



## **Comparison of pore space textural characteristics of natural stone exposed to real weathering environment and/or subjected to accelerated weathering tests: implications for durability assessment**

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One of the key questions in the debate on durability of natural stone is related to the relevance of accelerated weathering tests for durability assessments, specifically whether similar material responses can be achieved? In the recent study, specimens of opuka stone (extremely fine-grained clayey-calcareous silicite) was subjected to accelerated weathering tests in a climatic chamber (sulphur dioxide atmosphere, freezing/thawing). After completion of certain number of cycles, pore space textural characteristics by means of mercury porosimetry were studied. These data were compared with porosimetric data obtained from a piece of stone, sampled from a carved stone altar located in the interior of the St. Vitus Cathedral (Prague, Czech Republic) which was affected by 150-years lasting indoor decay processes (cyclic themohygric stresses due to variable indoor atmospheric conditions). Interestingly, the pore space textural characteristics of these two sets of specimens are closely related and show some distinct features different from fresh, non-weathered material. Our observation therefore supports relevance of some accelerated weathering simulations; however, conditions of these simulations must be based on parameters of real environment.