



The Fumanya dinosaur trackside (Pyrenees, Spain): decay studies and integrated conservation works.

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Fumanya is the footwall of an ancient opencast coal mine that it is extended more than a kilometre, is 40 meters high and has an inclination of 60 degrees. This wall displays more than 3500 dinosaur footprints, being among the world's largest and most important outcrops of this kind.

Decay and conservation studies of rocks are integrated in a multidisciplinary approach that include geology (petrological, fracturation and structural determinations), engineering projects (detailed topography, surface runoff control, large-scale stability of rocks etc.) and paleontological studies (assessment on the appearance of ichnites before decay and the most relevant points to protect).

The rock of the whole surface is a marly limestone that undergoes a fast decay because of the interaction of atmospheric effects (rain wash, snow and freeze) and the microfracturation of rocks.

In order to determine the most efficient treatment before conservation, we have carried out several laboratory and in situ essays so that we can study the behaviour of rocks before and after the application of commercial consolidants and hidrofugants. In situ works include decay mapping, analysis of soluble salts, consolidation essays

and hidrofugation in several zones. Regarding laboratory studies we have carried out petrological analysis, XRD, scanning microscope and hidric properties such as vacuum absorption, free desorption, capillar suction, salts crystallization, expansion and product penetration. The obtained results allow to select the ideal products for the kind of rocks and the natural conditions of the outcrop.