

Complex Resistivity and Radar Investigation of Building Material: First Results of Field Scale Measurements

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A b s t r a c t

Moisture ingress is one of major damaging factors for masonry buildings. As the complex resistivity (CR) is sensitive to textural properties as well as to the pore fluid chemistry of wet porous media, its non-destructive application can provide helpful information for conservators. In a comprehensive laboratory study it has been shown that CR might even be able to distinguish between salt content and saturation degree in only one measurement. The combined use of electrical and electromagnetic measurement techniques in two field-scale flooding experiments has shown some unexpected differences. Possible reasons are discussed and it is shown that bringing together the information of both methods leads to a clearer picture.

Key words: complex resistivity, ground penetrating radar, non-destructive testing, masonry, salt and moisture damage.