Performance of Carbonated Concrete

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Abstract

Ordinary Portland cement (OPC)-based concrete gains its strength through the hydration process. However a new type of cement developed by Solidia Technologies gains its strength through the carbonation process. This is a low-lime containing calcium silicate cement (CSC) that emits 30% less CO₂ during production process compared to OPC. CSC can consume up to 300 kg of CO₂ per ton of cement during the curing process of the concrete resulting in up to 70% reduction in CO₂ emission. CSC is commercially known as Solidia Cement™ (SC). The reaction products of the cement are CaCO₃ and SiO₂ and do not contain any hydrating phase. The cement matrix is very stable and durable.