



CONCRETE REPAIR & PROTECTION COURSE



PROGRAMME

8.30 – 9.00 Registration

9.00 – 10.30 **SESSION 1 Concrete & Steel – Materials** [Paul Uno BE MBdgSc MIE(Aust) CPEng] - CCS

This session looks at the materials that constitute concrete and how they help or hinder the durability of concrete. Topics covered include flyash, slag, silica fume, blended cements (as well as market branding eg builders cement). Other topics to be addressed include shotcrete, chlorides, admixtures, evaporative retarders, curing compounds, identification of various types of cracks, their causes and prevention, the crack control provisions of AS3600-2001, autogeneous healing, carbonation testing, magnesite floor damage, galvanized steel bars and steel fibres.

10.30 – 11.00 Morning Tea

11.00 – 11.30 **SESSION 2 Silanes** [Justin Duong BE (Chem) MIEAust]- DRYTREAT

This session looks at silanes, the silicon based products that are used by industry to waterproof concrete and keep out other damaging products. This session will discuss the chemistry and the principles behind sealers such as silanes, how they work, results from testing these materials, practical examples of treatments. The differences between silanes, oligomeric siloxanes and other silicone resins will be discussed. Silane models showing the chemical bonding arrangement will be brought into the room and used to explain how silanes are so effective in waterproofing concrete.

11.30 – 12.00 **SESSION 3 Pore Blocking Crystalline Technology** [Brian Kaye - Remedial Technical Manager] - XYPEX

This session looks at an alternative solution for concrete protection and repair using pore blocking crystalline technology. It is a well known fact that if one can effectively block the pores in concrete then this waterproofing effect will stop aggressive ions such as chlorides, sulfates from entering the concrete and breaking it down or attacking the steel reinforcement. Recent research carried out at the University of NSW on the waterproofing product, Xypex, will form a major part of this presentation.

12.00 – 12.30 **SESSION 4 Waterproofing Membranes** [Colin Picton UK Specifications Manager] - GRACE

This session looks at waterproofing from the perspective of applied membranes in waterproofing concrete. Aspects such as surface preparation, treating imperfections in the substrate before membrane application will be explained. This will be followed by a review of the different membranes and which type offers the best performance. Other criteria such as torch-on vs non-torch applications will also be discussed. Actual job cases will be highlighted.

12.30 – 1.30 LUNCH - (Hot & Cold Buffet – Seated in Restaurant)

1.30 – 3.00 **SESSION 5 Epoxies & Cementitious Grouts - Repair Technology** [Mike Anderson & Andrew Constantinou B.App.Sc ARACI] - BOSTIK

This session looks at the most commonly used materials for repairing damaged concrete namely epoxies and polymer modified cement based materials. This session will discuss the principles behind how these products work, including correct mixing of product and hardener (in the case of epoxies), crack injection, low viscosity vs high viscosity products, self-levelling compounds etc. The session will be capped off by a practical demonstration of their usage in the seminar room.

DEMONSTRATIONS

- (1) Epoxy Crack Injection – including Polyurethanes
- (2) Epoxy Binder –unfilled, exothermic measures, various fill levels, pastes and adhesives, trowelled and screeded
- (3) Fast set Concrete repair (for roads and kerbs)
- (4) Slower curing, high builds for overhead concrete repair
- (5) Pourable Self-Leveling compound over rough surface - Underlay & Overlay condition
- (6) Trowelable surface repairs over rough surface
- (7) Gravity feed Class C structural grout application
- (8) Pump assisted Class A grout applications under water

3.00 – 3.30 Afternoon Tea

3.30 – 4.00 **SESSION 6 Carbonation of Concrete & Corrosion Inhibitors** [Miljan Gutovic BE Civil Ph.D (Eng)] - SIKA

This session will explain the process of Carbonation and its effects on concrete both reinforced and unreinforced. The session will address topics such as dry film thickness, water vapour diffusion resistance re equivalent air layer thickness (Sd), diffusion resistance factor μ and then CO2 diffusion resistance re equivalent air layer thickness (R) and diffusion resistance factor μ_{CO2} . The practical applications of products in combating carbonation and where such products have been used will finish off this segment.

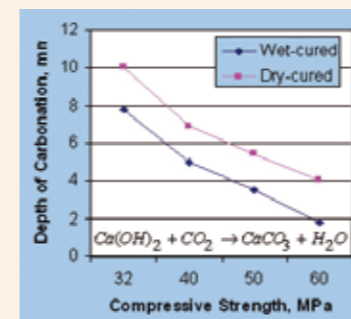
4.00 – 4.30 **SESSION 7 Cathodic Protection & Repair specifications - Consulting engineer case studies** [Grahame Vile BE ME] - REMEDIA

This session looks at the critical parameters in a repair specification. What makes a good specification (and what doesn't). When does a repair specification relate the most important elements to a contractor? When is a specification too theoretical? What's important and what's not? What do some of the repair terms mean? What key tests should be specified in a practical repair specification? Real cases will be addressed. Cathodic Protection and other electrochemical methods will be discussed.

4.30 – 5.00 **SESSION 8 Zinc Based Corrosion Protection** [Peter Battista B.Sc (Hons)] - PARCHEM

This session looks at specialised products used by industry to minimise the likelihood of steel corrosion by means of zinc based electro chemical means. This session will discuss the principles behind how they work, results from testing these materials, practical examples of where they have been used. This system was developed in conjunction with Aston University in the UK and provides a cost effective alternative to cathodic protection systems and migrating corrosion inhibitors.

5.00 – 5.15 Certificate of Attendance and Feedback sheets.



VENUE

- * Sydney Stamford Grand cnr Herring & Epping Rd, North Ryde NSW (02) 9888-1077
- * Brisbane Mercure Hotel, cnr Ann & Nth Quay, Brisbane QLD (07) 3237-2300
- * Melbourne Hotel Grand Chancellor, 131 Lonsdale Street, Melbourne VIC (03) 9656-4000
- * Perth TBA

REGISTRATION

Please return to:
Cement & Concrete Services (Attn : Joanne)
Concrete Repair & Protection Course
PO Box 913 Baulkham Hills NSW 1755
Ph 02 9899 7447 Fax 02-9899 5995 Mobile 0413 998 031
Email info@cementandconcrete.com

I/We wish to attend the **Concrete Repair & Protection Course** at tick

- Brisbane (QLD) Wed 14 April 2010
- Sydney (NSW) Thurs 13 May 2010
- Melbourne (VIC) Tues 22 June 2010

	Number		Total
One Day Course	<input type="text"/>	@ \$400	<input type="text"/>
Guide to Concrete Repair & Protection Book	<input type="text"/>	@ \$80	<input type="text"/>

Total Payment Cheque \$

[Cheques payable to 'Cement & Concrete Services' note GST already included]

Name

Name

Company

Street / PO Box

Suburb Postcode

Ph () Fax ()

Email

Person Handling Payment (please print)

VISA M.CARD AMEX 4 DIGIT ID#

Cardholders Name

Expiry Date / Signature

NB A 20% processing fee applies to registration cancellations made earlier than 5 working days before the course date. Cancellations made 5 working days or less incur forfeiture of the entire registration fee. No discounts apply.