EncapsulAC® (EAC) Coagula Fluid & Pipe-Bursting (PB)
SPECIFICATION
FOR ASBESTOS CEMENT PIPE (ACP) REPLACEMENT v.1.01

1-1.00

GENERAL REQUIREMENTS AND CONTRACTOR QUALIFICATIONS

This section covers common pipe-bursting (PB) procedures utilizing a coagulation fluid known as EncapsulAC® (EAC) during asbestos cement pipe (ACP) replacement. This method of trenchless construction uses specialty tooling to introduce the vibrant blue colored material to mark the location of ACP, in place, for the protection of personnel in future repair and maintenance projects. The pipe shall be installed in a manner that causes minimal disruption to the surface topography (pressure humping may occur depending on depth of pipes to driveways, yards and streets. Acceptable methods shall be the Static or Pneumatic Pipe-Bursting common in trenchless construction, or an equivalent method approved by the Utility Owner. The equivalent method shall be submitted and set forth in part by the Contractor and comply with all sections here in. Contractors not familiar with EncapsulAC® Pipe-Bursting (EAC-PB) methods can obtain information by either emailing info@EncapsulAC.com or calling 832-257-4967 and requesting more detailed information regarding the EncapsulAC® method of trenchless construction.

Contractor shall have a minimum or three (3) years' experience or be trained and licensed to provide trenchless services with available technology within the industry. The contractor's crew leader shall have completed a minimum of 3 similar installations or there shall be an experienced consultant on the job-site familiar with the required experience. Similar installations shall consist of pipe replacement using Pipe-Bursting for gravity and pressure main applications in an urbanized area with geological conditions similar to those at the site.

The contractor shall submit, to the Utility Owner, the names of the Pipe-Bursting machine operator and on-site Pipe-Bursting Superintendent. These individuals shall have a minimum or three years each of Pipe-Bursting experience and a minimum of 3 applications of EAC to ACP rehabilitations. If neither have such experience, then they need to show proof of formal training by an experienced EAC professional.

***If the Contractor does not meet the experience requirements set forth in the first two paragraphs of this section, the contractor must satisfy the following:*

- The contractor must, to the satisfaction of the Utility Owner, show that he has been trained to use technologies available within the industry or has completed the educational program that provides the contractor a reasonably high probability of successfully completing the EAC-PB replacement
- Or that the contractor has obtained consulting services from someone that meets the experience qualifications outlined in the first two paragraphs of this section.

The Contractor shall submit, to the Utility Owner, in writing, the planned procedure for performing the EAC-PB within the allowable tolerances as listed in: Section 1-1.03 of these specifications.

The procedure shall, at a minimum, include the following:

- Method of Visual Camera Inspection of inside diameter of ACP to locate all taps and or Metallic repair sleeves to be excavated and removed prior to EAC-PB.
- Method for guiding pilot stem through the existing pipe to be replaced without getting outside of the existing pipe.
- Method for providing a means for preventing airborne emissions while Cutting, Breaking and or Handling.
- Method for excavating and removing of taps and sleeves found during visual camera inspection.

1-1.10

EAC-PB REHABILITATION

POTABLE WATER MAINS

- Contractor to set bypass lines to insure residents of community are provided with continuous water supply during EAC-PB procedures.

- Contractor to provide reasonable access to residents to their homes and or driveways over the top of bypass line. Also, provide warning signage of trip hazards and or traffic control.

- Once bypass line is pressurized, excavation of tap procedures should be performed to transfer residents to bypass line, all taps should be removed from ACP at this time.

- Use Isolation Valves to Isolate section of ACP to be Rehabilitated, drain line and begin visual inspection of inside of ACP to detect any obstructions such as elbows, tees and repair couplings these items need be excavated and removed.

- Dig entrance and exit pits as per equipment manufacture's design specifications set required machinery in pits and prepare to proceed with common pipe bursting.

- A specially designed pig assembly and burst head are required to perform EAC-PB and should be installed, as directed by a properly trained EAC-PB crew member or on-site consultant.

- EncapsulAC® Coagula-Fluid is a dry bagged bentonite blend that when combined with water will produces a non-toxic and environmentally friendly vibrant blue colored coagulation media. It should be mixed and blended per specification listed on bags via a venturi mud mixing system with multiple mud-guns to insure proper wetting. Fluid should remain in slow agitation mode during pumping procedures, additional volumes needed to be blended during pumping procedures may be blended into the mix as tank volume is reduced. Volume requirements and mix designs are listed in EAC Bag Count Calculator available at: EncapsulAC.com

- Delivery piping is recommended to be run up through production pipe and connected at back of head. Delivery pipe can be run on the exterior of the production pipe if the proper burst head is utilized.

- As pig assembly and burst head enter old pipe, start the pumping procedures and continue pumping until cavity in front of burst head is filled before continuing with pipe-bursting procedures. It is common for a certain amount of fluid to become visible at the back of the burst head, this will insure proper amount of fluid is being delivered. Pump should be delivering 1000 PSI (67 Bar), which will hold +/- 100 PSI (7 Bar) in the cavity.

- Pumping station should be equipped with a volume indicator to insure proper volume delivery as it relates to burst head speed as no two equipment operators burst at the same speed.

- As burst head reaches exit pit, mix station should switch over to pumping clean water to rinse out delivery piping.

- Any remaining Fluid in Mix tank can be placed in bottom of excavations to insure all ACP particulates are indicated prior to backfilling.

- Vertical holes shall be filled with an earthen material unless they are located in areas that receive traffic bearing loads in which case, they shall be filled with an engineer approved backfill.

SEWER MAINS

For ACP Sewer Mains and Laterals follow steps 4 through 13

DURING ALL EAC-PB OPERATIONS PLEASE NOTE

** If the pump pressure drops suddenly and volume increases (unless it recovers in a few seconds), this is the indication of an unforeseen subterranean void, which could possibly produce a sinkhole in the future. Contractor should make note of the position of this potential void and relay the information to the Utility Owner for their records. Void filling materials are available in the event that the Utility Owners are interested in filling the voids while contractor is on site.**

1-1.2

MEASUREMENT AND PAYMENT

This will be the appropriate Engineer and or Owners call.

1-1.03

TESTING AND INSPECTION FOR ACCEPTANCE OF MAIN LINE

This will be the appropriate Engineer and or Owners call.

1-1.04

ACP DISPOSAL

The Contractor shall be responsible for finding a local land fill to dispose of the removed AC pipe material.

Contractor must comply with all regulations regarding the proper disposal.
Use of an “Alternative Accepted Practice of Disposal” described as “Abandon in Place.” Wherein the removed ACP is abandoned in the bottom of entry and or exit pits so long as they are thoroughly coated in EAC Coagula-Fluid (a coating of EAC Coagula-Fluid is required on the entire pit bottom prior to backfill) to insure all possible particulates of asbestos are contained and identifiable.

This procedure needs to be the call of the appropriate Engineer, Utility Owner, and local governing body.

The exact procedure for completing the AC pipe replacement, shall be the responsibility of the contractor and comply with all local government requirements.