

Salt attack resistance

AS/NZS 4456.10

In some situations, pavers can be attacked by salts from ground water, swimming pools, spas etc. How resistant a given paver is to the effects of salt crystallization will depend on things like the porosity of the paver and the strength of the material the paver is made from, as well as the concentration and type of salt, and the ambient temperature.

Pavers may be classed as Exposure Grade if they either have a history of coping with a salty environment, or have passed a laboratory test which simulates such conditions. The lab test puts small segments of paver through a series of 40 cycles of alternate soaking in a salt solution, then drying in an oven. If the specimens survive the 40 cycles with less than a specified loss in mass, they've passed the test.

The salt normally used in the test solution is sodium sulfate, as this is what causes most damage. Sodium chloride may be used instead, for instance if the paving is to be laid within reach of wind-blown sea spray.

If the pavers are made of stone (basalt, limestone, sandstone, granite, etc.) then a modified test is used, with different specimen dimensions and number of cycles.

<http://www.nawkaw.com.au/Images/MarineTest.gif>



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Austral Bricks Plant #3 Laboratory Acc # 2295

Results of Testing of Mediterranean Series for Durability

Thursday, 06 March 2003

Aim

To test the Mediterranean Series of bricks for durability to salt attack.

Methodology

Prisms of bricks and mortar coated with the Nawtint process were cycled through the 5 cycle salt attack method until failure.

Results

After 12 cycles the prisms were showing some signs of salt attack on the side not covered with the acrylic polymer. The polymer had adhered to the brick with no significant signs of deterioration. There was no evidence of salt surfacing on or under the acrylic.

Conclusion

This is third series of tests performed on the Mediterranean series. The initial test on prisms constructed from Plant #3 amberglow material failed significantly within 5 cycles. The two subsequent tests on prisms constructed from Plant #2 amberglow material have been far superior with no significant failure after 12 cycles.

Recommendation

Plant #2 is currently undergoing a reformulation of its amberglow material. After this has been completed and a further batch of Mediterranean has been produced, further testing should be conducted.

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