



Permeation properties of Concrete Added with a Petrochemical Industry Waste [

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text (article)

Analítica

The aim of this study is to evaluate the permeation properties of concrete added with a residue of a petrochemical industry located in Colombia, called catalytic cracking catalyst residue (FCC). Concrete samples with 10, 20 and 30 % of FCC incorporated as cement replacement were evaluated. As reference materials, concrete without addition and concrete added with 20 % of metakaolin (MK) were used. MK is a high performance pozzolan of chemical composition similar to the FCC. The properties studied, in addition to the compressive strength, were: water absorption by total immersion, porosity, surface absorption and capillary sorption. The results showed that the concrete added with FCC and MK had similar behavior, and were slightly higher than the control sample. The total absorption and porosity were below 5 % and 10 % respectively for all samples; this means that the incorporation of the addition reduces the permeability of concrete. In this sense, FCC is considered as a good alternative for producing more durable concrete, being the optimum percentage, 10 % cement replacement

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Baratz Innovación Documental

- Gran Vía, 59 28013 Madrid
- (+34) 91 456 03 60
- informa@baratz.es