Properties of cement mortar containing NaOH-treated Crumb rubber as fine aggregate replacement

ABSTRACT

In this study, crumb rubber was used to partially replaced fine aggregate in mortar mixture by 5, 10, 15, and 20 volume percentage (vol%) with untreated and NaOH-treated crumb rubber. Thus, the total number of mixtures was 9. The mortars were tested for its flowability, compressive strength, flexural strength and density. Based on the results, increasing the replacement percentage of fine aggregate by crumb rubber reduced the compressive strength, flexural strength and density of rubberized mortar but increased the flowability. Meanwhile, the treatment of crumb rubber using NaOH solution improved the flowability, compressive strength and flexural strength. The treatment has minor effect on the hardened density of the rubberized mortar.