

The Effects of Recycled Additives in Concrete

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This research reviews the benefits of varying environmentally friendly, recycled additives to concrete cylinders for the purpose of performing standard compression and tensile tests. Because of the harmful greenhouse gases released upon concrete creation, the use of recycled aggregates and additives lessens potential negative environmental impacts. By combining cement, fine aggregate, coarse aggregate, and water, six concrete cylinders were created. Such cylinders are listed as follows, with names deriving from the recycled additive: Control, Nails, PVC, Brush Fibers, Fibers. Before testing, cylinders were cured in a water bath. Results from testing indicate that the control group performed the worst under compression testing with a value of 1211.2 psi, while the brush fibers performed the best with a value of 2097.7 psi. Results from split tensile testing indicates the control group performed the worst, with a strength of 125.3 Pa, while the brush fibers performed the best, with a value of 238.7 Pa. For future concrete mixtures seeking high compression and tensile strength values, it is suggested to use recycled brush fibers as an additive.