

## The Possibility of Enhancing Some Properties of Self-Compacting Concrete by Adding Waste Plastic Fibers”

Abdulkader Ismail Al-Hadithi and Nahla Naji Hilal

An attempt was carried out to develop some properties of self-compacted concrete (SCC) by adding waste plastic fibers (WPF) resulting from cutting beverage bottles. Many tests were conducted to investigate the effect of adding WPF on the fresh properties, whereas other tests were applied on that kind of concrete to study the effect of this type of waste on hardened properties. For this reason, different self-compacting concrete mixtures were designed at constant water-to-binder ratio of 0.35 and 490 kg/m<sup>3</sup> of binder content. The class F fly ash was replaced with cement as 25% by weight. The eighth designated plastic fiber contents of 0%,0.25%,0.5%,0.75%,1%,1.25%,1.5%,1.75% and 2% by volume. The workability properties of self-compacting concrete mixtures were performed to slump flow diameter, T<sub>50</sub> slump flow simultaneously, V-funnel flow at the same time, and L-box height ratio. The 7, 14 and 28-day compressive strengths of self-compacting concretes were also measured. Moreover, the 7, 14 and 28-day flexural strengths of concretes were also measured. The test results showed that the plastic fibers have adverse effect on the fresh properties of self-compacting concrete and improvement by hardened properties.