

Effects of Penetrative Conditions of Water for Curing on The Degree of Hydration and Content of Non-evaporable Water of Hardened Cement Paste

by

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Abstract

Effects of penetrative conditions of water for curing on properties of hardened cement paste have been investigated. In a large specimen with low w/c, normal water curing is not sufficient to complete hydration throughout the entire specimen. Thus, curing conditions have a large influence on the degree of hydration and content of non-evaporable water of the parts of the specimen located at different distances from the curing position. Therefore, different types of curing were used to investigate the properties at any layers of the specimen. The curing with water containing an AE admixture of low surface tension energy (AE water curing) and the curing with water under high pressure (10 MPa water curing) were observed to increase the degree of hydration, the content of non-evaporable water and the strength of the specimen. Furthermore, the decrease in the degree of self-desiccation in the specimen with low water-cement ratio was also observed. Against

Keywords: water penetration, hydration, non-evaporable water, self-desiccation, 10 MPa water curing, AE water curing

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