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Review of Sustainability in Self Compacting Concrete: The Use of Waste and Mineral Additives as Supplementary Cementitious Material and Aggregate.

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ABSTRACT

Concrete is one of the commonly used construction materials, but there is a need to develop a new and sustainable technology to make concrete more affordable. With the advancement in technology, concrete was no longer seen as a three entity (binder, aggregate, and water). The unique workability properties of SCC make it unique in the concrete industry. This review assessed the materials, strength, rheological properties of agricultural waste, industrial waste and mineral additives in SCC production. The effect of the utilization of these additives and replacements on structural, mechanical and rheological properties of SCC was espoused. The review revealed that

perties of SCC. Additionally, the use of agricultural waste improves the rheological properties of fresh concrete. The utilization of expansive material should be discouraged in SCC production. The review revealed that SCC developments ensure a good balance between deformability and stability. It was

therefore recommended that SCC should be utilized in pavement construction, particularly when high axle load is expected.

Keywords: Self-compacting concrete, Mineral additives, Agricultural waste, Structural properties, Rheology.