## Concrete the greatest source of depletion (A step towards economical and sustainable construction)

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## Abstract

Utilization of natural construction material is increasing day by day throughout the globe due to the bulk use of concrete as a material of choice for mankind. Concrete is composed of materials procured from natural quarries directly or indirectly which is depleting natural material deposits. Concrete comprises of 60% to 80% of coarse aggregate normally obtained from crushing of rocks or screened from rivers which is direct depletion of rock deposits and is lowering beds of the rivers. Cement by self is produced from limestone, which is again a source of natural material utilization and threatening the environment by releasing carbon dioxide. Use of recycled coarse aggregate (RCA) in the production of concrete is a way towards sustainable development and green concrete production. Use of 100 percent RCA produces comparatively economical and environment friendly concrete. Similarly cement utilization is reduced by use of by-products producing value added concrete. This practice gives a multi directional perspectives in saving the natural resources and producing a durable, environment friendly, sustainable and economical concrete. Four different mixes i.e. RAC-SF0, RAC-SF5, RAC-SF10 and RAC-SF20 were prepared with 0%, 5%, 10% and 20% of silica fume with partial replacement of cement by weight and 100% of recycled aggregate concrete. Concrete was tested for compressive strength which shows that the strength at higher percentage of replacement decreases at the early age of concrete while it shows a significant increases in the strength at later stages which depicts slow pozollonic reaction of silica fume.