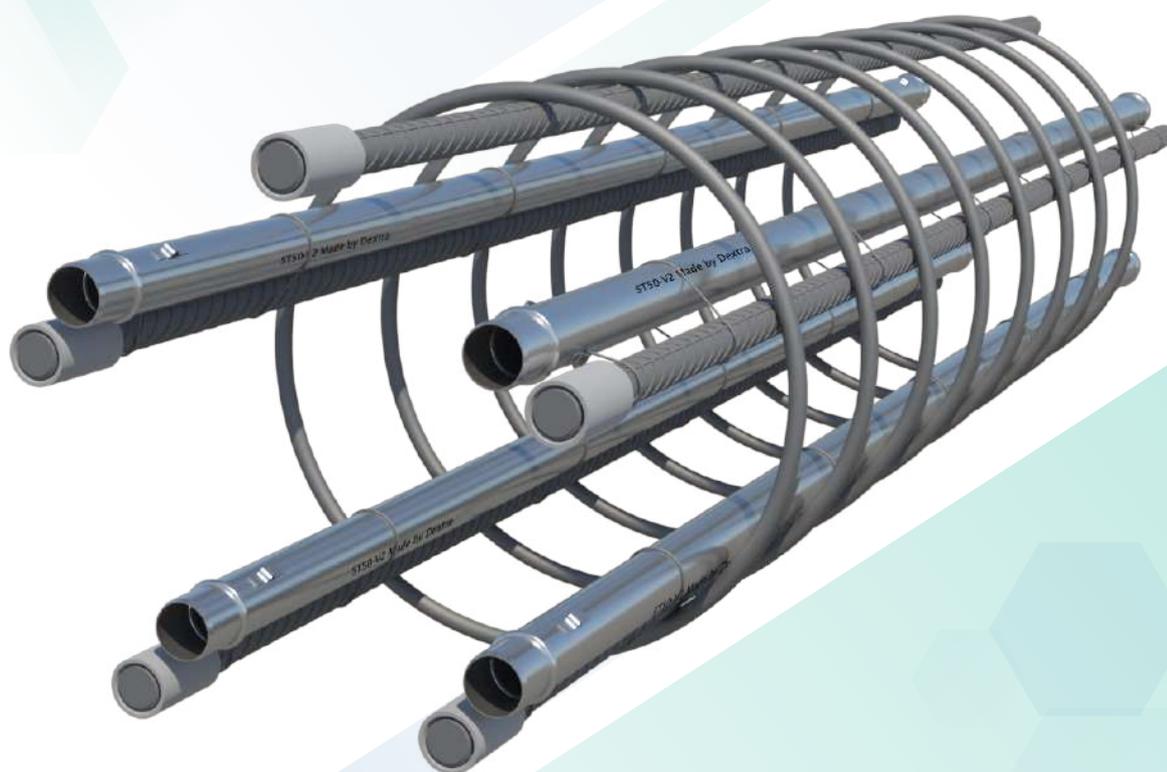


# SONITEC V2

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



**Dextra**

# WHAT IS CROSSHOLE SONIC LOGGING ?

## Definition

### Crosshole Sonic Logging (CSL)

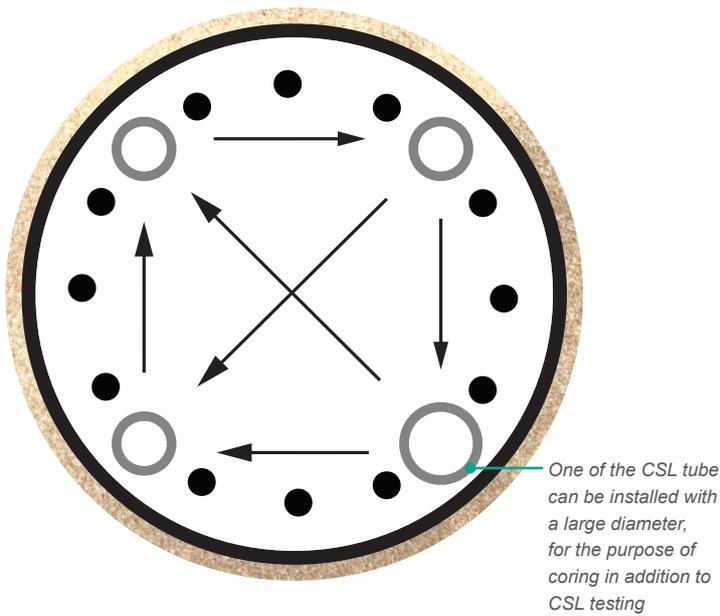
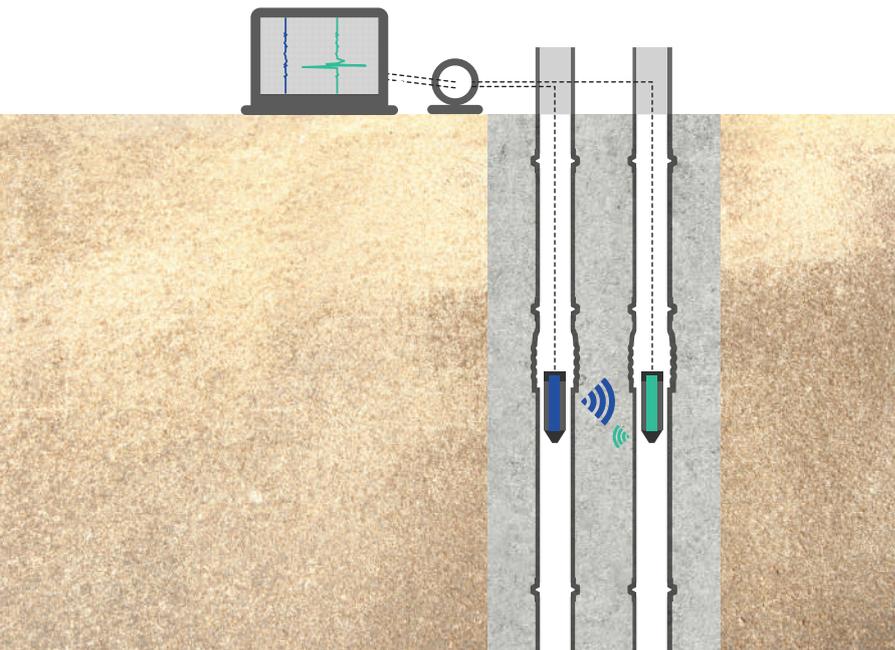
is an accurate method to determine the structural integrity and homogeneity of concrete within diaphragm walls, bored piles, drilled shafts, barretes, concrete piles or augercast piles.

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

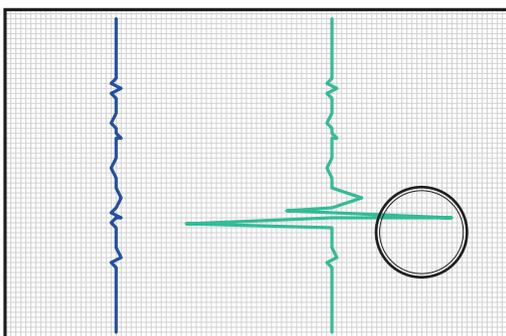
## Method

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 V2

The most effective solution for drilled shafts integrity check

### Product features

Sonitec are thin black steel tubes available in different diameters with an enlarged end in a bell mouth shape. This makes the connection between two tubes an easy process and minimises labour cost.

### 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 & 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 & 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.

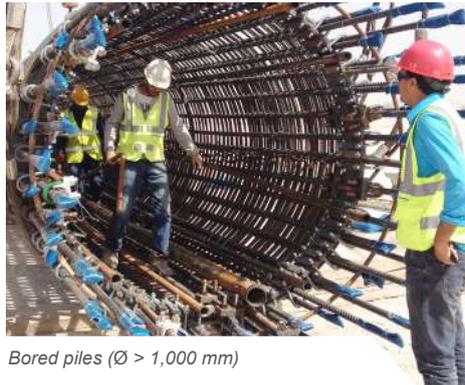


Rubber end cap



\*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 ( $\varnothing < 1,000$  mm)Bored piles ( $\varnothing > 1,000$  mm)

Diaphragm wall &amp; barrettes

## Product specifications & performance

Product Name	ST48	ST50	ST50-2mm	ST48-3.6mm	ST100
Nominal Diameter (mm)	48mm (2")	50mm (2")	50mm (2")	48mm (2")	102mm (4")
Wall Thickness	0.8 mm	1.0 mm	2.0 mm	3.6 mm	1.5 mm
Standard Length	5.80 m	5.80 m	5.80 m	5.80 m	5.80 m
Weight	5.4 kg	7.0 kg	13.7 kg	22.3 kg	21.6 kg
Waterproofness (Filled with water)	144 m	240 m	385 m	288 m	96 m
Bell mouth pull out strength	8 kg	8 kg	8 kg	8 kg	15 kg
Fixing ear loading capacity	150 kg	150 kg	150 kg	150 kg	150 kg
	Rubber	Steel	Steel	Rubber	Rubber
End cap					

## 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 (humidity, rain, heat ...).

Two types of loading method:

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



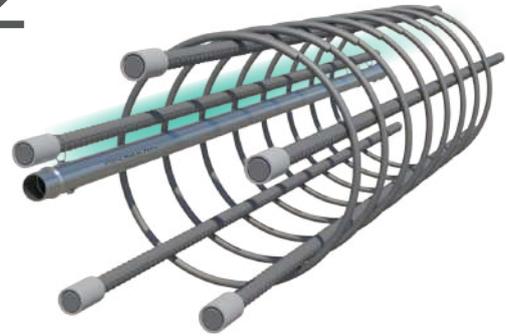
## Assembly instructions

01



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

02



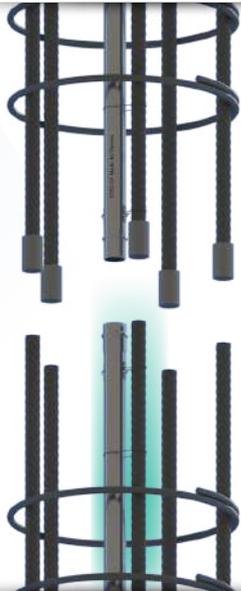
Install the tube in the rebar cage and loosely fix it to the reinforcement by tying steel wire through the fixing ears.

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.

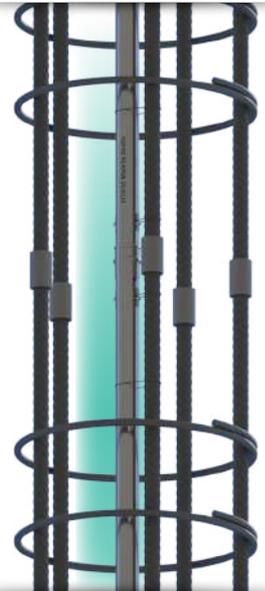
Lift and approach the second cage. Connect reinforcement.



04

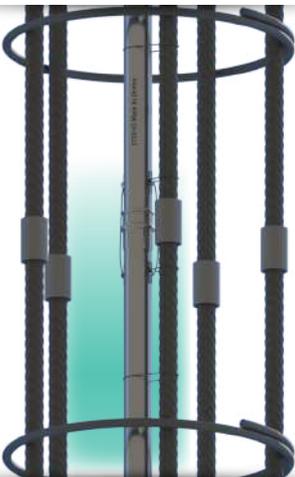
Simply push the upper tube section into the lower tube.

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.



Learn more on  
[www.dextragroup.com/sonitec](http://www.dextragroup.com/sonitec)





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