Electro Scanning Inspection is New Recommended Standard for Rehabilitation Testing & Certification

**ES-38 for Laterals**
- 3” to 8”

**ES-620 for Mains**
- 6” to 30”

**ES-620 Sewer Mains Field Operations**
- Sliding Funnel Plug System
- 6” to 15” Sliding Funnel Plug System

**Electro Scanning Inspection Wastewater Probes**

**ES-2060 Large Diameter Field Operations**
- 24” to 66”

**Bad CIPP**
- Not Seen On CCTV
- Find Defects Before Warranty Expires!

Electro Scanning Chapter Lesson
Pages 231-257, 7th Edition O&M Manual for Rehab Certification

Electro Scan Mobile Inspection Platform
- Voltage Source with Amp Meter
- Electro Scan
--sl-06-02-158 Probe
- Grounding Source
- Current Return Path Through Ground
- Electro Scan
- ES-2060 Probe
- Defects located & measured from the waterline and below.
Defect Flow Calculation
Finds & Measures Openings in Pipe Wall in Gallons Per Minute (GPM), +/- 40% Estimation Accuracy.

Defect Location Accuracy
0.4 inches (1 cm)

Electrical Array
Low Voltage, High Frequency, Focused Tri-Electrode Array

Voltage
11 Volts, AC, RMS

Current (Max)
40 mA

Pressure Sensor
Piezoresistive Silicon Pressure Sensor to Monitor Water Height.

Transport
Pulled Through Pipe By Jet Truck Hose, Floated Line and Winch System, or Other Means.

Flow Requirements
Probe Must Be Surrounded By Water To Conduct Electric Current to Pipe Wall.
- Pipes 6 to 15 Inches: Water Provided By Sliding Funnel Plug System
- Pipes Below 6 Inches and Above 15 Inches: Plug and Surcharge
- Pipes 3 to 66 Inches: Scanning From Waterline and Below

Conveyance Type
Gravity Mains, Force Mains, Laterals, Siphons

Pipe Diameters
3 to 66 Inches

Pipe Access Points
Manhole, Clean-Out, Lamphole, Other

Single Point Scan Range
Limited By Coaxial Cable or Jet Truck Hose Length

Pipe Materials
Asbestos Cement (AC), Cement-Mortar Lined and Coated Steel Pipe (CMSP), Coated Ductile Iron Pipe, Cured-In-Place Pipe (CIPP), Fiberglass Reinforced Pipe (FRP), High-Density Polyethylene Pipe (HDPE), Prestressed Concrete Cylinder Pipe (PCCP), Polyethylene Pipe (PE), Poliyvinyl Chloride (PVC), and Reinforced Concrete Pipe (RCP), and Any Other Non-Metallic and Non-Conductive Pipe Material

Other Names
Focused Electrode Leak Location (FELL), Low Voltage Conductivity

Limitations
- Not Recommended for Uncoated Metallic Pipes
- Cannot Identify Clock Position Of Defects

ASTM F2550-13 Compliant
Standard Practice for Locating Leaks in Sewer Pipes By Measuring the Variation of Electric Current Flow Through the Pipe Wall
Automatically locate all cracks, fissures, broken joints, holes, leaking service connections, pinholes, etc. by measuring the change in resistance of electrical current able to pass through the wall of a pipe.

- Recommended Standard to Certify All Pipeline Rehabilitation, Renewal, & New Installation, Instead of CCTV
- Separate Scans Should Be Taken Before and After Any Rehabilitation
- Recommended To Find Defects Missed By CCTV