

DIMENSION STONE EXPLORATION IN THE VILA REAL REGION (NORTHEAST OF PORTUGAL)

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The exploitation of ornamental rocks, especially granites, has been greatly increasing for the last ten years in Portugal, including the region of Vila Real (Northeast of Portugal). Extraction units are not always installed in the most appropriate places thus leading to negative repercussions in that concerning their economic viability, territorial planning and environmental impact. In this report we present the evaluation of nine granites outcropping in this region regarding their suitability to provide quality ornamental rock. On a first stage, eighty-three potential sites for the installation of quarries have been selected taking into account research carried out by analysing aerial photographs and by direct observation of namely fracturing and alteration. The second stage of evaluation has been performed regarding the following features of the studied places: topography, accesses, rock weathering, thickness of the soil layer and/or the weathered material, fracturing, reserves and environmental impact, evaluated on a scale of five levels (0 to 4). By considering these items according to their relative importance, the sites can be evaluated through the application of an exploitability index ranging from 0% (ideal situation) to 100% (least favourable situation). The application of this methodology to the studied granites has provided average values of the exploitability index ranging from 14% to 50%. These results have made it possible to establish a ranking of the granites, pointing to fracturing and accesses as the most negative aspects and topography and weathering as the most favourable ones.