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The use of panels as facade cladding has increased substantially during the last few decades. However, during recent years reports of facade problems have increased dramatically. Facade cladding has, in some cases, suffered from problems with durability such as exfoliation, disintegration of macrostructure and loss of strength. The damage may to some extent be accelerated by salt crystallization. This is an investigation of the durability of stones exposed to salt crystallization, by means of ultrasonic velocity measurements, compressive strength measurements and analysis of thin sections before and after salt exposure. Four different stones are investigated: the limestone Bateig Azul, the sandstone Oberkirchener, the limestone Perlatino, and the limestone Travertine. The procedure for the salt crystallization test is EN 12370 standard "Natural stone test methods – Determination of resistance to salt crystallization". Furthermore, ultrasonic velocity measurements are performed for each specimen during the salt crystallization test cycles. The ultrasonic velocity decreases from undamaged to damaged stones. The compressive strength also decreases with increasing number of cycles. After 19 cycles Bateig Azul has 1.45 km/s decrease in ultrasonic velocity and 66.3 % decrease in mean compressive strength after only 9 cycles, while Perlatino has 0.80 km/s decrease in ultrasonic velocity and corresponding 2.7 % decrease in mean compressive strength after 19 cycles. Bateig Azul has 18.4 % in open porosity while Perlatino has 1.1 % in open porosity. By means of ultrasonic measurements it is possible to detect damage in stones exposed to salt crystallization cycles. The results show a tendency to less resistance of salt crystallization for more porous materials.

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