

**The potential of Libyan clay in ceramic industries****(in two regions: Ashkeda - Tarout)****Prof. Ayman Ali Goda****Professor of the Department of Ceramics - Faculty of Applied Arts - Helwan University**[aymanalygouda@gmail.com](mailto:aymanalygouda@gmail.com)**Prof. Fathy Abd-Elwahab****Professor of the Department of Ceramics - Faculty of Applied Arts - Helwan University**[dr.fathy.a.wahab@gmail.com](mailto:dr.fathy.a.wahab@gmail.com)**Assist. Lect. Ibrahim Salem Ismail****PhD researcher Assist.**[ibrahim.s.r.ismail@gmail.com](mailto:ibrahim.s.r.ismail@gmail.com)**Abstract:**

This study was conducted to identify the extent of the possibility of using clays in southern Libya (north and south of the Ashkeda region, which were coded in the research (A1, B2), and the Tarout region symbolized (C3), for various industrial ceramic uses, through the identification of the physical and chemical properties where it was conducted Laboratory tests (plasticity modulus analysis, water additive analysis of the used slurries, granular gradient analysis using laser, XRF LAB chemical analysis, TDA, DTA, X-ray analysis X-RAY, XRD), to identify the specifications of the clays used. Clays at different temperatures (950 ° C, 1000 ° C, 1050 ° C, 1100 ° C, 1150 ° C) to identify the appropriate degree of maturity by measuring the degree of (density, porosity and water absorption, total shrinkage, color gamut) by reaching the highest density ratio, the lowest porosity, absorption and the highest hardness strength.

It is evident through the laboratory tests and analyzes that were conducted for the three clays (A1, B2, C3), which showed that the regions of southern Libya had a variety of deposition environments, and thus the diversity of the mineral deposits present in them, which resulted in the difference in the type of clays obtained, which is that of the Tarout region (Kaolin type) It is considered one of the remaining primary clays (primary / residual), meaning that it was formed and settled in its original place, and it is due to the type of WSCH according to the Libyan specifications. It is classified from clays with medium thermal resistance and the temperature does not exceed (1400 ° C) and according to the optical parameter it is white in color) Tine of the Ashkeda region (a type of earth mud, which is mostly sedimentary mudflats formed in different geological eras, so that it became easy to classify it according to the geological components, and it is a non-thermal clay located between the thermal limits of (950 CO – 1000 CO).

**Keywords:**

Kaolin, ground mud, specific density, porosity, plasticity.