amerex-fire.com