

Ecological, Economical and Environmental Aspects of Self Compacting Concrete –Present and Future

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Self compacting concrete (SCC) is a material which 'poured' into the formwork compacts 'without any further compaction' and exhibits excellent flow behavior. De Schutter published a comprehensive overview on the state of the art of self compacting concrete where he presents the development from an early patent in Germany to the development of an industrially usable product in Japan. Meanwhile in the US the technology is referred to as "the New Normal" – meaning that SCC is going to be used as the normal way to produce concrete either in pre- fabrication or on site.

Part of this "New Normal" is a classification of SCC – which by the way might differ in different parts of the world-according to composition and properties of the fresh and hardened concrete. Amongst this classification in many countries a trend to "green" or sustainable SCC is observed and described. It consists of the challenge to maintain the excellent properties of the fresh and hardened concrete whilst optimizing the use of raw materials in such ways that

- SCC production and use is associated with less energy and emissions
- The CO₂ footprint is minimized
- More secondary cementitious materials are used

The paper describes the state of the art of Self Compacting Concrete and the challenges to combine the above mentioned features with the traditional mix design of SCC as well as the impact this trend might have on development of SCC in the near future.

Key Words : Self compacting concrete, Secondary cementitious Materials, Co₂ footprint, Energy saving