

PROCEEDINGS

Reaction Characteristics of Low-Lime Calcium Silicate Cement Power in OPC Pastes

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ABSTRACT

This study summarized a part of the research conducted by Kim et al. [1]. The utilization of low-lime calcium silicate cement presents a promising avenue for reducing CO₂ emissions in construction fields. Ordinary Portland cement pastes with the type of calcium silicate cement powder were fabricated and solidified under carbonation curing conditions. The physicochemical characteristics of the pastes were examined via variable tests including initial setting and flow characteristics, compressive strength and so on. Limestone and silica fume were employed for the synthesis of the calcium silicate cement used here. The content of calcium silicate cement powder added to Ordinary Portland cement increased up to 50% by the weight of the Portland cement. The test results showed that the initial physical properties of the pastes with the calcium silicate powder were governed by the reaction of Ordinary Portland cement, and the addition of the powder improved the compressive strength. The details of the main findings will be presented.

KEYWORDS

Low-lime calcium silicate cement; carbonation curing; physical properties; compressive strength

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References

1. Kim, G. M., Adem, J. K., Park, S. (2024). Reaction and microstructural characteristics of OPC pastes with low-lime calcium silicate cements under carbonation curing. *Construction and Building Materials*, 415, 134993.



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