The use of natural stone in our country and in the world is increasing, especially in the construction sector. Natural stones are usually preferred for coating surfaces and internal and external facades of the building construction industry. However, the marble to be used throughout the service life should be resistant to atmospheric conditions that they are in constant contact. To determine the resistance of natural stones against the atmospheric conditions (freeze-thaw and thermal (heat) shock) are carried out aging tests. In this study, aging tests were conducted on 6 different natural stones. First of all, two test groups were established and freeze-thaw cycles were applied to one group while thermal shock cycles were applied to the other. Depending on the number of cycles at the end of aging tests, mass loss and brightness variations were examined. When findings are evaluated, freeze-thaw conditions caused more loss of integration on natural stones than thermal shock conditions, whereas, thermal shock impacts worsen the surface brightness of natural stones compared to the freeze-thaw conditions.