

*South-Tek Systems –
DeOx™ - Corrosion Inhibiting System*

Designed for: Wet Fire Protection Systems (FPS)

1.0 Description of Work

- 1.1 The Fire Sprinkler Contractor shall provide all required equipment, materials, labor and services needed to install a complete and operational South-Tek Systems *DeOx™ - Corrosion Inhibiting System*. This system is designed to service all Wet Fire Protection Systems or as directed per the Design Engineer. Installation guidelines by the manufacturer shall be followed.

2.0 Sprinkler Contractor shall provide the following:

- 2.1 Complete System Package shall be as specified:

- 2.1.1 3.0 *DeOx™* Equipment Skid
- 2.1.2 4.0 Oxygen Release Systems
- 2.1.3 5.0 Liquid Nitrogen Dewars
- 2.1.4 6.0 Nitrogen Cylinders
- 2.1.5 7.0 System Startup and Technical Training

3.0 *DeOx™* System

- 3.1 The Fire Sprinkler Contractor shall provide and install a South-Tek Systems *DeOx™ - Corrosion Inhibiting System*
- 3.2 A single South-Tek Systems *DeOx™ System* shall provide deoxygenated water for up to (6,000) total gallons of sprinkler pipe capacity within all Zones (Zone = sprinkler piping plumbed from a single Riser). For a building containing more than (6,000) total gallons of capacity, consult South-Tek Systems to verify the correct system for the project.

4.0 Oxygen Release System

- 4.1 Each South-Tek Systems *DeOx™ - Corrosion Inhibiting System* shall be provided with FM approved Oxygen Release Systems that displace trapped air from a section of sprinkler piping within a Wet FPS, eliminating the air-water interface.
- 4.1.1 Two (2) Oxygen Release Systems are required per Wet System
 - 4.1.2 Mounts horizontally on either a vertical or horizontal section of the FPS piping

5.0 Liquid Dewars

- 5.1 The *DeOx™ - Corrosion Inhibiting System* utilizes Nitrogen for pre-purging each Zone, producing deoxygenated water and drying the *DeOx™* cartridge. The installing Fire Sprinkler Contractor is responsible for furnishing the correct number of liquid Dewars to be onsite for system startup (contact South-Tek Systems for help in determining the required quantity).

- 5.1.1 Pre-Purging with Nitrogen:
 - 5.1.1.1 (1) 230L Dewar contains 4,380 cubic feet of Nitrogen
 - 5.1.1.2 732 cubic feet of Nitrogen is required per 1,000 gallons for the pre-purge
 - 5.1.1.3 (1) 230L Dewar is capable of pre-purging up to 5,983 gallons of Wet Sprinkler Pipe Capacity.
- 5.1.2 Producing Deoxygenated Water:
 - 5.1.2.1 (1) 230L Dewar contains 4,380 cubic feet of nitrogen
 - 5.1.2.2 240 cubic feet of Nitrogen is required to produce 1,000 gallons of water
- 5.1.3 Drying the *DeOx*TM cartridge (ensures maximum longevity of the *DeOx*TM equipment)
 - 5.1.3.1 (1) 230L Dewar contains 4,380 cubic feet of nitrogen
 - 5.1.3.2 244 cubic feet of Nitrogen is required to bring the *DeOx*TM system offline once all Zones have been filled with deoxygenated water

6.0 Nitrogen Cylinders

- 6.1 The installing Fire Sprinkler Contractor is responsible for furnishing two High Pressure Nitrogen Cylinders to remain onsite. These will be utilized to produce deoxygenated makeup water in the future as needed.
 - 6.1.1 (1) “K” cylinder contains 244 cuft at 2,200 PSI
 - 6.1.1.1 It is recommended to leave (2) cylinders onsite per *DeOx*TM System following the installation

7.0 System Startup and Technical Training

- 7.1 System Startup Procedures:
 - 7.1.1 Prepare FPS for *DeOx*TM water (i.e. Flush the FPS piping per NFPA 25 Standards)
 - 7.1.2 Install *O₂-Release System/s*TM (i.e. Wet Air Vent) at high points within the Fire Protection System (minimum of one per zone is required).
 - 7.1.3 Connect *DeOx*TM skid to the city water supply, upstream of the Wet valve/s
 - 7.1.4 Installer to provide “X” number of liquid Nitrogen dewars prior to the system startup
 - 7.1.4.1 STS to calculate “X” by determining the capacity within the sprinkler piping
 - 7.1.5 Pre-purge each FPS with Nitrogen from the liquid dewars (STS to assist with process during the startup)
 - 7.1.6 The process to be repeated 2-3 times until a minimum of 98% Nitrogen purity is achieved within the FPS piping
 - 7.1.7 Introduce 0.03 PPM *DeOx*TM water to the FPS, which will equalize out to less than 1 PPM within the piping
- 7.2 If requested by the Design Engineer, South-Tek Systems shall provide on-site guidance and training following the installation of the *DeOx*TM - *Corrosion Inhibiting System*.
 - 7.2.1 Contact South-Tek Systems; 2940 Orville Wright Way, Suite 600, Wilmington, NC, 28405 Phone: 910-332-4173 for further information.