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## The Effect of Steel and Polypropylene Fibers on Properties of High Strength Concrete

This research work investigates the effect of the addition of steel and polypropylene fibers on the mechanical properties of high-strength concrete (HSC). Straight steel fibers (ST) with a 63mm length and 0.9 mm diameter, and Polypropylene fibers (PP) with a 12-mm length and 0.018 mm diameter were used. Each type used separate and three mixtures were produced with the combination of steel and polypropylene fibers at (0.25% ST +0.75PP), (0. 5% ST +0. 5 PP) and (0.75% ST +0.25 PP). Slump, Compressive strength, split tensile strength, and flexural strength tests were performed and results were analyzed to associate with above fiber combinations. Based on experimental studies, the paper identifies fiber combinations that demonstrate maximum compressive, split tensile and flexural strength and flexural strength is presented. Among different combinations of steel and polypropylene fibers investigated, the best performance was attained by a mixture that contained 0.75% ST and 0.25% PP. Finally, the results show that introducing fibers to concrete resulted in increase in Compressive strength, split tensile strength and flexural strength and flexural strength, and flexural strength and flexural strength, and flexural strength and epending on the fibers ratio used, compared to the mixture of plain concrete.