

"A new way of looking at the Rapid Chloride Permeability Test".

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The "Rapid Chloride Permeability Test" in ASTM C1202 is well known for not being rapid, not primarily measuring chlorides and not measuring permeability. Nevertheless it is a very useful test that has gained significant acceptance in the USA and is now being used increasingly in Europe. This paper will include results from a new computer model of the test which illustrates some of the physical processes that it does measure (electromigration and diffusion of hydroxyl, chloride and other ions). The model also predicts the voltage drop across the sample and shows that this is often highly non-linear. Initial observations of the non-linearity will be presented and the effect of the resulting changes in the electric field on modelling the test will be discussed. The paper will conclude with recommendations to improve the use and interpretation of the test.