

N₂-Blast® - Corrosion Inhibiting System

for Fire Protection Systems

Life cycle costs analysis and benefits of utilizing a Nitrogen Generation System

Data Centers

- Eliminate Oxygen, moisture and inhibit corrosion
- Ensure Fire Protection System is operative in the event of a fire
- Avoid disruption to the flow of business
- Protect the lives of data center personnel



Retailers

- Utilizing supervisory Nitrogen yields a significant ROI
- Extend new sprinkler pipe service life by more than 70 years
- Avoid pinhole leaks and premature sprinkler pipe failure
- Prevent ice blockages



Military

- Ensure the integrity of Mission Critical Fire Protection Systems
- Arrest corrosion with high purity, dry, supervisory Nitrogen
- Extremely low dew point prevents ice plugs and freeze-ups



Parking Structures



Museums



Universities



Resorts



N₂-Blast[®] - *Corrosion Inhibiting System*

for Fire Protection Systems

Life cycle costs analysis and benefits of utilizing a Nitrogen Generation System



Nursing Homes

- Replace supervisory compressed air with dry, inert Nitrogen
- Reduce corrosion rates by up to 92% and avoid pinhole leaks
- Minimize false system trips and fire watch procedures
- Protect the lives of patients and facility personnel



Cold Storage Facilities

- True -40° F dew point creates extremely dry, pure atmosphere
- Eliminate moisture and avoid ice blockages
- Smart, simple design eliminates unnecessary run-time
- Most dependable Nitrogen Generation System available



Hotels

- Ensure the integrity of Fire Protection Systems in attic spaces
- Safeguard against improper fire sprinkler system installations
- Utilize supervisory Nitrogen to eliminate trapped moisture
- Minimize exposure to attic fires, protect property & save lives



Mission Critical

- Displace moisture and prevent freezing in Preaction systems
- Ensure Preaction system is operable in the event of a fire
- Quickly extinguish fire before it effects facility operations
- 24x7x365 uptime



Distribution Centers



Hospitals



Laboratories



Stadiums

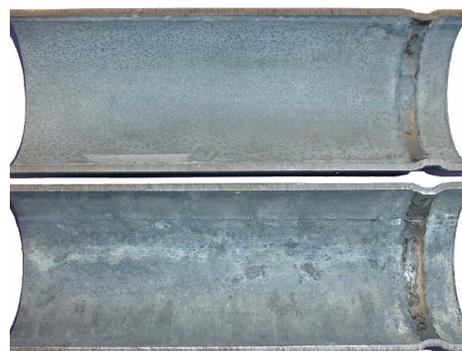
SPRINKLER PIPE TESTING

RESULTS OF LONG-TERM
EXPOSURE TESTS¹ PROJECT
A SIGNIFICANT SPRINKLER
PIPE SERVICE LIFE EXTENSION
AS A RESULT OF UTILIZING
NITROGEN.

Compressed Air

Nitrogen

Galvanized
Steel



Black
Steel



18-Month Exposure

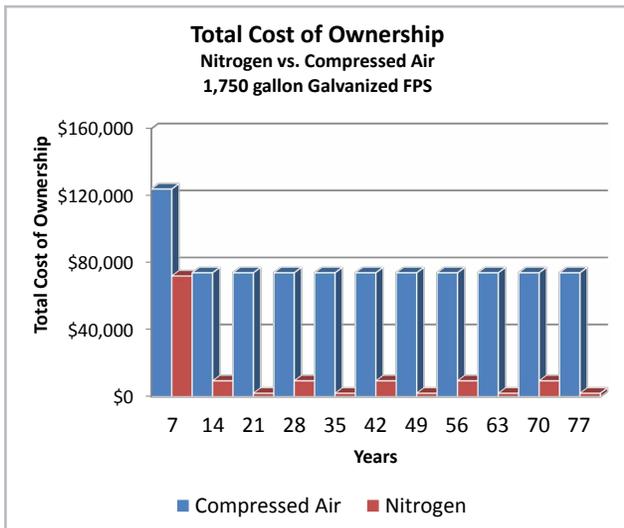
- Potential extension of black steel pipe service life from 14 to 48 years
- Potential extension of galvanized steel pipe service life from 7 to 79 years

¹ Schjiff, O. J. (2012). Pr.Eng., Ph.D. Technical Report: Corrosion in Dry and Preaction Systems. Wilmington, NC.

*Note: Exposure tests conducted using Schedule 10 piping.

LIFE CYCLE COSTS

COMPARE THE LIFE CYCLE COSTS ASSOCIATED WITH UTILIZING A NITROGEN GENERATOR TO THOSE OF COMPRESSED AIR IN A 1,750 GALLON, SCHEDULE 10 GALVANIZED STEEL FIRE PROTECTION SYSTEM.

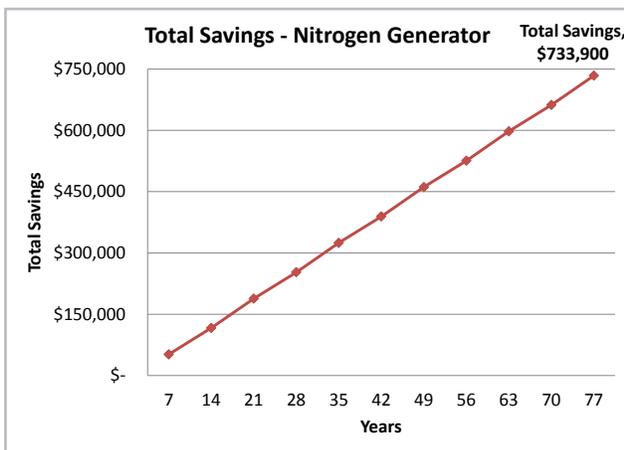


Compressed Air

- Yields only 7 years of pipe service life
- \$124,000 invested over first 7 years
- \$74,000 invested every 7 years thereafter

Nitrogen Generator

- Extends pipe service life 72 years
- \$51,900 in savings over first 7 years
- \$116,400 saved by year 14



Lowest Total Cost of Ownership (TCO)

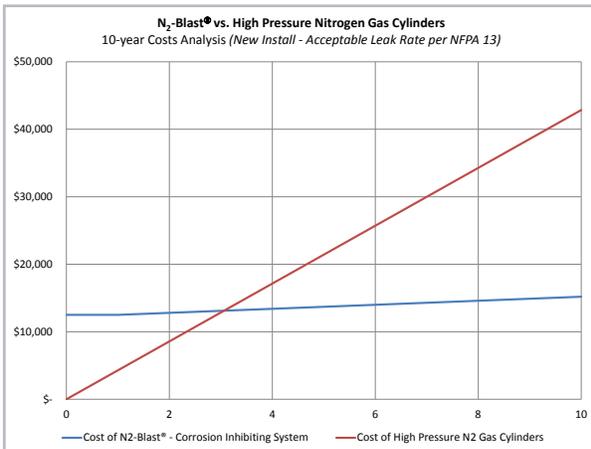
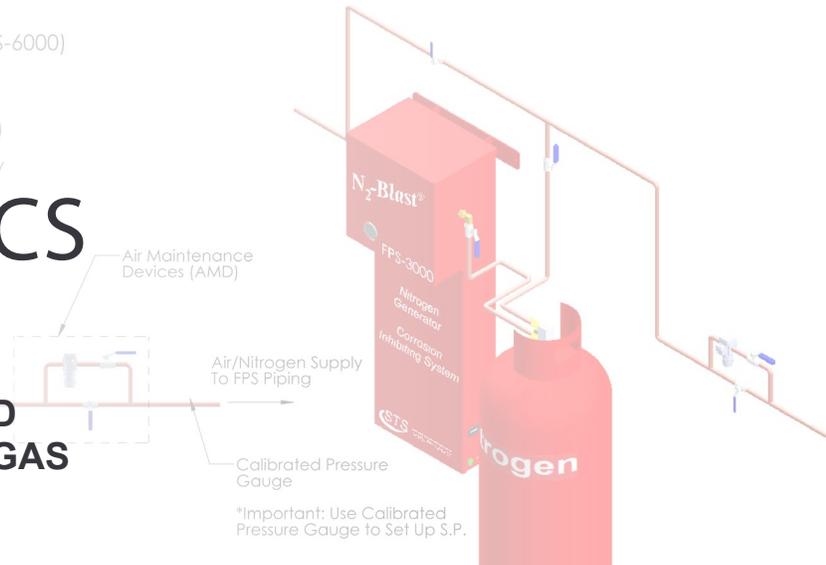
- 7-year savings - \$51,900
- Year 14 - \$116,400
- Year 21 - \$188,300
- Year 28 - \$252,800
- Year 35 - \$324,700
- Year 42 - \$389,200
- Year 49 - \$461,100
- Year 56 - \$525,600
- Year 63 - \$597,500
- Year 70 - \$662,000
- Year 77 - \$733,900

The N₂-Blast® is the most cost effective approach and achieves the lowest long-term cost of ownership.

N₂-Blast™ "Type II" Nitrogen Generation System
 (Available in sizes up to the FPS-1750, FPS-3000, and FPS-6000)

GREAT ENGINEERING AND ECONOMICS

**ASSESS THE LONG-TERM COST
EFFECTIVENESS OF UTILIZING A
NITROGEN GENERATOR INSTEAD
OF HIGH PRESSURE NITROGEN GAS
CYLINDERS**



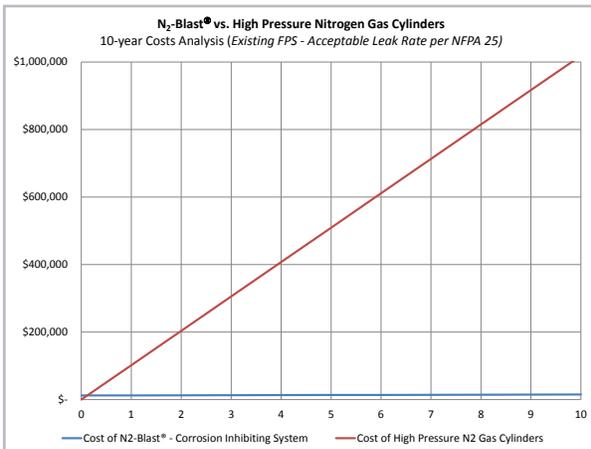
New 1,750 Gallon FPS Installation (Acceptable Leak Rate per NFPA 13)

High Pressure Nitrogen Gas Cylinders

- 36 cylinders needed per year
- \$4,300 annual burdened cost

Nitrogen Generator

- One-time upfront cost
- Less than 3-year ROI
- More than \$25,000 saved over ten years



Existing 1,750 Gallon FPS (Acceptable Leak Rate per NFPA 25)

High Pressure Nitrogen Gas Cylinders

- 849 cylinders needed per year
- \$102,000 annual burdened cost

Nitrogen Generator

- Immediate ROI
- More than \$85,000 saved annually

- Safely generate Nitrogen on demand and avoid handling hazardous high pressure Nitrogen cylinders
- Infinite supply of Nitrogen eliminates the risk of untimely cylinder run-outs and FPS de-pressurization
 - Avoid hidden fees such as fuel surcharge, delivery and yearly rental

PRODUCT COMPARISON

SEE THE BENEFITS OF UTILIZING AN N₂-BLAST® - CORROSION INHIBITING SYSTEM OVER THE ALTERNATIVES.

RELIABILITY

At South-Tek Systems, we've been manufacturing dependable Nitrogen Generators for over a decade.

We have more than 8,000 systems installed and operating in the U.S.

The Government utilizes our technology in Laboratory (USDA) and Military (USMC) applications because it is tried, tested and proven to last. We're also proud to offer the best warranties in the industry.



WHY N₂-BLAST®

Air compressors do not provide any protection against sprinkler pipe corrosion and moisture accumulation within sprinkler piping. Compressed air, containing 20.9% Oxygen, exits the air compressor between 180-200°F and enters sprinkler piping through the Air Maintenance Device(s). As the air cools to ambient temperature (in the case of a cold storage facility, the temperature can drop below 0°F) condensate forms and collects within the sprinkler piping. This results in ongoing maintenance, such as draining the Dry or Preaction Fire Protection System (FPS), replacing corroded sprinkler pipe and dealing with troublesome ice blockages.

Another alternative is an air compressor paired with regenerative desiccant dryer. These systems supply down to a -20°F dew point, offering slightly better protection against moisture accumulation. However, moisture still tends to collect within the sprinkler piping, thereby compromising the integrity of the FPS. In addition, air compressors with regenerative desiccant dryers introduce 20.9% Oxygen - the key ingredient in corrosion - into the FPS.

The N₂-Blast® - *Corrosion Inhibiting System* produces 98%+ pure Nitrogen on demand and introduces it to the Dry or Preaction Fire Protection System. Maintaining the Fire Protection System with supervisory Nitrogen lowers the dew point to between -40° and -70°F. The N₂-Blast® - *Corrosion Inhibiting System* displaces Oxygen and moisture from within the sprinkler piping and effectively inhibits corrosion, freezing and ice plugs.

	Air Compressor	Air Compressor w/ Regenerative Desiccant Dryer	Nitrogen Gas Cylinders	N2-Blast® - <i>Corrosion Inhibiting System</i>
Dew Point	n/a ¹	-20°F	-40° to -70°F	-40° to -70°F
Displaces Oxygen	No	No	Yes	Yes
Removes Moisture	No	No	Yes	Yes
Inhibits Corrosion	No	No	Yes	Yes
Inhibits Ice Blockages	No	No	Yes	Yes
Gas Supply	Infinite	Infinite	Finite	Infinite
Black Steel Pipe Life Exp.	14 years	14 years	n/a ²	48+ years
Galvanized Pipe Life Exp.	7 years	7 years	n/a ²	79+ years

¹Dependant upon atmospheric conditions

²Ineffective without purging capability