Relation between rheological and mechanical properties on behaviour of self-compacting concrete (SCC) containing recycled plastic fibres: a review

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Plastic has become one of the most consumed materials in daily use worldwide, and its consumption is growing increasingly because of its low density, strength, low cost, formability and slow decomposition. However; the usage of plastic bottles is severe threat to environment in the form of plastic wastes. The rapid growth of PW is inviting attention for recycling and reusing in construction applications, which in turns to reduce the hazardous impact on environment. SCC is an influential innovation in concrete technology and overcome the application of normal concrete due to many attractive characteristics. Recently, the reinforcement of recycled plastic (RP) in SCC has increased due to many characteristics such as high workability, high liquidity and uniformity between the components of the mixture. Thus, this review work highlights the analyses of effect of RP fibres on SCC properties. On the basis of reviewed work in this paper, it can be concluded that the reinforcement of RP fibres could improve the fresh properties of SCC, whereas, in the hardened properties; the RP could enhance hardened properties of SCC to certain level but still lower than the steel reinforcement. However, RP reinforcement could advantageous to many environmental impacts to the SCC