



Characteristic roofing slates from Spain: Morneau and Los Molinos

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The world's major roofing slate outcrops are found in the NW of Spain, in the Ordovician terrains of the domain of the Truchas Syncline. In this remote area, slate was quarried since ancient times for the use of the inhabitants of the region. Half of a century ago, an industrialization process took place in this area, which began to produce high quality roofing slate for many buildings from Japan to the USA, and especially in Europe. Since then, Spanish slate roofing has been widely used for new buildings and also for restoration of historical buildings. This work revises the occurrence and characteristics of the two most representative grey slate varieties from the Truchas Syncline, Morneau, a fine-grained slate, and Los Molinos, also a grey slate with a slightly coarser grain. Both slates have a very similar aspect, but Morneau slate have some iron sulphides on its composition that sometimes forms oxidation spots. Morneau beds are found at the Middle-Upper Ordovician age Casaio Formation, while Los Molinos beds are located at the Rozadais Formation, of age Upper Ordovician, defined as formation just for the Truchas Syncline domain. Both slates have a high degree of homogeneity on their constructive characteristics, with a typical composition of quartz, mica and chlorites, and a metamorphic degree corresponding to the green schists facies.

This work revises the history and characteristics of both slates, that can be considered as lithotypes that can be used as a reference during the prospection of new slate outcrops worldwide. The presented varieties of slate are proposed for their inclusion as Global Heritage Stones.