

Influence of Fly Ash and Polypropylene Fiber on Mechanical Properties of Alkali Activated Slag Concrete

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Fly ash and polypropylene fiber were introduced into alkali activated slag concrete (AASC) in order to reduce its cost and improve its toughness. Influence of fly ash and polypropylene fiber on mechanical properties of AASC was studied by means of compressive strength and split strength testes and impact resistance and tree point flexural experiments. The results show that fly ash obviously increased later-age compressive strength and split strength, impact resistance toughness and critical stress intensity factor of AASC, especially it enhanced impact resistance toughness nearly 6 times. But fly ash decreased fracture energy of AASC. Added different level polypropylene fiber, compressive strength, split strength, impact resistance toughness, fracture energy and critical stress intensity factor of AASC had different improvement. Compositely adding fly ash and polypropylene fiber, later-age compressive strength and split strength, impact resistance toughness and critical stress intensity factor of AASC improved, but fracture energy of AASC decreased.