

17. Research on Controlling Method of Water Content per Unit Volume of Concrete - Development of Highly Accurate Estimation Method using Air Meter -

Takanori Okihashi, Takashi Uenishi, Masanori Kono, Takuo Kotake

Control of water content per unit volume of concrete is needed to stabilize the production quality of concrete. Our company has controlled the quality highly accurately by using an original "high frequency heating dry" method. However, the method has problems such as taking time to measure. Moreover, the current air meter method has a problem in estimation accuracy, although it is easy and fast. We have worked to improve the accuracy of the air meter method by adding some measurement procedures and a newly estimated equation. The estimated equation can correct sampling errors during tests, and the water content per unit volume of concrete can be estimated even for concretes of mix proportions different from the specified mix proportion. This method was confirmed to be capable of estimating the water content per unit volume of concrete at higher accuracy than the current air meter method, from the results of both laboratory experiments and tests conducted at a building site

Key words : concrete, quality control, water content per unit volume of concrete, air meter method, coarse aggregate content, high frequency heating and drying