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## Workshop

# Repair of Corrosion Damaged Reinforced Concrete Structures

East London (Blue Lagoon Hotel):

30 March 2010, 08:00 – 16:30

Port Elizabeth (Cherry Place Conference Centre):

31 March 2010, 08:00 – 16:30

Please note  
the new  
dates!

### Contact

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The workshop  
attracts 1 CPD Point

### Presenters

Professor Mark Alexander & Dr. Hans Beushausen, University of Cape Town

### Background, Content, Purpose and Structure of the Workshop

A large number of concrete structures are deteriorating, often prematurely, and need remedial measures to reinstate their safety and/or serviceability. Consequently, the need for repair and protection has grown considerably in recent years. While costs associated with repair of deteriorating concrete structures can be substantial, costs resulting from poorly designed or executed repairs may be even higher. The technical and economical success of repair projects depends on a range of factors, including a proper condition assessment of the structure, design and execution of remedial measures, and design and implementation of maintenance strategies.

For reinforced concrete structures, the main durability problem is corrosion of the reinforcement, resulting from the ingress of chloride ions or carbon dioxide and the subsequent depassivation of the steel. At the beginning of any repair project, a systematic condition assessment of the structure needs to be carried out to identify the cause(s) of deterioration and the extent of damage. The workshop informs about concrete deterioration mechanisms, on-site evaluation techniques and the principles of diagnostic testing (strategies, test methods and interpretation of results).



Repair methods need to be designed with consideration for the anticipated or desired remaining service life of the structure. A distinction must be made between repairs intended to stop deterioration fully and those merely aimed at slowing down deterioration processes for a limited period of time. During the workshop relevant repair methods for corrosion damaged concrete structures are discussed, focussing on design methods, application principles and limitations. The scope of relevant repair methods includes the application of penetrating corrosion inhibitors and surface coatings, temporary electrochemical techniques, cathodic protection systems and bonded overlays (patch repairs).

The purpose of the workshop is to provide participants with a basic understanding on condition assessment of concrete structures and concrete repair methods. The focus of the workshop lies on the repair of corrosion damaged concrete structures.

### **Participant Target Groups**

- Structural engineers and contractors involved in repair and rehabilitation of concrete structures
- Students and academics

### **Programme and Timetable**

07:30 - 08:15	Registration, tea and coffee
08:30 - 09:30	Concrete deterioration processes; repair philosophies and strategies in general (HB)
09:30 - 10:30	Reinforcement corrosion: principles, mechanisms and influences; corrosion prevention in new structures (MGA)
10:30 - 11:00	Tea and coffee break
11:00 - 12:00	On-site evaluation, diagnostic testing: strategies, test methods and interpretation of results (HB)
12:00 - 13:00	Repair principles for corrosion damaged structures: corrosion inhibitors, electrochemical techniques, cathodic protection system (MGA)
13:00 - 14:00	Lunch break
14:00 - 15:00	Bonded overlays and patch repairs: principles, materials, application techniques, limitations (HB)
15:00 - 15:30	Tea and coffee break
15:30 - 16:30	Repair material technology: presentations and demonstrations by sponsors

### **Literature and Handouts**

Printed material and handouts will be provided.

## Registration form

### *One-day Technical Seminar*

### **Repair of Corrosion Damaged Reinforced Concrete Structures**

Venue (please tick)

	<b>Port Elizabeth</b>	<b>East London</b>
	<input type="checkbox"/>	<input type="checkbox"/>

Fees (please tick as appropriate)

	<i>Registration before 15.02.10</i>	<i>Registration after 14.02.10</i>
Delegates	R 1800	R 2000
Delegates (CSSA members)	R 1600	R 1800
Students	R 400	R 600

***Please complete the following section legibly***

Title: ..... First name: ..... Surname: .....

Institution: .....

Full postal address:.....

.....

Fax:.....E-mail:.....

Tel:.....

VAT Reg. Number (if tax invoice is required).....

*Payment may be made in one of the following ways (please tick to indicate method used):*

**Bank transfer**, to be made to:

*Account holder: ICCRRR*

*Bank: Standard Bank of South Africa, Rondebosch*

*Branch Code: 02500911*

*Account No.: 072969334*

*SWIFT Address: SBZAJJ*

**Cash on arrival**

***Please email or fax this page to:***

**Hans.Beushausen@uct.ac.za**

**Fax no. 021 689 7471**