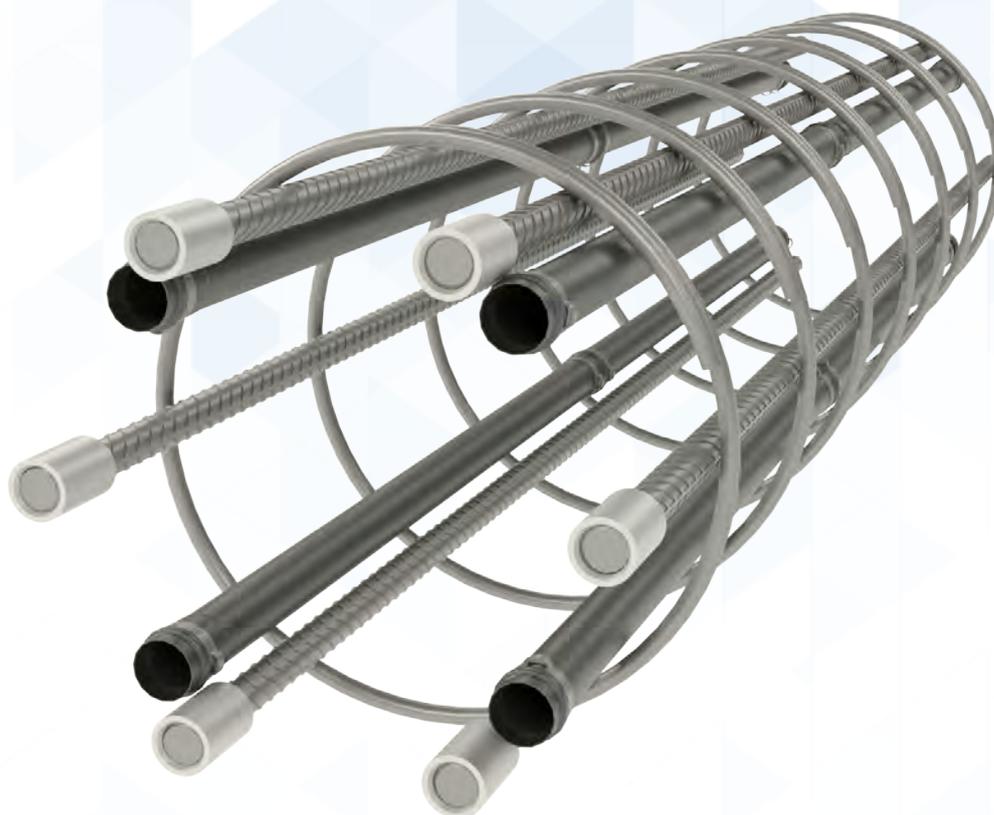


SONITEC

The most effective solution for integrity checking
of concrete piles and deep foundation



Dextra

WHAT IS CROSSHOLE SONIC LOGGING ?

Definition

Crosshole Sonic Logging (CSL)

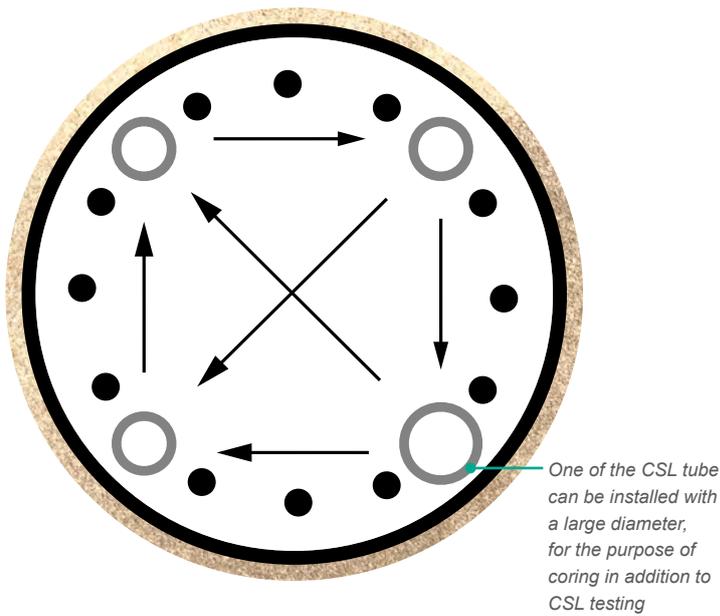
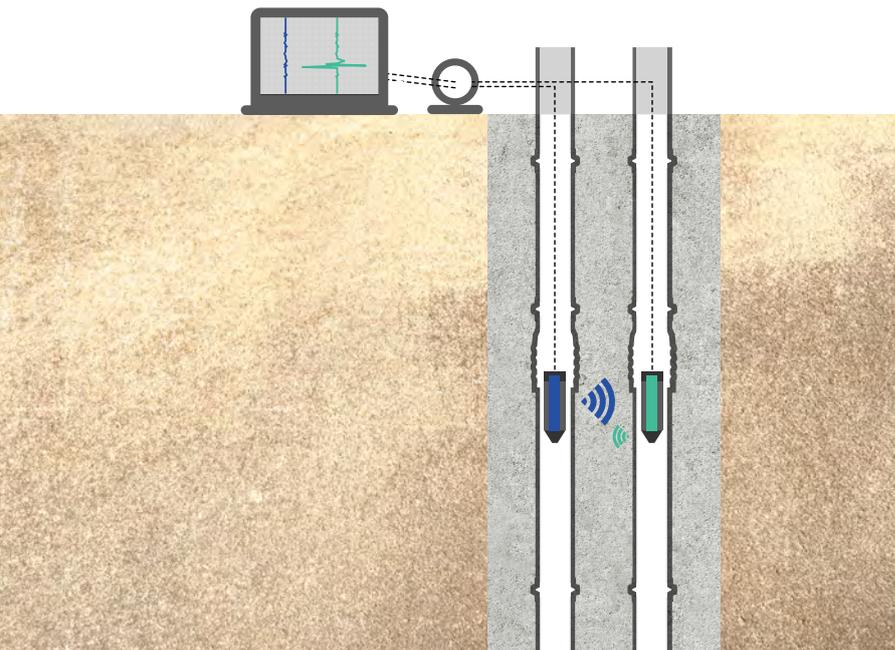
is an accurate method to determine the structural integrity and homogeneity of concrete within diaphragm walls, bored piles, drilled shafts, barretes, concrete piles or augercast piles.

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

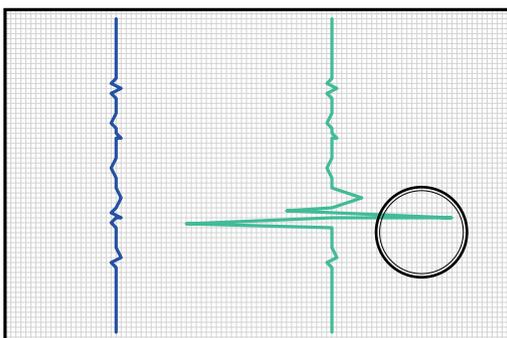
Method

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 1000 to 1400 mm)



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

About Sonitec

The most effective solution for drilled shafts integrity check

Product features

Sonitec is a thin black steel tube used for the crosshole sonic logging test of concrete piles. It is available in various diameters, featuring an enlarged end in a bell-mouth shape that facilitates an easy connection between two tubes, minimizing labor costs.

Product benefits

Smart manufacturing process:

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

Better sealing methods:

- The rubber gasket is replaced by a wiper seal.
- The wiper seal is installed inside the pipe and fully protected from UV and mishandling.
- Standard wiper seal, easy to replace (not glued).

Clear engagement for tube to tube connection:

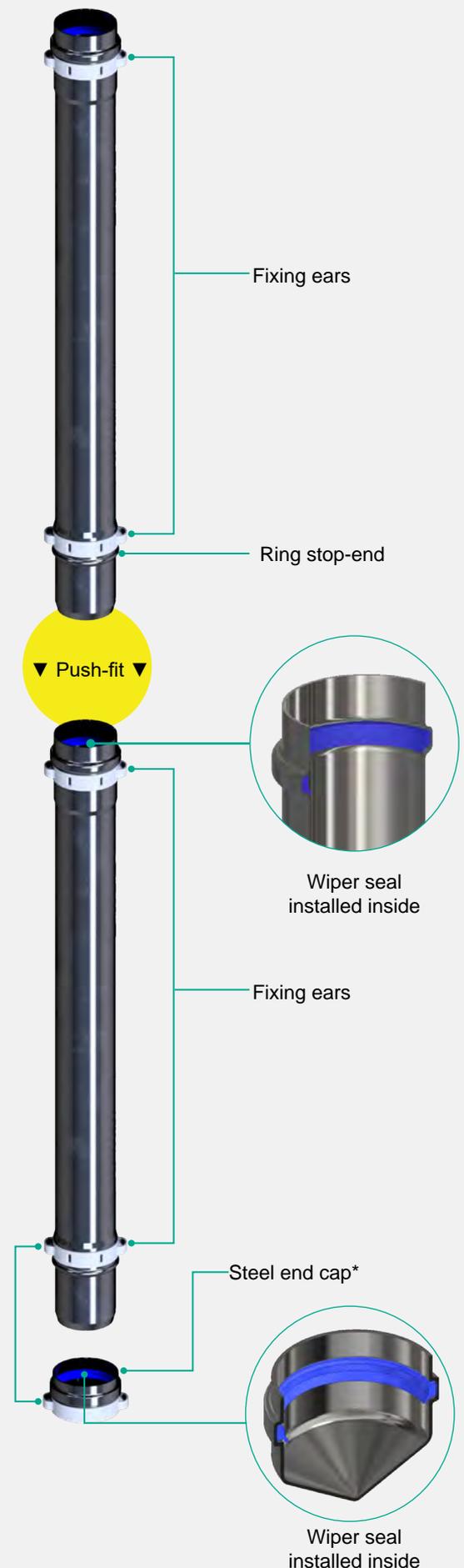
- A physical and visual stopper.
- No sharp edges and much safer for the job operations.

Better end cap solution:

- Metallic cap with a compact design, high resistance to extreme temperature and UV.
- The cap performance is equivalent to tube to tube connections with the use of the provided wiper seal.
- Rubber cap (without steel) still available as a top cap.



To reduce off-cuts, Sonitec is available in option as a 5.8m pipe with two bell-mouths.
A flexible solution to obtain two short Sonitec, each with a female side, with a simple cut.



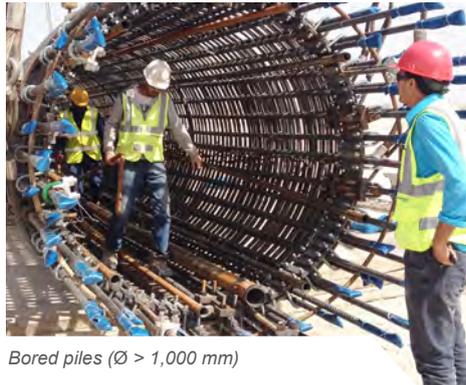
Rubber end cap

*Steel end cap + o-ring for Sonitec model ST50 and ST50-2
Rubber end cap + steel insert for Sonitec model ST48 and ST100

Foundation type



Bored piles (Ø < 1,000 mm)



Bored piles (Ø > 1,000 mm)



Diaphragm wall & barrettes

Product specifications & performance

Product Name	ST48	ST50	ST50-2mm	ST100
Nominal Diameter (mm)	48mm (2")	50mm (2")	50mm (2")	102mm (4")
Wall Thickness	0.8 mm	1.0 mm	2.0 mm	1.5 mm
Standard Length	5.80 m	5.80 m	5.80 m	5.80 m
Weight	5.4 kg	7.0 kg	13.7 kg	21.6 kg
Waterproofness (Filled with water)	144 m	240 m	385 m	96 m
Bell mouth pull out strength	8 kg	8 kg	8 kg	15 kg
Fixing ear loading capacity	150 kg	150 kg	150 kg	150 kg
End cap	Rubber 	Steel 	Steel 	Rubber 

Quality control

- Manufactured under Quality Management System - ISO 9001.
- Tested under supervision of Bureau Veritas & SGS.
- Compliant with ASTM D6760 – Standard Test Method for Integrity testing by ultrasonic crosshole testing.



Recommendation for storage

As 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 the steel tubes with tarpaulin or keep the steel tubes in a covered area or closed container.
- Avoid exposing them to environmental conditions such as humidity, rain, and heat.

Two types of loading method:

1. Maximum quantity of tubes
2. With wood spacer and slings



Assembly instructions

01



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

02



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

03

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.



04

Simply push the upper tube section into the lower tube.

Secure full engagement until it reaches the stop-end.



05

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



06

Repeat the process for all other tubes and cage segments.





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