



Hornblendite in Thailand: occurrence, quarrying and properties of an exceptional building stone

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The application of hornblendite as building stone is rare, which is attributed to the scarce occurrence of the material and the fact that geological conditions in verified hornblendite deposits often do not meet the requirements for dimension stone production. In recent times, hornblendite was obtained as dimension stone from a deposit in NE Thailand (Wang Nam Kiew district, Nakhon Ratchasima province). The occurrence is supposed to belong to the Upper Triassic Hin Tang Hornblendite, which forms a NE-SW-trending stripe within undifferentiated intrusives of mainly dioritic and granitic composition. The quarried stone can be characterised as almost monomineralic due to the high content of more than 90% hornblende. Although hornblende crystals show a wide range regarding grain sizes, the majority of these minerals is giant grained and reaches several centimetres. The overall colour of the stone is deep black with slightly greenish shade, where amphibole alters to chlorite. Locally, white albitic feldspar is situated in the interstitial spaces of the euhedral hornblende, which evokes a strong colour contrast to the surrounding dark minerals. The fracture spacing in the deposit allows the production of large blocks, which are extracted by blasting and wedging. Finished products of the hornblendite are mainly distributed on the domestic market, where they are used for interior purpose and for exterior façade cladding. The mechanical properties of the material average around 7 MPa for the tensile strength, 11.5 MPa for the flexural strength and 125 MPa for the compressive strength (all strength data are mean values obtained from three orthogonal directions). For a more detailed characterisation of this hornblendite, information on the quarrying situation and the physical-technical properties are presented and discussed.