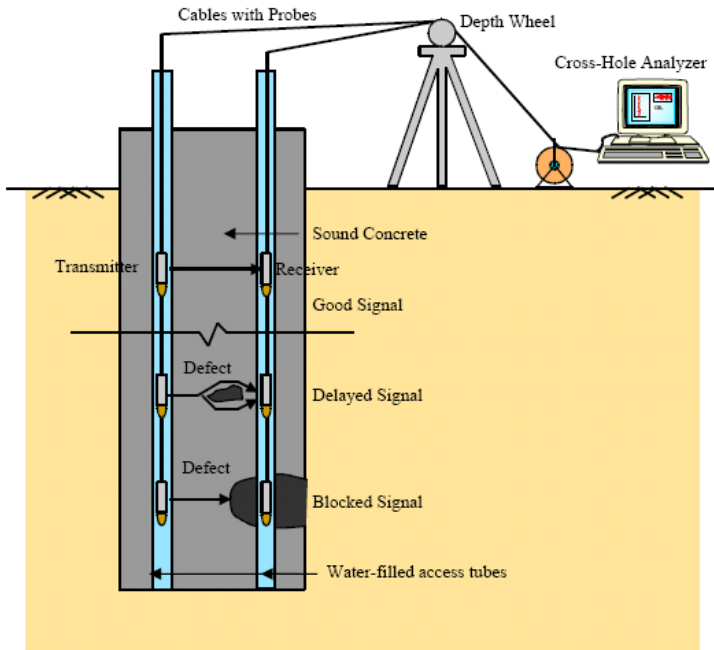


## Schematic of Crosshole Sonic Logging



Crosshole sonic logging test is mainly used to check the integrity and homogeneity of the concrete in deep foundations and is also used for diaphragm wall, barrettes and dams. This test provides the propagation time and the relative energy of an ultrasonic pulse between parallel access installed in the pile or structure which is used to determine the quality of concrete and the poor zone of concrete.

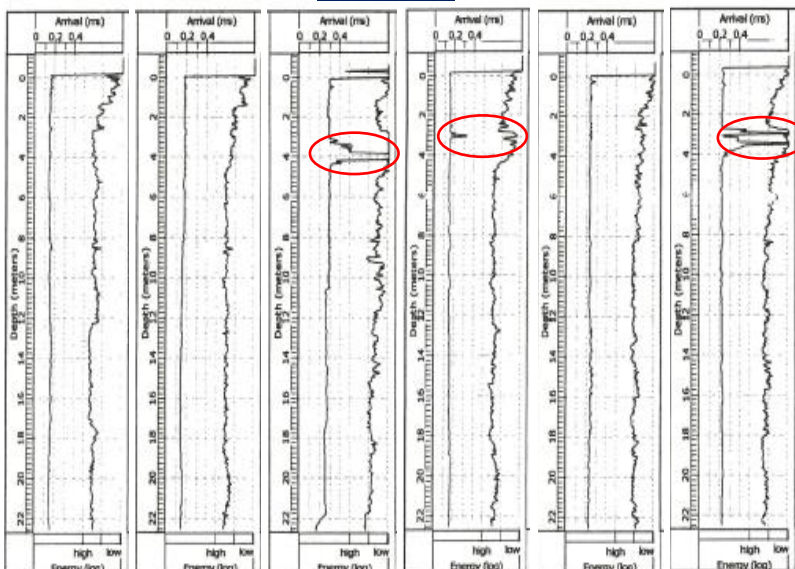
Crosshole sonic logging test is conducted in accordance with ASTM D6760. Two (2) watertight and free corrosion mild steel tubes with internal diameter ranging from 38 to 50 mm used as access ducts, transmitter and receiver probes, signal transmission cables and data acquisition system are required for this testing.

## Field Test



The two access ducts are installed parallel to each other with full-length in the shaft at the time of pile construction or cored after construction. Then clean water is poured into the access ducts until it reaches top level. The transmitter and receiver probes are lowered down carefully at steady manner until it reaches bottom of access ducts. Following that, these two probes are pulled up steadily by probe cables to the top of access ducts while the transmitter continuously emits and the receiver acquires the ultrasonic signals. Pulse arrival time and signal strength at receiver probe depends upon properties concrete.

## Results



The depth-arrival time graph is generated by specific computer program. The integrity and homogeneity of the concrete is determined by pulse time arrival with correspondence depth.