

## **EMPIRICAL STUDY OF ROCK MASSES FOR ORNAMENTAL STONES**

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The Northeast region of Brazil has a large exposure of crystalline pre Cambrian rock, which has great potential for production of dimension stone granitic rocks. This research has the objective of suggesting technical procedures for the empirical analysis of rock masses suited for the extraction of covering stones. Generic aspects are treated in the search of more rational quarrying methods, with emphasis in the following characteristics: regional geology and geomorphology; mineral and petrographic aspects; and geotechnical characterization of the rock mass. The methodology adopted consisted in bibliographic survey and field observations. It has been possible to define principles for estimating in situ stresses; evaluation of methods for rock mass classification oriented to ornamental rock; and observation of geologic aspects at eight quarries. In order to prepare quarrying plans it has been concluded that the following sources of information should be used during the early stages of prospecting: analysis of previous works about the structural geology of the region; petrographic study in oriented rock samples; analysis of topographic characteristics of the area; and analysis of rock cores. It has also been observed that rock mass classification systems oriented to dimension stones should not use RQD index since it is generally equal to 100 in that case. The usefulness of Laubsher classification system in estimating the mean size of blocks is highlighted. The final conclusions include recommendations of practical procedures, which may be adopted for geologic exploration of dimension stone granitic rocks, according to their different genetic types.