

PROPERTIES OF LIGHTWEIGHT POLYMER CONCRETES WITH PUMICE

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Polymer matrix composites are popular in construction, aerospace and automotive industries due to their balanced properties [1]. Such composites offer manufacturing and handling ease as well as high strength.

We have studied physical and mechanical properties of lightweight polymer concrete containing pumice lightweight aggregate from Isparta with maximum particle size of 12 mm. The pumice aggregate has indented and half-open porous surface texture, thus it provides good bonding between the aggregate and binder paste. An epoxy resin based polymer [2, 3] is used as a binder. The aggregate amount varies from 10 to 20 wt. %. The concrete mixture is poured into molds with sizes of 10 x 10 x 10 cm. The molds contain steel rods with the diameters of 12 and 14 mm. After hardening, some steel rods are pulled out to determine their adhesive strength. We shall report also compressive strength and pertinent other values for our concretes.

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