

Effect of High Reactivity Metakaolin on Gas Permeability of High Performance Concrete

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ABSTRACT

The ability of the concrete to resist the ingress of exterior deleterious agents is a very important indicator of the durability of concrete. The ease or difficulty with which gas can migrate through the hardened concrete mass is referred as gas permeability. In this paper, the permeability of two classes of different High Performance Concrete (HPC) containing High Reactivity metakaolin (HRM) to oxygen permeation is determined by Cembureau method. The experimental results show that adding HRM by 5%, 10% and 15% decrease gas permeability of two classes of HPC ($W/b=0.38$, $W/b=0.26$) up to 2, 3 and 6 times respectively, to achieve a more durable concrete.

Keywords: durability, gas permeability, High Performance Concrete (HPC), High Reactivity Metakaolin (HRM)

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