



North American Society for Trenchless Technology
NO-DIG 2006



Nashville, Tennessee
March 27-29, 2006

Maintenance & Support Quality Assurance / Quality Control

There are many types of services provided and materials manufactured used in performing trenchless maintenance; and supporting other trenchless technologies to perform optimally.

Root Control

The Environmental Protection Agency has stated that "The intrusion of roots into sewers is probably the most destructive single element that faces those maintaining wastewater collection systems." Over 43% of SSO's are caused by blockages; and, 50% of blockages are caused by root intrusion. Root control is an absolute preventative maintenance must.

Once inside a sewer pipe, roots have a perfect hydroponics environment in which to grow. The roots are suspended in a well-ventilated pipe and have a reliable source of water containing high levels of plant nutrients. They have a continually replenished supply of nature's most perfect fertilizer and a temperature that is fairly constant all year round. Therefore, sewers provide the ideal growing environment for roots with unlimited source of water and an excellent source of nutrients.

Roots can be controlled through chemical treatment. The basic process consists of chemical laden foam which is injected into the pipe or manhole through a hose. After the foam is released, it compresses against pipe surfaces, penetrates cracks, joints, and connecting lateral sewers. Roots are killed on contact, decay naturally and slough off.

Mechanical Seals

Joint seal materials are manufactured to ASTM C 923 - Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals. The materials used for municipal or light industrial environments are generally elastomeric EPDM or polyisoprene rubber, and Nitrile in natural gas pipeline applications. The locking bands are 16 gauge Type 304 or 316 stainless steel.

Pipe Joint Seals Seals can be placed in all types of host pipes including cast iron, ductile iron, concrete, reinforced concrete, prestressed concrete, steel, PVC,

polyethylene, vitrified clay, FRP and plastic liners. NSF certification is available for use in potable water applications.

The seal functions by bridging the existing pipe joint with the rubber seal allowing continued movement of the pipe joint. The seal provides a bottle tight leak-proof joint repair. And, the seals are capable of withstanding both internal (up to 300 psi) and external pressures (up to 100 feet of hydrostatic head).

Manhole Joint Seals Manhole Seals can stop manhole inflow. Manhole inflow enters manholes through poorly constructed, unsealed joints or through joints that have deteriorated or been broken by soil movement, frost heave, thermal expansion and contraction of the surrounding pavement and/or traffic loading.

Manhole Seals consist of a high quality rubber sleeve and/or extension sleeve and stainless steel expansion bands. The seal works by spanning the adjustment area of the manhole, providing a flexible, watertight seal between the manhole frame casting and manhole cone or corbel.

Manhole Seal materials are manufactured to meet or exceed the physical properties requirements of ASTM C 923 – Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals. These seals also conform to the performance requirements included in the NASSCO Specifications Guideline, SG11.1.5/05. Manhole seals are designed to be installed into existing or new manholes without excavation or manhole entry. They are versatile and can be fit into almost any size or type of manhole and are reusable.

Vacuum Excavation

Vacuum excavation is used for a number of purposes in conjunction with trenchless technology. Utilities can be uncovered without damage, contaminated soils can be removed, and vacuum excavation can be used for the removal of HDD fluids that accumulate around bore holes during drilling operations. The vacuum excavation process utilizes high pressure water or air to dislodge or loosen soil when necessary. Non-cutting nozzles are used when using high pressure water to prevent damage to utilities being uncovered. Vacuuming is then used to remove the soils. Dust control should be in place during these operations. After completion, the original soils are used to refill the excavation to original elevation.

Safety

Safety is a number one priority of all involved in Trenchless Technology. The requirements from written programs, training to equipment required for safe working conditions are too numerous to mention. The Occupational Safety and Health Association (OSHA) provides a number of resources to assist in implementing a safety program. Several exhibitors provide the safety equipment included in the following areas:

- Traffic control
- Trenching and Shoring

- Fall protection
- Confined Space Entry
- Gas detection
- Rescue / Retrieval
- Respiratory protection and air supply

Industry Support

The Trenchless industry is fortunate to have many active organizations and associations promoting and serving growth. These groups provide the necessary resources for testing, research, training, manuals of practice, certification for various service providers and more.

**For More Information on Root
Control Please Visit**



Booth 310

For More Information on Mechanical Seals Please Visit



Booth 208



Booth 216



Booth 616

For More Information on Vacuum Excavation Please Visit



Booth 208

For More Information on Safety Equipment Please Visit



Booth 208

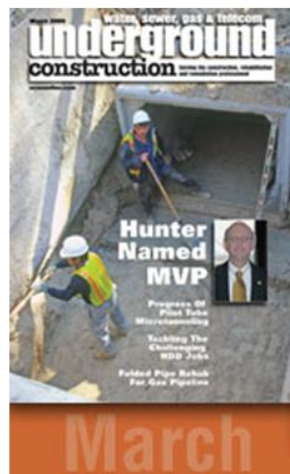


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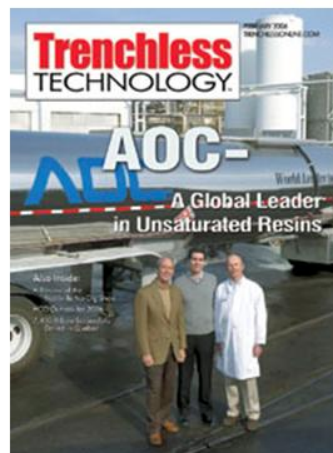


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For more information about Industry Publications Please Visit



Booth 723



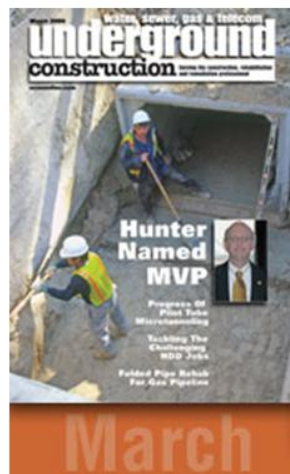
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For More Information on Vacuum Excavation Please Visit

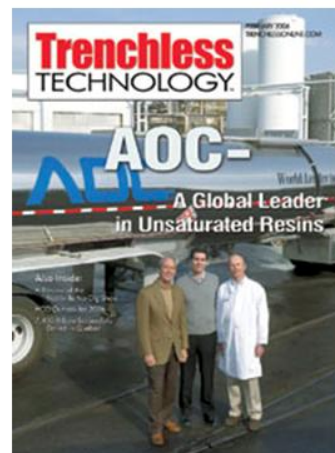


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