



NEOFIT[®]+PLUS

Expandable Pressure Pipe

GENERAL SPECIFICATIONS & GUIDELINES

2021 Edition

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1.0 SCOPE AND INTRODUCTION:

The Neofit®+Plus expandable pressure pipe system is used for rehabilitating ½” up to 2” ID potable water service pipe. The Neofit®+Plus material is designed for the underground potable water service pipe supplying potable water to residential and commercial buildings. It is a complete encapsulating non-invasive pipe rehabilitation system with zero or minimal excavation needed.

The Neofit®+Plus expandable pressure pipe qualifies as a Class B semi-structural interactive material as defined by Standard ISO 11295. It is especially designed to span and seal pinholes, eliminate leakage through joints, prevent internal corrosion and extend the service life of partially deteriorated potable piping systems. The material also forms an impregnable barrier between the existing host pipe, such as lead, copper, plastic or galvanized pipe, and the potable water being supplied.

Neofit®+Plus Certifications & Testing:

- Engineer Tested
- Certified to NSF/ANSI-61 Standards for potable water
- Tested to a minimum 50+ year life expectancy
- Burst Testing as per ASTM D1599 ending on the structural damage and

ONLY TRAINED CONTRACTORS ARE CERTIFIED TO INSTALL The Neofit®+Plus Expandable Pressure Pipe System

1.1 INTENTION:

The intent of Neofit®+Plus is to provide the industry with a non-invasive option to repair and rehabilitate existing potable service piping systems in order to extend their service life. It is also the intent of this system to provide an impregnable barrier between the existing host pipe and the supplied potable water to the end user.

ALWAYS FOLLOW PROPER SAFETY PROCEDURES

2.0 SITE WORK AND PREPARATIONS

2.1 EVALUATION:

The existing underground water service pipe (herein referred to as host pipe) shall be located and evaluated at the corporation stop or meter pit of the water distribution system and where it enters the building for which it is supplying potable water to the end user. The size of the existing host pipe shall be measured for the proper size Neofit®+Plus pipe. The host pipe connection fittings shall also be evaluated to ensure the proper re-connection of the rehabilitated host pipe to the corporation stop or meter assembly and where the rehabilitated host pipe enters the building.

2.2 HOST PIPE PREPARATION:

The Contractor shall use the proper sized host pipe cleaning pig to remove debris and water from the existing host pipe in preparation for the Neofit®+Plus pipe. A proper sized mandrel shall also be used to ensure the material will pass through the host pipe without encountering any obstructions. Obstructions in which the mandrel cannot pass through will need to be located and removed prior to installation. Host pipe fitting bends, other than long sweep 45 or long sweep 90-degree bends, will need to be removed prior to installation.

2.3 PRIOR TO COMMENCING WORK:

The Contractor shall provide the following Certification information to the Owner:

- NSF/ANSI-61 Certification for Neofit®+Plus

2.4 SAFETY:

The Contractor shall conform to all work safety requirements of the pertinent regulatory agencies, and shall secure the site for the working condition in compliance with the same. The Contractor shall erect signs and other devices for the safety of the work site. The Contractor shall also perform all work in accordance with applicable OSHA standards.

3.0 COMPONENT MATERIALS

3.1 MATERIAL:

The Neofit®+Plus Expandable Pressure Pipe shall be 100% virgin polyethylene terephthalate (PET). The proper connection fittings shall be used based on the size and type of the host pipe. This shall be determined by the Contractor as per section 2.1

4.0 TECHNICAL SPECIFICATIONS

4.1 MATERIAL PROPERTIES:

The Neofit®+Plus pipe shall have the capabilities of being expanded, up to an approx. factor of two and a half times it's diameter, by a controlled process. After expansion, the Neofit®+Plus pipe shall have the capabilities of producing a close-fit barrier within the original host pipe.

The pre-expanded Neofit®+Plus material shall have the following characteristics and be sized accordingly with the existing host pipe ID as follows:

- 7mm OD pipe (.60mm approx. wall thickness) for ½" to ⅝" ID host pipe
- 10mm OD pipe (.83mm approx. wall thickness) for ¾" to 1" ID host pipe
- 15mm OD pipe (1.25mm approx. wall thickness) for 1 ¼" to 1 ½" ID host pipe
- 20mm OD pipe (1.66mm approx. wall thickness) for 1 ¾" to 2" ID host pipe

5.0 MATERIAL DESIGN AND SELECTION

The Contractor shall furnish to the Owner, prior to the use of the Neofit®+Plus material, a certificate of completion from an authorized Neofit®+Plus System Dealer/Distributor stating the Contractor has been trained and certified in the installation of the Neofit®+Plus system.

5.1 MATERIAL ACCEPTANCE:

The Neofit®+Plus material shall be transported to and stored at the site in such a manner it will not be damaged, exposed to direct sunlight, or result in and danger to public safety.

5.2 INSPECTION:

The Contractor shall arrange a freely accessible place and means so that all equipment to be used during the Neofit®+Plus installation can be inspected by the Owner. The Contractor shall inspect all necessary equipment prior to mobilizing to the project site. The Contractor shall also provide all necessary tools and spare parts as may be required for the most frequently damaged equipment, and shall make sure that said tools and spare parts are available at the site.

When specified, supporting equipment such as pumps and generators shall be provided at the site in the event there is a fluid surge and pumping is required on an emergency basis. The contractor shall also prepare and make operable all necessary communication equipment for the field crew.

5.3 INSPECTION OF MATERIAL:

The Contractor shall allow the Owner and/or his representative to inspect the Neofit®+Plus materials.

6.0 INSTALLATION PROCEDURE:

Note: Prior to the installation of the product, the Contractor has the option (contingent on the local or state water authorities' requirements) of installing a testing port station where the service line enters the building or structure. The testing station comprises of two test ports, one for testing the potable water as it immediately exists the rehabilitated portion of the service pipe, and one for testing any leakage between the host pipe and the Neofit®+Plus expanded pipe.

6.1 RESPONSIBILITY OF THE OWNER:

The Owner is to locate and designate all access points open and accessible for work, and provide rights of access to these points. The Owner shall also provide free access to water hydrants for cleaning, and other work items requiring water. Unless specified otherwise, the owner shall also furnish a place for disposal of the debris and waste produced from the cleaning of the pipes prior to installation.

6.2 CLEARING OF OBSTRUCTIONS & PREPARATION:

The host pipe shall be cleared of water, debris and other materials that would block proper installation of the Neofit®+Plus pipe as per section 2.2 of this specification.

6.3 INSTALLATION OF THE PIPE:

The Contractor shall position the unexpanded pressure pipe on the approved Neofit®+Plus pipe dispensing unit. This will ensure the unexpanded pipe is protected from damage during installation. The unexpanded pipe is then guided and pulled into the host pipe with the properly sized pulling head, using a nylon string or rope. Once the unexpanded pipe is positioned in the host pipe, the applicable end fittings for attaching the circulation hoses are installed by the Contractor. The hoses are attached to the end fittings and to the inlet and outlet connectors on the main Neofit®+Plus system unit. A separate auxiliary heating unit is positioned closest to the host pipe where the heated water is flowing into the unexpanded pipe inside of the host pipe. The auxiliary heater is to be utilized on all installations to ensure the proper water temperature is being supplied and maintained for proper expansion of the pipe.

Note: In situations where a tracer wire is needed, the tracer wire can be installed into the host pipe prior to inserting the unexpanded pipe by the Contractor, using the proper installation method.

6.4 EXPANSION PROCESS:

Once the unexpanded pipe, auxiliary heating unit, and hoses are connected to the main Neofit®+Plus system unit, the Contractor shall fill the unit with the proper amount of water. An adequate water source and supply shall be available at all times in case additional water is needed during the expansion process. The Contractor turns on the main Neofit®+Plus system unit and monitors it through the circulation and expansion cycles until the pipe is expanded. The Contractor shall record tank temperatures and return temperatures during the expansion process.

6.5 COOL DOWN PROCESS:

After the pipe has expanded inside of the host pipe, the Contractor shall monitor the main Neofit®+Plus system unit while it performs the cool down cycle. Once the cool down process is completed, the Contractor shall release the pressure from inside the pipe by discharging the hot water from the auxiliary heating unit and the main Neofit®+Plus system unit.

6.6 FINISH:

The finished and expanded Neofit®+Plus pipe shall be reconnected to both ends of the existing host pipe using the proper fittings.

6.7 FINAL TESTING & MARKINGS

After the newly rehabilitated host pipe is reconnected to the supply distribution system, the water is energized back into the rehabilitated host pipe. Once the host pipe is pressurized by the supply distribution system, the Contractor shall check the host pipe for any leaks or loss in pressure. The host pipe shall show no signs of leakage or loss in pressure.

If a testing port station has been installed, the contractor shall check the expanded pipe testing port for any signs of leakage between the host pipe and the Neofit®+Plus pipe. After flushing of the system, a water sample may be taken from the water testing port if required by the water authority.

The Contractor shall place warning labels or tags on the rehabilitated host pipe, both at the meter pit access (if available) and where the host pipe enters the building (preferably at the main shut off valve). The warning labels and tags shall state the pipe has been rehabilitated and the pipe should not be cut or heated. The contact phone numbers of the Contractor and the Neofit® Dealer shall be displayed on the tag or label.

7.0 PAYMENT:

Payment for the installation of Neofit shall be based on the scope of work; this payment shall include full compensation for all labor, equipment, material, tools, and incidentals for rehabilitating the existing host pipe

7.1 MEASUREMENTS FOR PAYMENT:

All measurements shall be as specified or made by conventional means with accuracy consistent with field conditions and common practice. Should a discrepancy in measurement exist which is greater than 10%, the item in question shall be re-measured by both the Contractor and the Owner or their representatives for verification.

7.2 MEASUREMENT FOR PAYMENT SCHEDULE:

- Materials
- Mobilization
- Host Pipe Preparations
- Pumping or By-passing (if applicable)
- Installation of Neofit®+Plus Expandable Pressure Pipe
- Final Inspection and Testing
- De-mobilization

7.4 CLEAN-UP:

After the Neofit®+Plus installation has been completed and accepted, the Contractor shall clean up the project site area.

8.0 GENERAL INFORMATION AND WARRANTY:

There are many advantages to Neofit®+Plus system:

- A NON-INVASIVE GREEN TECHNOLOGY OPTION TO REPLACEMENT
- FAST AND EFFICIENT INSTALLATION
- MINIMAL OR ZERO EXCAVATION REQUIRED
- EXTENDS THE LIFE OF THE EXISTING PIPE
- PROVIDES AN IMPREGNITABLE BARRIER BETWEEN THE HOST PIPE AND POTABLE WATER SUPPLY
- SUBSTANTIAL COST SAVINGS VS. EXCAVATION & DEMOLITION
- SMOOTH INTERIOR FINISH INCREASES VELOCITIES
- ASSURANCE OF PROFESSIONAL QUALITY & PERFORMANCE

8.1 WARRANTY:

Contractor warrants labor and workmanship for one year; Neofit®+Plus material has a standard 10-year limited warranty from the distributor/manufacturer. For municipal projects, Neofit®+Plus material has a 25-year limited warranty. This applies to the rehabilitated portion of the pipe only. This warranty does not cover the host pipe, host pipe movement, pipe negligence, excavation damages, foreign materials or objects found in the pipe, excessive chemical or temperature exposures, excessive pressure exposures, normal pipe corrosion, scale build-up, waste or particle build-up, acts of God, earth movement or settling and causes beyond the Contractor's control.

9.0 Appendix A:

Neofit®+Plus (PET) Supplier Standard Packing Procedure

1.0 QUALITY ASSURANCE

1.1 The installer shall be a qualified / trained installer and familiar with the installation and storage of Neofit®+Plus (PET) material.

1.2 The installation and storage of Neofit®+Plus (PET) material for cold water distribution systems shall conform to manufacturer's installation and storage requirements.

2.0 DELIVERY, STORAGE AND HANDLING

2.1 The Neofit®+Plus material shall be shipped to the job site or customer on a pallet in UV resistant packaging. The Neofit®+Plus material shall not be handled rough during shipment. The material shall be unloaded with reasonable care.

2.2 Neofit®+Plus material shall be stored in UV resistant packaging or cellophane in a flat, dry, well ventilated location with a temperature between 50 to 70 degrees Fahrenheit with humidity level above 40% and not exposed to UV light or direct sunlight. Normal care in handling shall be exercised to avoid abuse of the material. The material shall not be thrown or dropped on the ground, walked on, or dragged.

3.0 PROJECT CONDITIONS

3.1 Neofit®+Plus material should not be left exposed in direct sunlight for extended periods of time; short periods not to exceed 1 hour are permissible. When the material is not in use it should be stored in UV resistant packaging and kept out of direct sunlight.

3.2 The Neofit®+Plus material should not be left in an installation storage trailer or vehicle with extreme hot or cold temperatures for extended periods of time; short periods not to exceed 24 hours are permissible.

4.0 SUPPLIER WARRANTY

4.1 The Neofit®+Plus manufacturer shall warrant that the material is free from defects and conforms to the designated standard. The warranty shall only be applicable to material installed and stored in accordance with the manufacturer's instructions.

4.2 The manufacturer of the material shall not be responsible for improper use, handling, or installation of the products.