

Experimental study of the thermo-mechanical behaviour of alumina-silicaterrefractory materials elaborated from Algerian kaolinitic clays

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Abstract : This work aims to study the thermomechanical behavior of an algerian kaolinitic clay. We started with the characterization of the raw material (DD1) of Djebel Debbagh -Guelma, in order to obtain a deep information about the microstructure of the material before and after a heat treatment, notably its crystallographic nature and the grains size and shape. The chemical composition and physical properties are reported. The mineralogical and chemical characteristics, based on X-ray diffraction (XRD) and scanning electron microscopy (SEM), were also carried out. The general behavior of the material with increasing temperature was analyzed through the various microstructure investigations and thermal analysis.

Keywords : Thermo-mechanical properties, aolinitic clays, elaborate