عنوان مقاله:

Absorption Characteristics of Lightweight Concrete Containing Densified Polystyrene

محل انتشار:

ژورنال مهندسی عمران, دوره 3, شماره 8 (سال: 1396)

تعداد صفحات اصل مقاله: 16

نویسنده:

Bengin M.A Herki - *Faculty of Engineering, Soran University, Soran, Erbil, Kurdistan Region-Iraq*

خلاصه مقاله:

The environmental impacts of the construction industry can be minimised through using waste and recycled materials to replace natural resources. Results are presented of an experimental study concerning capillary transport of water in concrete incorporating densified expanded polystyrene (EPS) as a novel aggregate. A new environmentally friendly technique of densifying was used to improve the resistance to segregation of EPS beads in concrete. Twelve concrete mixes with three different water/cement ratios of 0.6, 0.8 and 1.0 with varying novel aggregate content ratios of 0, 30, 60 and 100% as partial replacement for natural aggregate by equivalent volume were prepared and tested. Total absorption, absorption by capillary action, and compressive strength was determined for the various concrete mixes at different curing times. The results indicated that there is an increase in total water absorption (WA) and capillary water absorption (CWA) and a decrease in compressive strength with increasing amounts of the novel aggregate in concrete. However, there is no significant difference between the CWA of control and concretes containing lower replacement level.

کلمات کلیدی:

Capillary Water Absorption; Compressive Strength; Concrete; Environment; Recycling; Waste Expanded Polystyrene