

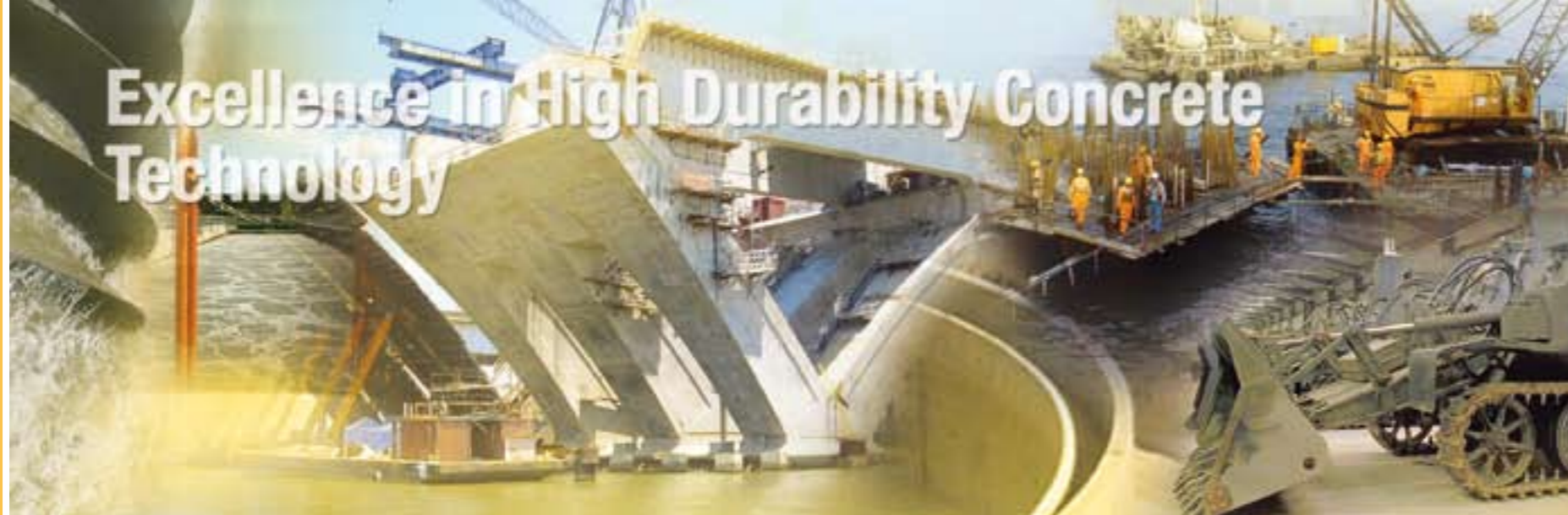
Construction



## Excellence in High Durability Concrete Technology

**Sika**®

# Excellence in High Durability Concrete Technology



## Gain “Added Value” from durable Concrete achieved with Sika® Technologies

The durability of the concrete is a particularly important topic when designing a concrete structure. Sika technologies will ensure the achievement of your specified placing and performance requirements.

Such high durability concrete is used for the following types of applications and structures:

- Dams and watertight structures
- Sewage treatment plants and chemical plants
- Concrete structures with enhanced frost and freeze/thaw resistance such as roads, bridges, galleries and tunnels, etc.
- Hydraulic structures and industrial flooring to withstand abrasion or heavy traffic

### Improved Durability results in

- Prolonged service life of concrete structures and elements
- Lower costs for maintenance and refurbishment works
- Less repair work, minimizing traffic disturbances
- Improved appearance of the concrete surfaces
- More satisfied customers

## Take Advantage of the unique Sika® Technologies for your High Durability Concrete

The key to durable concrete production is the selection of durable constituent materials, together with a dense cement matrix which is achieved by:

- Reducing the water/cement ratio and the water/binder ratio respectively
- Providing a sufficient amount of fines in the concrete mix design
- A soft consistence with a good flowability in order to fill even intricate formwork completely
- Proper curing which starts as soon as possible and is maintained for a sufficient period

With the extraordinary superplasticizing capabilities of **Sika® ViscoCrete®** technology, it is possible to reduce the water content of the concrete very significantly and sustain or even extend its flowability.

Dependent on the exposure conditions of the concrete, further improvements in durability can be obtained with the addition of:

- **Sika® Control®-40** for the minimization of shrinkage
- **SikaAer®** to ensure a defined amount of artificially entrained air voids, for increased frost and freeze/thaw resistance
- **SikaFume®** silicafume to increase the density of the matrix and the bond between the cement matrix and the aggregates
- **Sika® FerroGard®** as a corrosion inhibitor for reinforcement steel, particularly in marine/chloride environments

Sika has long-term experience in designing durable concrete, focussing on local exposure conditions of the structure and the application. This experience has been a major contribution to successful concrete structures all over the world, which have now proven their durability for many years.

## Design and Planning

## Concreting

### Carbonatization Resistance



Increased carbonatization resistance reduces corrosion.

### Waterproof Concrete



Reduced permeability leads to better waterproofing properties which increase the durability of underground structures and potable water reservoirs.

### Chemical Resistance



Tank constructions, sewage treatment plants and chemical plants require chemically resistant concrete.

### Frost and Freeze/Thaw Resistance



Air-entrained concrete for roads, bridges, galleries and tunnels improves their durability.

### Abrasion Resistance



Increased abrasion resistance is required for hydraulic structures and industrial flooring with heavy traffic.

### Reduced Shrinkage



Minimized shrinkage tendency of the concrete leads to extended service life of concrete structures.



Unique Advantages with Sika® ViscoCrete® Technology

# Close to your Business in any Part of the World



Sika is a globally active company in the speciality and construction chemicals business. It has subsidiary manufacturing, sales and technical support facilities in over 70 countries around the world. Sika is THE global market and technology leader in waterproofing, sealing, bonding, dampening, strengthening and the protection of buildings and civil engineering structures. Sika has more than 10'000 employees worldwide and is therefore ideally positioned to support the success of its customers.

## Also available from Sika



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