

## **Physical and Chemical Properties of Bricks of Dervish Lodge from Karacahisar Castle, Turkey**

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The objective of this study is to analyze the similar and different properties of historic bricks used in Dervish Lodge of old Byzantium Castle Karacahisar Castle and accordingly to provide a reference for the bricks which will be used for the restoration here in the future. In order to perform this research, visual, physical and chemical analyses were carried out to the structural adobe bricks. According to analysis it was found that water absorption percentage by weight under atmospheric pressure of the historic bricks is between 13,9-26,6%, apparent porosity and water absorption by volume percent is between 26,3- 39,7 %. Apparent density of bricks is between 1,40-1,90 gr/cm<sup>3</sup> and real density is between 2,11-2,59 gr/cm<sup>3</sup>. According to the ignition loss analys, the CaCO<sub>3</sub> content percent is between 1,5-11,7 % and the bricks do not have good pozzolanic properties. As a conclusion, it was obvious that too many different types of bricks were used in construction of Dervish Lodge.

**Keywords.** Karacahisar Castle, Historic Brick, Physical Property, Pozzolanic activity, Ignition loss