

THE CONCRETE

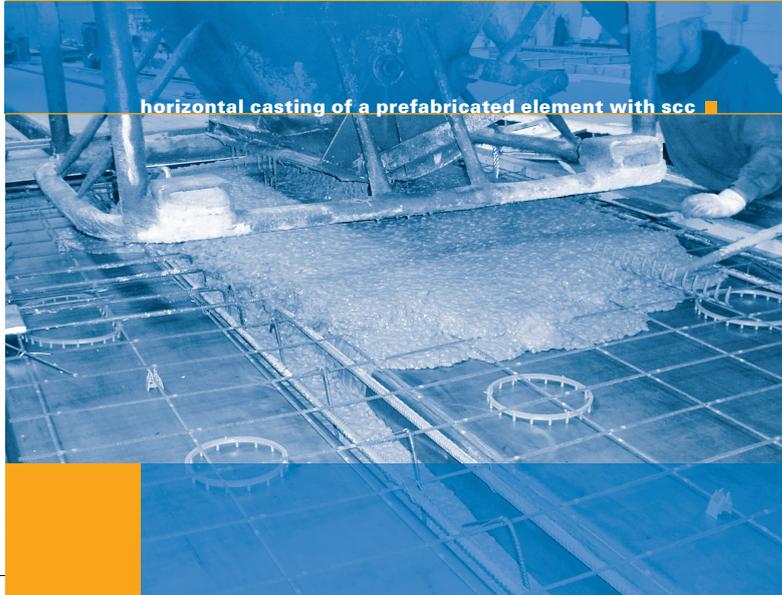
SCC, OR SELF-COMPACTING CONCRETE, IS THE CONCRETE OF THE FUTURE - A MATERIAL THAT WILL BRING GREAT ADVANTAGES TO THE CONSTRUCTION INDUSTRY AND SOCIETY AS A WHOLE

SCC is not only capable of increasing productivity in the building industry, its use can also dramatically improve the working environment. What's more, SCC provides architects with new possibilities for the design of beautiful concrete structures. The resulting structures will be of a better quality and more durable than those made using traditional concrete.

■ SCOPE

The SCC Consortium brings together research, development and innovation. Its aim is to improve the working environment in the building industry and to enhance productivity by increasing the use of SCC. SCC differs from traditional concrete in a number of ways, and new expertise is therefore required to exploit the huge potential offered by this material. The SCC Consortium will generate knowledge about SCC and the construction of concrete structures with SCC.

The primary aim of the SCC Consortium is to make SCC the most used type of concrete in Denmark before 2008. In addition, the Consortium is to give the Danish concrete industry a technology jump, making it a world leader in the design and construction of concrete structures with SCC.



horizontal casting of a prefabricated element with scc

OF THE FUTURE

■ STRONG COLLABORATION

The SCC Consortium brings together large and small companies, as well as knowledge centres and leading European research institutions. Close collaboration between suppliers, contractors, building owners and researchers is one of the main strengths of the SCC Consortium, which draws on frontline research as well as practical knowledge from the building trade.

■ EFFORTS

The Consortium's efforts focus primarily on the three areas where SCC offers the greatest potential, namely floors, prefabricated elements and civil engineering. More specifically, the Consortium's activities focus on material development, the construction of concrete structures with SCC and the production of SCC. These activities are carried out under a number of sub-projects which focus on the examination of polymers at the nano-level, the correlation between constituent materials and concrete properties, determination of concrete properties, specification of requirements, the efficient production of SCC using on-line monitoring, and placing SCC.

■ UNIQUE DOCUMENTATION

The SCC Consortium intends to be the first to scientifically document the use of SCC in terms of productivity and the working environment. It will do so with assistance from The Benchmark Centre for the Danish Construction Sector and The Working Environment Centre for Construction.



in situ casting with scc

The Benchmark Centre for the Danish Construction Sector will document productivity by means of the key figures generally used to measure construction productivity. The Working Environment Centre for Construction will document both improvements of the working environment as well as new challenges involving SCC.

■ COMMUNICATION

The results of the project will be disseminated by the SCC Consortium via the construction of a bridge for the Danish Road Directorate. The Consortium's findings will also be published in a number of publications, guidelines and handbooks that convey new knowledge about SCC and the construction of SCC structures to, among others, concrete suppliers, contractors and consultants.

THE SCC-CONSORTIUM

The SCC Consortium is the abbreviated name for The Innovation Consortium for Self-Compacting Concrete - a technology jump for productivity and working environment in the building industry. The members of the SCC Consortium represent every stage of the value chain, from knowledge centres and research institutions, through the suppliers of raw materials and measuring equipment, to manufacturers, contractors and building owners. The SCC Consortium was established in 2003, and activities are due to continue until 2006. The overall budget represents approximately DKK 20 million, of which DKK 7.7 million are being contributed by the Danish Ministry of Science, Technology and Innovation.



a prefabricated scc element

PARTICIPANTS

SCC-CONSORTIUM

■ SELF-COMPACTING CONCRETE

SCC stands for Self Compacting Concrete. **SCC** was created in Japan at the end of the 1980s. Today, Denmark is the largest user of **SCC** relative to the total domestic consumption of concrete. **SCC** has excellent flow properties and can therefore be cast without the use of vibration or other mechanical influences. Less effort is therefore required, and the amount of noise produced is greatly reduced.

SCC's advantages include a better working environment, better concrete quality, improved productivity, minimum need for levelling equipment, lighter work, less time consumption and a better overall economy. The flow properties are achieved by means of chemical admixtures and good mix design. **SCC** can be used both for casting in situ and for the production of precast concrete elements.

■ CONTACT

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■ INDUSTRY

4K Beton A/S one of Denmark's largest manufacturers of ready-mix concrete, producing more than 500,000 cubic metres a year

MT Højgaard a/s Denmark's leading industrial contractor, with 5,100 employees and an annual turnover of just under DKK 8 billion

Aalborg Portland A/S Denmark's only cement manufacturer and the world's leading manufacturer and exporter of white cement

Videometer A/S manufacturer of advanced vision systems for measuring and quality control in the industry

Betonelement a/s one of Denmark's leading manufacturers of precast concrete elements with eight production centres in Denmark

Other participants include **NCC Råstoffer, Dragsholm Beton ApS, Emineral a/s, Elkem Materials** (Norway) and **the Danish Road Directorate**

■ RESEARCH

Informatics and Mathematical Modelling (IMM) at the Technical University of Denmark, a leading research centre for advanced mathematical modelling and advanced IT systems. Also associated with the project are **the Department of Civil Engineering** at the Technical University of Denmark, **the Ecole Polytechnique Fédérale de Lausanne** in Switzerland, **the Eidgenössische Materialprüfungs- und Forschungsanstalt** in Switzerland and **The Benchmark Centre for the Danish Construction Sector**.

■ KNOWLEDGE CENTRES

The Danish Technological Institute, Concrete Denmark's independent technological service institute. The Institute serves as project coordinator for the SCC Consortium. Also associated with the SCC Consortium is **the Danish Working Environment Centre for Construction**.

■ **A TECHNOLOGICAL BREAKTHROUGH**
set to improve productivity and the working environment in the construction industry

SELF-COMPACTING CONCRETE

SCC-CONSORTIUM

WWW.SCC-KONSORTIET.DK