



SONTEC

The CSL Tube™

The only steel pipe system
specifically designed for
Crosshole Sonic Logging
(CSL) testing

Photo Courtesy of Malcolm Drilling Company

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MADE RIGHT

RIGHT HERE

What is Crosshole Sonic Logging?



DEFINITION

Crosshole Sonic Logging (CSL) is an accurate method to determine the structural integrity and homogeneity of concrete within diaphragm walls, bored piles, drilled shafts, barretes, concrete piles or augercast piles.

- Widely used for more than 30 years.
- Practical and economical for deep foundation integrity testing.

METHOD

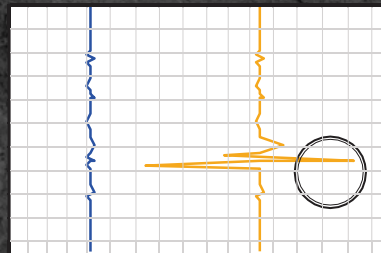
The speed of sound wave propagation in concrete is dependent on the concrete material properties. Thus, the CSL measures the propagation time and relative energy of an ultrasonic pulse between an ultrasonic transmitter and receiver in two parallel water-filled tubes installed at a specific spacing within the deep foundation element during construction.

The transmitter and receiver ultrasonic probes are lowered and lifted in unison in their respective water-filled tubes to test the full shaft length from top to bottom.



Typical tube configuration for a pile (diameter 40 to 55 inches)

One of the CSL tube can be installed with a large diameter, for the purpose of coring in addition to CSL testing



Typical ultrasonic profile (response time and energy on damaged pile)

● Steel rebar ○ CSL tubes → Ultrasonic pulse

About SONITEC

Sonitec, utilizing its unique Push-Fit technology is the only steel pipe system specifically designed and manufactured for Crosshole Sonic Logging (CSL) testing. Since the late 1990's over 50,000,000 linear feet of Sonitec has been used on over 400+ projects around the world. A cost-effective and lightweight solution; Sonitec can reduce the labor needed for installation. The lightweight nature is also safer and easier to handle on the jobsite. The Sonitec tubes are made in America and inventory is readily available to ship where you need it, when you need it.



$\frac{1}{3}$ the weight



$\frac{1}{3}$ the manpower

COMPARED TO TRADITIONAL SCHEDULE 40 MATERIAL

Product Features

Sonitec are black steel tubes available with an enlarged end in a bell mouth shape. This Push-Fit method makes the connection between two tubes an easy process and minimizes labor costs.

Smart cold-forged manufacturing process:

- Rigid and robust tube connections, high resistance to shocks.
- Fully automated deformation with more precision and consistency.

Better sealing methods:

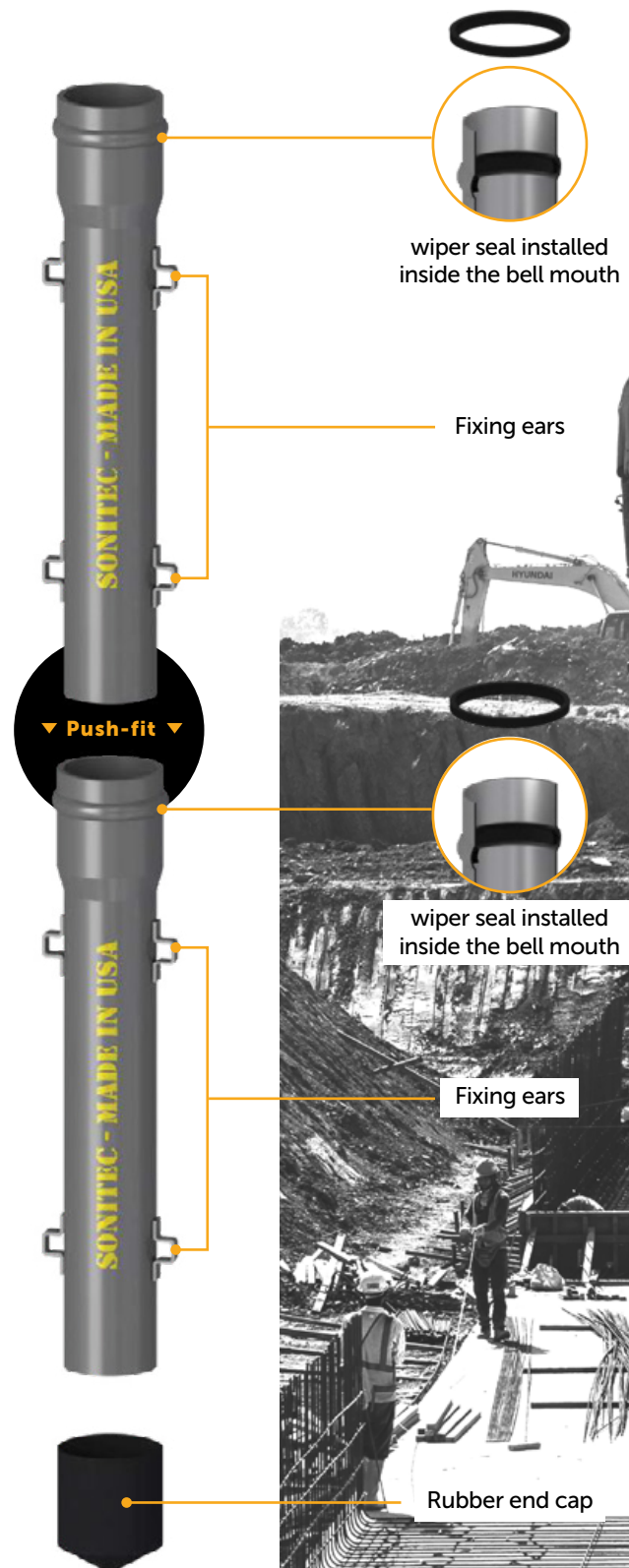
- Water and concrete tightness is maintained by a wiper seal.
- Wiper seal is installed inside the pipe and fully protected from UV and mishandling.
- Standard wiper seal is easy to replace (not glued).

Clear engagement for tube to tube connection:

- Fixing ears are used as physical and visual stopper.
- No sharp edges and much safer for the job operations.

Better end cap solution:

- Rubber end cap, designed with metallic insert, makes for quick and easy push-fit installation.
- High resistance to extreme temperature and UV.
- The cap performance is equivalent to tube to tube connections.



Product Specification and Performance



Sonitec by Dextra America

Product Name	Sonitec
Steel Pipe Source	Melted and manufactured in the USA Compliant with "Buy America Act" and "Buy American Act"
Nominal Diameter (in)	1.902
Wall Thickness (in)	0.049
Standard Length (ft)	20
Weight (lbs/ft)	1.021
Fixing ear loading capacity (lbs)	100
Outer Pressure Capacity (psi) Hold for 1 minute	725



Quality Control

- Compliant with ASTM D6760 – Standard Test Method for Integrity Testing of Concrete Deep Foundations by Ultrasonic Crosshole Testing.
- System is tested and qualified in USA, by pressure test of 725 psi for 1 minute.

Recommendation for Storage

Sonitec tubes are made of black steel, if subjected to certain weather conditions discoloration may occur. To avoid this issue, please note the following instructions:

- Cover steel tubes or keep them in a covered area or closed container.
- Avoid exposing them to environmental conditions (humidity, rain, heat ...).

Assembly Instructions

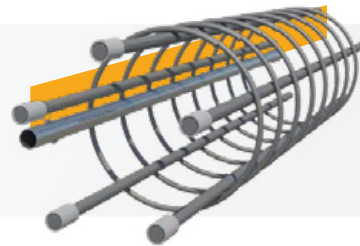
01



- ◀ Install the bottom cap onto the end of the lower tube.

Install the tube in the rebar cage and loosely fix it to the reinforcement by tying steel wire through the fixing ears. ▶

02



- ◀ Proceed with first cage installation. Prepare the next section of the tube in the upper cage and fix it similarly as described in step 2.
- ◀ Lift and approach the second cage. Connect reinforcement.

03



Simply push the upper tube section into the lower tube. Secure full engagement until it reaches the stop-end. ▶

04



05



- ◀ Secure the assembly by connecting tightly the ears of both tubes with steel wires.

Repeat the process for all other tubes and cage segments. ▶

06



Available Coast to Coast



Foundation Technologies, Inc.

Established in 1986, Foundation Technologies, Inc. is a respected leader in the foundation industry and the pioneer of the rebar centralizer market. Foundation Technologies provides a wide range of products and services to construction professionals in the Federal, heavy civil, industrial, commercial and residential markets. Inside our 94,000-square-foot distribution facility, a dedicated team of professionals provides effective product solutions for a time-sensitive market. Foundation Technologies is proud to be owned and operated by a disabled veteran, certifying our company as a Service-Disabled Veteran Owned Small Business (SDVOSB).

Dextra America

Backed by over 35 years of experience, Dextra America is the manufacturer of Sonitec, the only steel pipe system specifically designed for Crosshole Sonic Logging. Sonitec has been used on some of the largest projects by the world's top contractors including the Dubai International Airport project, the Paris Tour Duo mixed-development towers and the Perth City Rail Link in Perth, Australia. Over 15 million meters (or 50 million feet) of Sonitec CSL tube technology has been used on projects all over the World!

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