

## **Influence of the calcined light loam on the properties of the hardened portland cement paste**

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### **Abstract**

© 2017, Fundatia Serban Solacolu. All rights reserved. The increasing worldwide production of Portland cement and demand to reduce CO<sub>2</sub> emissions has resulted in the need to increase the volume and varieties of supplementary cementitious materials. The most promising source of raw materials for the production of supplementary cementitious materials is ubiquitous and unlimited reserves of polymineral clays. In this article the effect of calcined loam clays depending on its concentration, calcination temperature (400-800°C), and specific surface area (250-800 m<sup>2</sup>/kg) on the properties of Portland cement is studied. It is found out the calcined loam clays increase the compressive strength of Portland cement hardened paste up to 35%, density up to 1.4%, water resistance from 0.92 to 0.93-0.97, and decrease the water adsorption from 1 to 0.9%. The reasonability of production and application of calcined loam clays, which aren't lower in efficiency than high-priced metakaolin, is stated.

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### **Keywords**

Calcination, Compressive strength, Density, Light loam, Metakaolin, Portland cement paste, Pozzolana

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