The Effects of Waste Marble Powder on Sustainable Concrete

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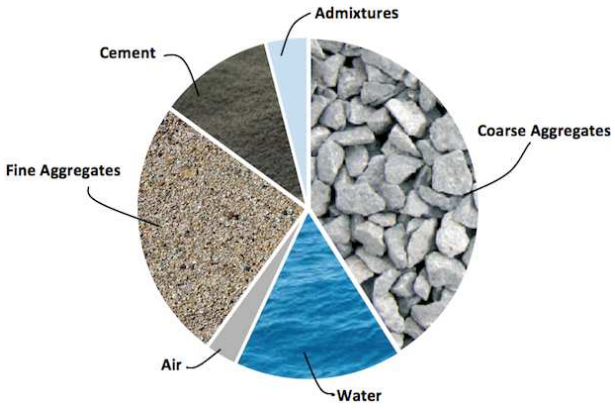

Conventional concrete mix

Sustainability has been growing consistently more popular in construction, with projects introducing innovative ideas to build greener every year. One material that has not experienced many innovations since emerging in building use is concrete. The reason behind this could be the chemical process of curing concrete being unique compared to most materials. While concrete can be broken down into some of its original components, water, cement, and admixtures used are not retainable. Aggregates recovered from recycling also experience a loss in strength. With admixtures being involved in most concrete mixes today, it is hypothesized that a sustainable additive could be discovered to use in concrete for strength retainage.

This research analyzes waste marble powder in concrete. Waste marble powder is a byproduct of marble processing and contains cement-like properties. Concrete batching involving the use of both marble powder and recycled aggregate is carried out to test compressive strength over seven-day periods. Findings of this process show that marble powder could be a promising component of concrete upon further research.