

CHARACTERIZATION OF QUARRIES FINE AGGREGATES PRODUCTS IN SÃO PAULO METROPOLITAN AREA

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Classified as the third among the biggest metropolitan areas of the world, the São Paulo Metropolitan Area (SPMA) has a quarter of its total 8.051 km² of extension occupied by urban edifications, and comprises 39 cities. Following the SPMA urbanization growing up, several mining companies were installed neighboring the cities in order to supply aggregates for civil construction, and they actually represent an activity tightly involved with urban areas. This work deals with characterization studies of fine materials produced, that are profitable by products in the major quarries and problematic wastes in the small ones. The crushing stones exploited are mainly of granitic composition, meaning granites and gneisses with variable characteristics. An intensive work of sampling was developed in the quarries located in SPMA, to collect rock fragments and fine aggregates (grain size below 5 mm) generated in the beneficiation plants, with the aim of characterize these materials. The rocks fragments were petrographical analysed, and the fine aggregates sampled material were submitted to chemical and grain size analysis. Distinguished by textural aspects and mineralogical assembly, the quarries could be grouped in lithotypes exploited. A zonation of these lithotypes in the SPMA was elaborated. The characteristics of the fine aggregates sampled material were compared between themselves and correlated the lithological groups, focussing potential application in civil construction (pavimentation, concrete,...), glass and ceramic industries. The project intended the understanding of the relationship between mineralogical and chemical characteristics of the fine aggregates produced and the original mineralogical assembly of the rock lithotypes.