

A D V A N C E M E N T S



Game-changing data set to transform fire sprinkler corrosion protection

Edited by **Cortec® Corporation,**

Cortec® is a proud supplier of Vapor phase Corrosion Inhibitors for Vapor Pipe Shield, a patented corrosion protection system from General Air Products. Released in 2023, Vapor Pipe Shield is UL Listed for use in dry and pre-action fire sprinkler systems and is steadily gaining acceptance. New test results show the clear advantages of Vapor Pipe Shield, promising to reshape the industry's approach to corrosion protection in fire sprinkler systems even further.

Protecting dry fire sprinkler systems from corrosion

Dry pipe fire sprinkler systems are critical to fire protection strategies in areas subject to freezing temperatures and sensitive areas such as hospitals, museums, data centres, or any facility where sprinkler pipes are left unfilled due to the prospect of water leaking on delicate artifacts and equipment.

Preventing corrosion inside these systems is critical to maintaining reliability and reducing the risk of costly sprinkler pipe replacements, frequent repairs, and—worse yet—failure. According to an article on “Nitrogen Generators for Dry Pipe Systems” by Mark Hopkins, Engineering Director at Summit Fire Consulting, an industry practice for corrosion protection over the last 15 years has been to purge as much oxygen as possible out of a sprinkler system using a nitrogen generator. Hopkins

explained that this method falls within the NFPA 13 Standard for the Installation of Sprinkler Systems and (at 98% purity) allows contractors to use the Hazen Williams C-Value of 120 for hydraulic calculations.

However, maintaining the necessary level of 98% nitrogen purity has proven to be challenging in published testing.

New test results show VpCI® advantage

To compare the effectiveness of Cortec® VpCI® (used in Vapor Pipe Shield) against compressed air (simulating untreated systems) and 98% nitrogen, General Air Products commissioned Corrosion Testing Laboratories, Inc., to conduct five years of testing on the subject. The first year of test data was released in December 2024, indicating that VpCI® protection was up to 7



times more effective on carbon steel coupons partially submerged in water than the protection of 98% nitrogen. Now, in the newly released version (2025 edition) of NFPA 13, the 120 C-Factor allowance has been extended to Vapor phase Corrosion Inhibitor delivery systems including Vapor Pipe Shield. This important change validates the effectiveness of Vapor Pipe Shield to inhibit corrosion in these systems and its rapid adoption by the fire protection industry.

Benefits of VpCI® for fire sprinkler protection

The preceding test results raise the question: why would VpCI® have such an advantage over nitrogen purge? In answer, the benefits of VpCI® start with, but go beyond, corrosion protection.

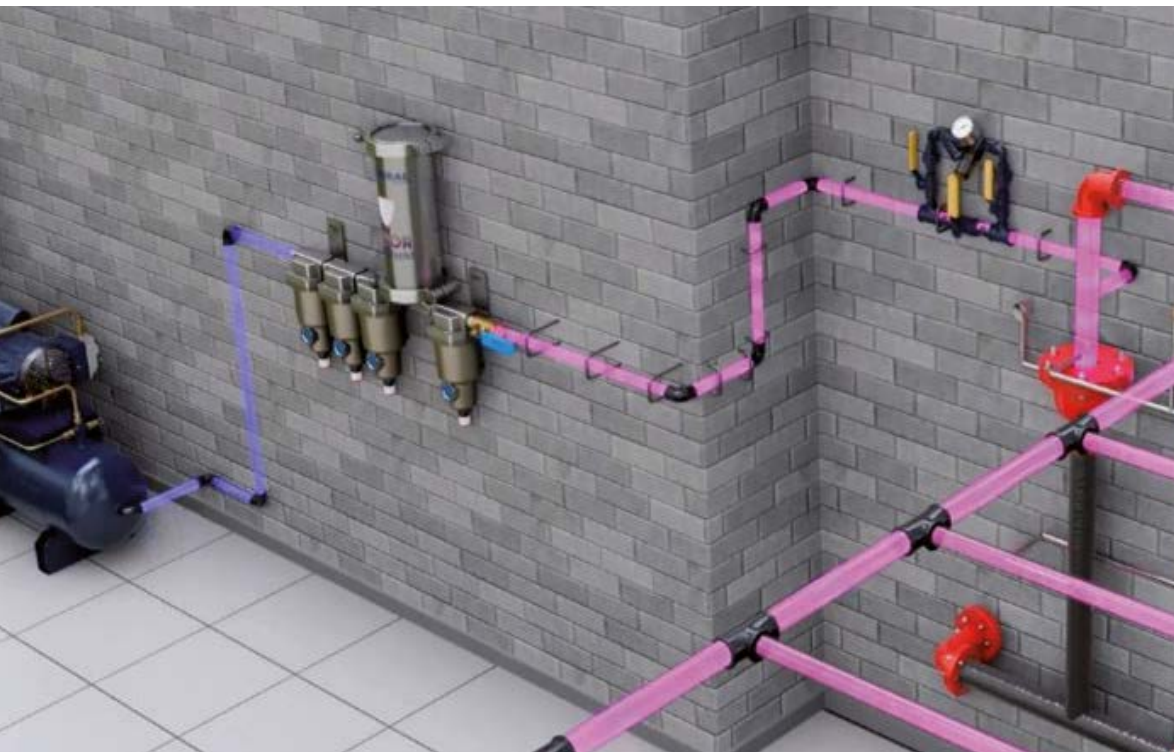
- VpCI® is extremely easy to apply and requires little maintenance.
- Unlike a standalone nitrogen generator, the VpCI® delivery system is not dependent on a source of electricity.
- VpCI® protects even in the presence of corrosive materials, when it is not possible to completely remove oxygen, water, or chlorides.
- VpCI® is thorough, protecting in the liquid phase, vapor phase, and at the air-water interface, diffusing even into hard-to-reach areas like branch lines.

An industry game changer

General Air Product's test results only reinforce the already expanding industry adoption of VpCI® and Vapor Pipe Shield. To put this in perspective, Ray Fremont Jr., President of General Air Products, recently noted, "Since launching Vapor Pipe Shield in March 2023, we've seen tremendous adoption across North America, with over 500 installations to date. That milestone speaks not only to the effectiveness of VpCI® technology but also to its growing recognition as a game-changer for corrosion mitigation in dry and pre-action fire sprinkler systems."

Exciting future developments for fire sprinkler systems

Cortec® is proud to partner with General Air Products in making this innovative corrosion inhibiting solution available for the protection of critical dry and pre-action fire sprinkler systems and looks forward to future developments as this technology's application expands. Stay tuned for more game-changing updates expected in 2025! ▣



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