

Abstract

Three types of fine aggregates are investigated for making concrete, namely sand for normal concrete, granite and laterite fines. The properties considered are compressive and tensile strengths. Three mix proportions of cement, fine and coarse aggregates are used: I: 1.5:3, 1:2:4 and I :3:6 (cement: fine: coarse) with water/cement ratios of 0.62, 0.75 and 1.0 respectively. 100mm cubes and 150 x 300mm cylinders were prepared and cured in water at $21 \pm 1^\circ \text{C}$. The specimens were tested for each mix at curing ages of 7, 14, 21, and 28 days. The results showed that concrete containing granite fines has the highest strength values both in compression and tension while concrete made with laterite fines has the lowest strength.

For all the samples the strength characteristics decreased with increase in aggregate/cement ratio but increased with age irrespective of type of fine aggregate and mix proportion. Generally, the tensile strength was found to vary from 10 -12% of the compressive strength values for 1:1.5:3 and 1:2:4 mixes and it was about 15% for I :3:6 mix.