



APPLICATION NOTE

CROSS-HOLE SONIC LOGGING TEST

**Aadco Testing &
Research Laboratory
(P) Ltd**



**Client : NCRTC
Contractor: APCO Infratech**

**Project Name: RRTS Project
Service Provider : Aadco Testing &
Research Laboratory (P) Ltd**

Requirement : To check the homogeneity of the concrete for deep foundation of piles as per ASTM D6760-16 standard.

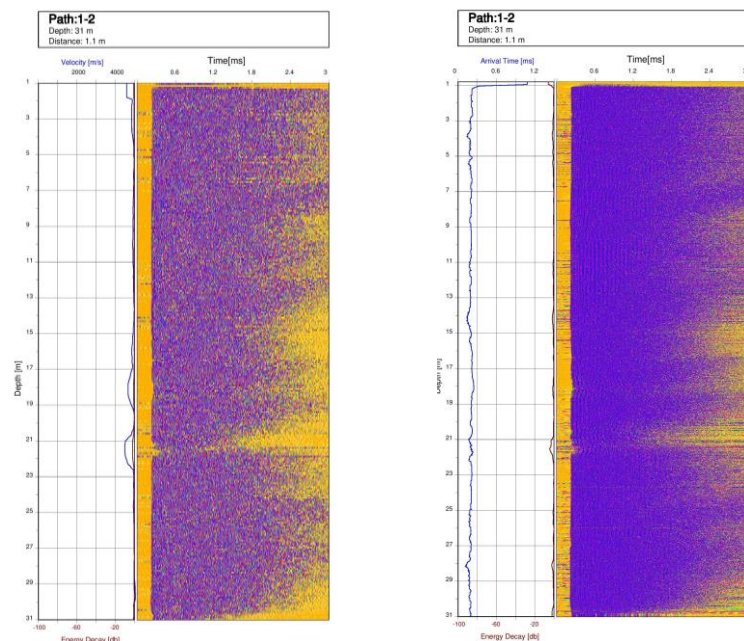
Aadco performs Pile Integrity Testing for APCO Infratech for their ongoing Delhi-Meerut RRTS project of NCRTC as per the NCRTC guideline (25 % piles- Cross-hole ultrasonic test & 75% piles- Pile Integrity Test) to check the homogeneity of the concrete that is going to be used in pile foundation.

Solution : Aadco uses All In One KIT MCHA Ultrasonic Cross-hole Testing Equipment by Stanlay as per ASTM D6760-16 standard.

The Cross-hole Sonic Logging method is an ultrasonic test that involves measuring the propagation time of ultrasonic signals between two probes in vertical tube in a shaft. It is a NDT method which consists of ultrasonic signal transmission through the pile between two similar water filled tubes. The difference in signal coming time permits one to calculate and identify areas of low compactness of concrete. For the case of good concrete, pulse velocity is on the order of 4000 m/sec, depending on its ingredients. Concrete consists of soil, gravel, betonies or honeycombing which causes lower propagation velocity so that the presence of these irregularities is immediately observable.

The total depth of the piles was 31 meters & they use All In One KIT MCHA Ultrasonic Cross-hole Testing equipment which has 60-meter cable along with 2 probes (1 transmitter & 1 receiver) for this test.

The output graph was displayed on the datalogger screen which had pre-installed software to measure the output signal & present it in formatted graphical way.





Inserting two probes (1 Tx & 1 Rx) through the pile between two similar water filled tubes.



All In One KIT MCHA Ultrasonic Cross-hole Testing Equipment



Probes under water filled tubes, total depth of one tube is 31m.