



Concrete moves...



OSLO
June 7 - June 8 2018



Concrete contribution to
a changing world

ERMCO
EUROPEAN READY MIXED CONCRETE ORGANIZATION

ALPHA CONCRETE

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Abstract

The concept for concrete production with consideration of the expected fresh concrete temperature, the density of recycled water and also the processing time has been going through our heads for years. By combining plant technology, plant control and admixture technology, the quality of fresh concrete can be kept at a high level, regardless of external influences.

The biggest problem our customers are dealing with is recycled water. Especially in urban areas, a lot of recycled water is produced. Due to the use of this water, however, the fresh concrete properties are strongly negatively affected. The amount of water needed is increased, and the slump retention is deteriorated.

Due to the different fresh concrete and ambient temperatures in winter and summer months, the doses of admixtures have to be adjusted continuously. The use of the Alpha Concrete Concept makes these (conversions) unnecessary. For the implementation of this Alpha Concrete idea, competent partners were sought. In the area of plant engineering, we convinced SBM Mineral Processing GmbH for a cooperation. Simma Electronic GesmbH convinced us with its know-how for implementation in plant control.

The development and adjustment of the concrete additives on the latest polycarboxylate ether base has fallen in our area of responsibility. For this purpose, all the starting materials (binders, aggregates, recycled water) were brought into our laboratory by the respective customers and tested at all temperatures and dosages to be expected.

Through the use of various polymers, a meaningful and easy-to-work solution was found. Two different superplasticizers were used. Premment Alpha Prime P100 is used for increasing the flow of fresh concrete, the component Premment Alpha Evo E 201 for slump retention. When applying the Alpha Concrete concept in practice in the field of ready-mixed concrete, we were able to confirm the laboratory results and start the practical operation without any serious problems by only making slight adjustments.

Keywords: fresh concrete, recycled water, superplasticizers