APPLICABILITY OF AUSTRIAN CLAYS AS ADOBE CONSTRUCTION MATERIAL

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Loam was used as a traditional construction material for more than 10.000 years and nowadays the advantages of this material are appreciated again in many different ways (MINKE, 1995).The applications of loam reach from the preservation of ancient monuments and historical buildings, sealing compound up to the low energy housing - the so called passive house. Loam is a sustainable, renewable material that can be recycled and therefore harmonises with nature.
Loam, is a fine-grained sediment consisting of sand, silt and clay in similar portions. Clay as the binding agent with its typical characteristics like swelling and shrinking, the ability to regulate air humidity, as well as its typical plasticity properties, and the adsorption capacity give reason to find out more about this resource.
The objective of this project is to find out 1) if the mineralogical composition is correlated with physical parameters such as compression and tensile strength, fluid and shrinking limits; and 2) it is possible to deduce the physical properties from the mineralogical composition.
Particle size analysis, bulk and clay mineralogy, and pH measurements on the one side and typical geotechnical and physical examinations on the other side should point out that significant mineralogical patterns influence the physical and mechanical properties.
The results of the study show properties and skills of this renewable building material and also point out the sustainability of adobe construction.

Keywords: Adobe construction, Clay minerals, Loam.

[1] Minke, G., 1995: Lehmbau – Handbuch: der Baustoff Lehm und seine Anwendung. 321 pp, Ökobuch Verlag Staufen/Freiburg.