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Reviews

It is an amazing publication which i actually have at any time go through. It really is writter in easy words and phrases rather than hard to understand. Its been developed in an extremely easy way which is merely following i finished reading through this pdf in which actually changed me, affect the way i think.

(Garry Lind)

SCHRIFTENREIHE DER ZEMENTINDUSTRIE, HEFT 77: ASSESSING THE AUTOGENOUS SHRINKAGE CRACKING PROPENSITY OF CONCRETE BY MEANS OF THE RESTRAINED RING TEST

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Verlag Bau & Technik Sep 2011, 2011. Buch. Book Condition: Neu. 21x14.8x cm. Neuware - Autogenous shrinkage is the major shrinkage component of concretes that contain much less water than would be required for complete hydration. This mainly applies to ultra-high strength concrete and, to a lesser extent, to high strength concrete. Both have particularly low water-cement ratios. The relative surplus of cement leads to an internal drying, irrespective of whether the concrete dries out to the ambient air or not. This process of so called selfdesiccation is associated with autogenous shrinkage which, if restrained, can lead to cracks, potentially impairing the in many respects outstanding durability of these kinds of concrete. Hence, to fully benefit from the advantages of high and ultra-high strength concrete, it is essential to minimize the risk of autogenous shrinkage cracking. Attempts to do so, however, require a reliable method for assessing this risk. Presently, there is no such method. Cracks are the result of relatively complex processes, in particular at early age as concrete properties change rapidly. A dependable assessment of the cracking risk requires comprehensive testing and a thorough understanding of the interacting parameters. Early age cracking in cementitious systems is not a new problem; cracking due to restrained drying shrinkage and thermal contraction has been examined at length. However, the investigation and prediction of stresses and cracks due to autogenous shrinkage brings about new challenges. The essential issue is the onset of stresses at very early age. This greatly increases the influence of creep and relaxation. Especially at stress levels close to failure this influence is highly non-linear and difficult to quantify, experimentally as well as mathematically. Another challenge is the fact that temperature strongly influences the autogenous shrinkage and, presumably, the cracking risk as well. From isothermal tests at different temperatures...

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