

RESUMEN N° 3 – PONENCIA

KAOLINITE CHARACTERIZATION TO MANUFACTURING THE CERAMIC ENAMEL

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Abstrat

This paper reflects the inicial studies about kaolinite, some other raw and sintec other material to make the ceramic enamels. This studies have been relevant because the tile surface earn some amont on the price of the final ceramic product. Some of the materials that increase the price are the pigments and/or corants, and the no contaminants of the raw materials that is used to manufacture the enamels are required; and engobes, the intermediate surface, that hide the real color of the tile and became better the interface between the tile and enamel/pigments and/or corants. This study have been done on one of the greatest Ceramic Sites in the Santa Gertrudes and Rio Claro Regions, and its important to know about the characteristics of this materials. The Stratigraphyc Situation, what is about the Great outcrops of Corumbataí Formation, whose material and clays are used to produce the tile by the dry process pression. The studied are done to characterization of kaolin used to done the enamel.

Key Words: Geology, Clay(kaolin), Ceramic, Enamel

The raw material to manufactory the tile

Its composed by the Corumbataí Formation, whose the raw material is about some red clay, with great quantity of illite mineral. There are greats outcrops of this formation on this region, and its too stratigraphly extensive, and its done part of Parana Basin. This situation turned better the localization of the Ceramic Industry among this region. This paper increased the researches that have been maked in a Ceramic Quality Group at Universidade Estadual Paulista ,which is composed by some Professors and undergruaduating and graduating students at Universidade Estadual Paulista- Campus in Rio Claro. Strictaly this paper treat about the kaolins that have been used on the composition of the enamel that decorate the surface and have influence in the final color of the pigments when its is increased the enamel.

The enamels

The classification of enamels can be by the surface

Glossy

- Semi mat
- Mat
- Surface crystalline
- Smoothly

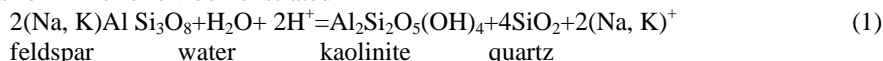
And its classification by the optical proprieties can be:

- Transparent
- Opaque
- Fine increased crystals
- Big increased crystals

The kaolinite

The kaolinite is provided by the caulinzation, the precursor fase is fedspar and muscovite, and some impure products can give color to this material, but to be used to material for the manufacture of enamel its has to be pure or almost pure. The deposits *in situ* is known by the name *china clay*, this name of the kaolinite had been used because the historic deposit in China, the Deposit *Kao Lin*.

Its form like follow demonstrated



The great difficulties is to know at what conditions its is formed.

Some kaolins have been studied to know the particulars characteristics that them have had to make a final fine finished decoration on the tile. Some of this kaolin are from Brasil Northeast. The studied will show the needing characteristics of the kaolin to ideal properties in the enamel.

Other materials that compound the enamel and engobe

Some other material that is used to production depend on the characteristics on the surface of the enamel, like: zircon(if you need some opaque featuring), Zinc and Lithium to decrease the fire temperature, Talc (structural element), Feldspar to decrease the temperature, Bore to form glass.

Conclusions

The material which is used to compound the enamel must have ideal considerations of purity, brightness and some rheological characteristics, the rheological characteristics and its whiteness is done by the kaolin and zircon, in some glasses is introduced some alumina compounds, some alumina (Al_2O_3) gotten by a Brazilian Industry was introduced at an enamel formulation but its grain size was not on ideal conditions then it caused some problems on the enamel rheological properties. Some studies have been made to set the rheological problems and to characterize the color fire.