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Estimation of Slab Depth, Column Size and Rebar Location of Concrete Specimen Using Impact Echo Method

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Abstract : In this study, an experimental research for estimation of slab depth, column size and location of rebar of concrete specimen is conducted using the Impact Echo Method (IE) based on stress wave among non-destructive test methods. Estimation of slab depth had total length of 1800×300 and 6 different depths including 150 mm, 180 mm, 210 mm, 240 mm, 270 mm and 300 mm. The concrete column specimen was manufactured by differentiating the size into 300×300×300 mm, 400×400×400 mm and 500×500×500 mm. In case of the specimen for estimation of rebar, rebar of □22 mm was used in a specimen of 300×370×200 and arranged at 130 mm and 150 mm from the top to the rebar top. As a result of error rate of slab depth was overall mean of 3.1%. Error rate of column size was overall mean of 1.7%. Mean error rate of rebar location was 1.72% for top, 1.19% for bottom and 1.5% for overall mean showing relative accuracy.

Keywords : impact echo method, estimation, slab depth, column size, rebar location, concrete
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