

Thermal, Chemical, and Mineralogical Properties of Soil Building Blocks Reinforced with Cement

Authors : Abdelmalek Ammari

Abstract : This paper represents an experimental study to determine the effect between thermal conductivity of Compressed Earth Block Stabilized (CEBs) by cement and the mineralogical and chemical analyses of soil, all the samples of CEB in the dry state and with different content of cement, the samples made by soil stabilized by Portland Cement. The soil used collected from fez city in Morocco. That determination of the thermal conductivity of CEBs plays an important role when considering its suitability for energy saving insulation. The measurement technique used to determine thermal conductivity is called hot ring method, the thermal conductivity of the tested samples is strongly affected by the quantity of the cement added. The soil of Fez, mainly composed of calcite, quartz, and dolomite, improved the behaviour of the material by the addition of cement. The findings suggest that to manufacture lightweight samples with high thermal insulation properties, it is advisable to use clays that contain quartz. . In addition, quartz has high thermal conductivity.

Keywords : compressed earth blocks, thermal conductivity, mineralogical, chemical, temperature

Conference Title : ICCEMC 2022 : International Conference on Civil Engineering Materials and Construction

Conference Location : Bangkok, Thailand

Conference Dates : February 07-08, 2022