

Characterization and valuation of clays in the northeastern region of Morocco

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From a perspective of sustainable local development, this study focuses on the characterization of clay materials in the northeastern zone of Morocco. It is characterized by a high content in very diverse useful substances including clay deposits which have a wide range of composition and properties, origin of their multiple applications such as building, industrial and craft ceramics, pottery, pharmaceutical, cosmetic, chemical industries, oil purification, etc. This study has the advantage of contributing to the promotion of local building materials while improving the quality of artisanal ceramics produced. In this region, the terracotta clay-based are used mainly for the manufacture of traditional and modern building materials (bricks, tiles) and for making many pottery items.

Most Moroccan bentonite deposits are located in northeastern Morocco, in the Nador region. This natural resource is linked to the volcanic activities of Gorougou and its satellites. The present work focuses on the study of Trebia bentonite deposit located 18 km west of the city of Nador, on the western flank of the Tidiennit volcanic massif. Tight sampling was carried out. The raw samples were subjected to several analytical tests such as geotechnical identification tests, namely water content, organic matter, calcimetry and sand equivalent. The granular repair was carried out using the laser particle size. The extracted clay fraction was prepared as a powder and oriented aggregate and then analyzed with DRX. The clay processing was differentiated by comparison of the three routine test diffractograms (Normal, ethylene glycol, heating to 500°C). The analysis of the disoriented powder spectrum allowed the mineralogical characterization of the raw samples.

Keywords: Characterization, clay, DRX, Laser granulometry, northeast Morocco.