



Schriftenreihe der Zementindustrie, Heft 77: Assessing the autogenous shrinkage cracking propensity of concrete by means of the restrained ring test

By Sören Eppers

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...



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