



Sensor probe for detecting side-connections in pipe liner

(ROI #2011-04)

Description

- Lining of deteriorated pipes using thermoplastic, thermosetting or cementitious products is a common approach for the rehabilitation of municipal sewer, storm and potable water pipelines.
- One of the keys for cost-effectiveness of lining technology is the ability to restore side or lateral connections in the main line. Typically, a robotic tool is sent into the pipe after the rehabilitation is complete, and the side connections are opened remotely using a cutting tool. Laterals are detected by visually locating the dimples present on the liner surface. However, if a stiff liner is used the dimples are not clearly visible. Under this circumstance locating the lateral accurately becomes challenging.
- Accidental damage to the liner at a wrong place often requires costly open-cut repairs.
- Many of the commonly used approaches for locating side-connections are inaccurate or limited to certain types of liners

Advantages

- Our approach does not require physical contact with the liner
- Highly accurate
- Can be used with both thin non re-enforced thermosetting liners, stiffer fiber re-enforced liners, and cementitious products
- Amenable to robotic survey apparatus

Areas of Application

- Pin-pointing exact location of housed side or lateral connections within a lined pipe

Patent Status

- US 8,952,706 entitled “Universal Impedance probe for the detection of side-connections through thermoplastic, thermosetting and cementitious liners,” issued Feb 10, 2015.
- Canadian 2,772,848 entitled “Universal Impedance probe for the detection of side-connections through thermoplastic, thermosetting and cementitious liners,” issued Dec 8, 2015.