

DETERIORATION AND REMEDIATION OF HIGHWAY SLOPES ON OPHIOLITIC ROCKS: CASE STUDY ON NE PORTUGAL.

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The slopes along the northeastern segment of the highway Porto – Bragança (N Portugal) are particularly suitable to characterise the mechanisms of deterioration prevalent on the different members of a Lower Palaeozoic lithostratigraphic sequence with metasediments and the overlaying ophiolitic suite – greenstones, amphibolites, metarhyolites, graded volcanoclastics and quartzphyllites.

The recent weathering is fairly mild, as the highway slopes were machined five years ago.

The deterioration susceptibility along the slopes was determined with the screening of five major parameters: density of discontinuities, opening of fractures, degree of weathering, rock strength, suitability of cleavages and joints for sliding and scaling consequent to the relief of the confining overburden. The existence of discrete faults, as well as the technology used to make the road cut, and the height and tilt of the slopes are also used to compute the weighted sum; that is used to quantify the deterioration susceptibility: the indices fall within the interval 53 to 99 (the full interval ranges from 6 to 160).

On a lithologic sequence with such a complexity and diversity every type of deterioration mechanism from debris flow or raveling to blockfalls or slabbing are on progress.

This susceptibility study and the consequent geotechnical profiles of the highway are to be used for the safe and good maintenance of the highway and traffic.