News Releases

January 14, 2004

COMMERCIALIZATION OF THICNESS MEASUREMENT OF CONCRETE SLAB BY IMPACT-ELASTIC WAVES

TAIHEIYO CEMENT CORPORATION (TAIHEIYO) has developed a thickness measurement system of concrete slab by impact-elastic wave method. TAIHEIYO CEMENT GROUP shall expand the concrete inspection and diagnosis business utilizing this system as one of the Concrete Solution System.

1. Main features of this System

Until now, an ultrasonic or radar as non-destructive testing is used in order to measure the thickness of concrete slab. However, it has some negative points that influence over the reflection of concrete aggregates or reinforcements is strong and it takes time to achieve the measurement.

On the other hand, this system has overcome the above mentioned negative points by increasing the input power to concrete with the help of impact-elastic waves, and this resulted in stabilizing the accuracy of the measurements. And thus, TAIHEIYO has developed its own analysis system, and it automatically perceives and estimates the sound velocity propagating in the concrete. And this contributes to the measurement efficiency and accuracy. Furthermore, this system has following advantages;

(1) Easy to carry and measure by single person.
(2) Applicable for measurement from the under surface of slab.
(3) Easy operation and external power supply is not necessary.

2. Outline of development

The sound insulation ability of concrete wall is mainly depends on its thickness, therefore, the recent condominium sale is more characterized by the thickness of concrete slabs or walls. The condominium building diagnosis business is increasing, since the flaw warranty is reinforced by "Law concerning the Promotion of Securing Housing Quality" enforced by government of Japan in April 2000. Especially, in order to examine the designed figure of concrete thickness in response to many complaints received on the sound from the next room or the up-and-down room, the new technology developed for measuring the thickness of concrete slabs or walls by non-destructive method have been expected.

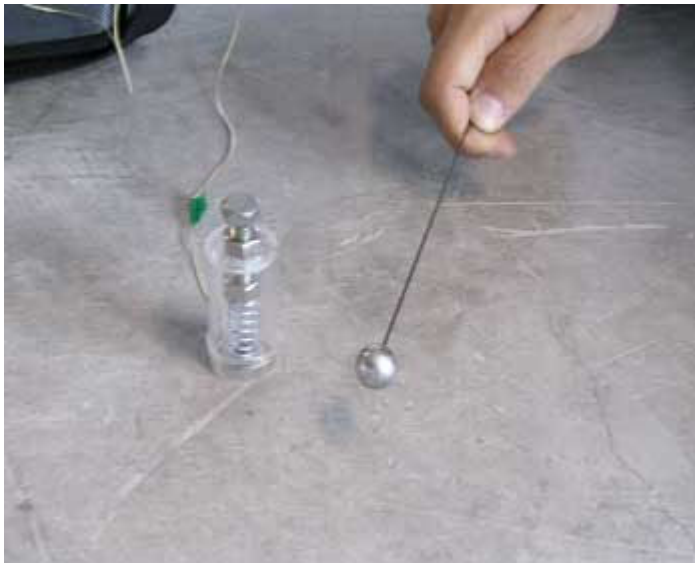
Hence, TAIHEIYO has developed this system, combining TAIHEIYO's own non-destructive testing technology, such as impact-elastic wave or acoustic emission methods(*), and the testing & diagnosis expertise, including seismic evaluation, handled by Creo Corporation (President; Tadaharu KAMEI, Location; 1-28-23, Hongo, Bunkyo-ku, Tokyo, Japan) of TAIHEIYO GROUP.

3. Future prospects

TAIHEIYO GROUP shall expand the concrete structure survey and diagnosis business through the network of Creo Corporation specialized in building survey and marketing activities.

(*)acoustic emission methods; elastic wave emitted from material-destruction or impairment

Measurement System



Sensor and steel ball for impact-elastic wave input