

Guidelines for natural stone reserves and resources evaluation, classification and reporting – further evolution

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ABSTRACT: The natural stone industry is part of the mineral resources sector. Unlike the situation with rarer minerals (e.g. base metals), the overall geographical distribution of this resource, its ease of access and its common use along History has made possible its exploration and exploitation with only informal knowledge by micro to small-sized companies. This situation has prevailed (and still prevails in large segments) in the natural stone industry until recent times, leading to a disperse industry structure with only basic scientific and engineering knowledge.

Reserves and resources evaluation and reporting with the standards common in other mineral sub-sectors is virtually absent from the natural stone mining industry. Most quarries are developed based on empirical tests performed on surficial areas of the rock massif to exploit; geological cartography is not generally used; even if in some cases boreholes are drilled, the logging and reporting of that work is clearly sub-standard, its full potential value being clearly not used; geological 3D modeling of the resource is an exception and mine planning an administrative formality.

Competitive pressure, the need to comply with restrictive environmental and mining regulations and the scarcity of some types of valuable natural stone led to a need to adopt the procedures of more evolved mining sub-sectors. This work presents a methodology for natural stone reserves and resources evaluation, classification and reporting.

Natural stone is a mineral resource with specific characteristics. Unlike metallic mineral deposits, in which the value model used to define resources as reserves is built around metal prices, volumes/tonnages and grades, the natural stone deposits often have different rock varieties (with completely different values), in addition to price variation of qualities and block sizes of a specific variety, that render a value model more complex. Fad and fashion components also add to the complexity of the valuation exercise, especially in the case of new to the market varieties.

The methodology used describes methods used in reserves and resources evaluation, criteria for reserves' and resources' classification and a standard framework for reporting in the specific case of natural stone.

On a holistic perspective, the methodology presented goes one step further, including the sub-products and byproducts of natural stone extraction and processing in the resources and reserves evaluation, classification and reporting methodology.

The work presented here is an evolution of this project's status presented at the Global Stone Congress (July 2012).

PALAVRAS CHAVE: NATURAL STONE, RESERVES AND RESOURCES, REPORTING AND CLASSIFICATION