

## Physical and mechanical properties of mortar and concrete composites with sheep fiber

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Nowadays, sheep wool fiber considered as solid waste and useless material in many countries around the world. In our research, we tried to make Saudi Sheep Wool Fiber (SSWF) valuable material in civil engineering field by adding specific percentage of SSWF to normal concrete. During our study, we focused on using SSWF in as the following mixes: (0, 0.5, 1, 1.5, 2, 3 and 4) % with respect to the total weight of ordinary Portland cement OPC used. The main tests we have performed contain characteristics of both fresh and hardened behaviors of the new material we have. Specifically, the experiments that have been done in mechanical and chemical properties that cover compressive strength, tensile strength, Scanning Electron Microscope (SEM) and X-ray Diffraction (XRD) analysis. The results illustrate that SSWF did not enhance the original concrete characteristics, comprehensively, when SSWF amount increased, the compression strength, tensile strength and workability are deteriorating progressively compared to referenced data.

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