

## **Resumen 127**

# **PRODUCTION OF CERAMIC BLOCK WITH INCORPORATION TO REJECT MINERAL IN TRADITIONAL CERAMICS**

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### **ABSTRACT**

The Rio Grande do Norte is the 4th national producer of mineral resources of Brazil. Here are produced the most varied resources, with emphasis on iron, gold, tantalita, kieselguhr, oil, natural gas, limestone, feldspar, salt, quartz, kaolin, ornamental stones, mineral water, gems, scheelita, among others. The mineral extraction activity is considered a highly degrading due to the large volume of material as it moves in the form of ore and waste, where the major concern at present is to manage and provide a final destination for all the waste produced, allowing the minimization of environmental impact and social. Furthermore, the production of ceramics in the state occupies a position of industry, capital goods, contributing to the development of local economy, only producing tiles, bricks and ceramic blocks. The most recent geological map of Rio Grande do Norte, there are over 2 thousand items that were analyzed produced or producing some kind of mineral. This work aims to characterize and evaluate the possibilities of using the tailings of granite and marble, together with the waste of scheelita, the composition of the ceramic blocks. We collected samples of mineral wastes of granite and marble, besides the waste of scheelita companies in the region of the newborn Seridó and then their characterization was performed by determining the size distribution, chemical analysis (EDX), X-ray diffraction, ATD, ATG and SEM. After characterization were prepared four groups of samples with percentages of 10, 20, 30 and 40% to reject the traditional ceramic body. The samples were compressed in a uniaxial press, heated to a temperature around 100° C for 24 hours, removing all the moisture present and the sintered 850°C, 900°C, 1000°C and 1100°C. Were tested for porosity, plasticity, thermal analysis and optical microscopy and SEM of the final product obtained. Based on the results found that these ceramic composites obtained have physical and mechanical characteristics similar to traditional ceramic bodies used in the production of blocks and tiles, in addition to features present within the regulatory specifications for the production of ceramic blocks, demonstrating the technical feasibility and economic production of the same.

Keywords: Red ceramic, marble and granite reject, Scheelite reject, Ceramic Block