

# CEMENT & CONCRETE SERVICES

www.cementandconcrete.com

ABN 27 830 322 080



Present the following course in NSW, VIC & QLD in 2012

## 1. CEMENT AND CONCRETE TECHNOLOGY & PRACTICE COURSE

### State Course Sponsors

- |                                  |  |
|----------------------------------|--|
| • Boral Cement (NSW & VIC)       | <a href="http://www.boralcement.com.au">www.boralcement.com.au</a>             |
| • Independent Cement (NSW & VIC) | <a href="http://www.independentcement.com.au">www.independentcement.com.au</a> |
| • Hanson Precast (NSW only)      | <a href="http://www.hansonpc.biz">www.hansonpc.biz</a>                         |

### Annual Sponsors for Cement & Concrete courses

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|--|--|
| • Ancon Building Products                        | <a href="http://www.ancon.com.au">www.ancon.com.au</a>                                       |
| • ARC - The Australian Reinforcing Company       | <a href="http://www.arcreo.com.au">www.arcreo.com.au</a>                                     |
| • BASF - The Chemical Company                    | <a href="http://www.basf-cc.com.au">www.basf-cc.com.au</a>                                   |
| • Bostik Australia                               | <a href="http://www.bostik.com.au">www.bostik.com.au</a>                                     |
| • CSR Hebel                                      | <a href="http://www.hebelaustralia.com.au">www.hebelaustralia.com.au</a>                     |
| • Danley Systems                                 | <a href="http://www.danley.com.au">www.danley.com.au</a>                                     |
| • Dry-Treat Pty Ltd                              | <a href="http://www.drytreat.com">www.drytreat.com</a>                                       |
| • Engineered Wood Products Assoc of Australasia  | <a href="http://www.ewp.asn.au">www.ewp.asn.au</a>   |
| • Hitech Industrial Services                     | <a href="http://www.hitechindustrialservices.com.au">www.hitechindustrialservices.com.au</a> |
| • Humes  | <a href="http://www.humes.com.au">www.humes.com.au</a>                                       |
| • Parchem Construction Supplies                  | <a href="http://www.parchem.com.au">www.parchem.com.au</a>                                   |
| • PERI Australia (formwork)                      | <a href="http://www.periaus.com.au">www.periaus.com.au</a>                                   |
| • Prestressed Concrete Design Consultants (RAPT) | <a href="http://www.raptsoftware.com">www.raptsoftware.com</a>                               |
| • Reid Construction Systems                      | <a href="http://www.reid.com.au">www.reid.com.au</a>   |
| • Sika Australia Pty Ltd                         | <a href="http://www.sika.com.au">www.sika.com.au</a>   |
| • Xypex Australia                                | <a href="http://www.xypex.com.au">www.xypex.com.au</a>                                       |



## ANNUAL SPONSORS



# CEMENT & CONCRETE TECHNOLOGY & PRACTICE COURSE



## SPEAKER: PAUL UNO

Previously  
 - NSW Senior Engineer (Cement & Concrete Association of Australia CCAA)  
 - NSW Technical Manager (CSR Readymix - now Holcim)  
 - Materials Engineer (Boral)



## DAY 1

8.30 - 9.00 am Registration

### 9.00 - 10.30 Session 1 - CEMENT AND CONCRETE - THE MATERIALS

Introduction to cement types (portland, blended, low heat, high early strength, low shrinkage, sulfate resistant, off-white, white, high alumina cements, Geopolymers), aggregates (fine/coarse), manufactured sands, water, supplementary cementitious materials (slag, flyash, silica fume), pozzolanic reactions, Green Star Rating and Sustainability.

10.30 - 11.00 Morning Tea

### 11.00 - 12.30 Session 2 - ADMIXTURES & MIX DESIGN

The first session deals with the basic introduction to standard admixtures such as accelerators, retarders, water-reducers, superplasticisers, air entrainers, waterproofer, Corrosion Inhibitors.

The second session addresses the basic introduction to mix design addressing aspects such as strength vs durability, w/c ratio, aggregate grading, ACI vs British Method.

12.30 - 1.30 LUNCH ~ (Provided at venue)

### 1.30 - 3.00 Session 3 - CONCRETE & REINFORCEMENT PROPERTIES

The first session deals with the basic introduction to concrete properties. Aspects such as water to cement ratio effects, workability and stiffness, air content, heat of hydration, setting time, shrinkage, strength development as a function of time (concrete maturity) and temperature, bleeding, permeability and porosity.

The second session addresses the basic introduction to steel reinforcement properties e.g. yield, bond and anchorage, bars vs mesh, metal vs plastic bar chairs, detailing, prestressing. The issues of using 500 MPa steel bars and steel mesh with regards to ductility and size will be addressed. Use of plastic and steel fibres will also be covered.

3.00 - 3.30 Afternoon Tea

### 3.30 - 5.00 Session 4 - CONCRETING ON SITE

Transporting, placing, compacting, finishing and curing concrete on site. Aspects addressed include truck sizes, time limits for delivery, site access, delivery rate, pumping, avoidance of segregation, vibration, screeding, floating by hand and by machine, curing methods and curing agents and slip resistance.



## DAY 2

9.00 - 10.30 Session 5 - TESTING

This session will deal with testing of cement and concrete materials, fresh concrete and hardened concrete (including core tests). Tests such as VPV, permeability and consistency tests such as vertical slump and horizontal slump (or spread/flow) in line with the J ring test for self compacting concretes will be covered. Standard tests such as compression, indirect tension, flex, shrinkage, creep, and impact rebound testing (Schmidt hammer) will also be addressed.

10.30 - 11.00 Morning Tea

### 11.00 - 12.30 Session 6 - DURABILITY & CRACKS IN CONCRETE

The first session deals with durability aspects of concrete including abrasion, cover to reinforcement, concrete strength, carbonation, chloride penetration, concrete cancer, exposure environment, freeze-thaw conditions, salt attack.

The second session addresses cracks in concrete. Aspects such as hot weather concreting, plastic shrinkage, plastic settlement, thermal cracking, building restraint, inadequate reinforcement are covered. Methods of crack identification and minimisation of cracking such as curing compounds, use of fibres (polypropylene and steel) and calculation of bleed water evaporation rates from concrete surfaces are all addressed. Joint design is also addressed including the various types of dowels used in the marketplace ie round vs square vs flat vs diamond.

12.30 - 1.30 LUNCH ~ (Provided at venue)

### 1.30 - 3.00 Session 7 - CONCRETE FOR INDUSTRIAL APPLICATIONS

This session deals with topics such as high strength and high performance concrete, formwork finishes (class 1 to 5) and colour control to AS3610, formwork systems in high rise construction, rendering high strength concrete, precast concrete and tilt up construction, concrete industrial floors and pavements.

3.00 - 3.30 Afternoon Tea

### 3.30 - 5.00 Session 8 - CONCRETE IN RESIDENTIAL CONSTRUCTION

This session deals with topics such as residential slabs and footings to AS2870-2011, crack width and termite ingress, waffle pod slabs, cement rendering, brick mortars and the effect of air entrainers, shotcreting, steel bar vs fibre sprayed concrete pools, stencilled and stamped concrete, artificial rock making, colouring concrete using oxides.

### 5.00 - 5.15 Certificate of Attendance and Feedback sheets.

Event Sponsors: NSW & VIC

NSW Only



## FEEDBACK SHEET COMMENTS

- NSW – Boral Concrete - Wayne Dungey  
*"Very comprehensive course – showed a lot of situations which I could relate to"*
- NSW – Grace Aust - Hugh Knox  
*"Covered a wide range on concrete and cement"*
- NSW – Parchem – Brett Kenny  
*"Very informative"*
- ACT – Pierre Dragh Consulting Engineers – Jing Zhang  
*"Good refresher from University also learnt more new stuff"*
- QLD – Powerlink – Andrew Carrigg  
*"Paul is incredibly knowledgeable and is a fantastic presenter. Interesting and educational course"*
- QLD – GM Poles – Anthony Swincer  
*"Very practical – great background"*
- QLD – GHD – Katie Fletcher  
*"Liked the real world examples"*
- VIC – Boral Cement – Evan Pryke  
*"Very in depth course; knowledgeable presenter"*
- VIC – Vic Mix Concrete – Michael De Luca  
*"Covered all relevant topics of premixed concrete"*
- VIC – Dept of Defence – Robert Haynes  
*"Good balance between theory and practical application; enthusiastic presenter"*
- WA – BGC Cement – Lindsay McGregor  
*"Very informative and presented in great detail"*
- WA – Thiess – Peter Hair  
*"Good broad coverage, covered all aspects of concrete, well informed presenter, lots of photos"*
- WA – Holcim Concrete – David Fox  
*"Very informative and enjoyed it"*

## VENUES

- \* Sydney **Day 1 - Stamford Grand**, cnr Herring & Epping Rd, North Ryde NSW (02) 9888-1077  
**Day 2 - Boral Laboratory**, 3-5 Gibbon Rd Baulkham Hills NSW (02) 9624-9900
- \* Brisbane Holiday Inn, 159 Roma St, Brisbane QLD (07) 3238-2222
- \* Melbourne Hotel Grand Chancellor, 131 Lonsdale Street, Melbourne VIC (03) 9656-4000
- \* Perth Comfort Inn Wentworth Plaza. 300 Murray St, Perth WA (08) 9338 5000

## REGISTRATION FORM

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

### I / We wish to attend the CEMENT & CONCRETE TECHNOLOGY AND PRACTICE COURSE at:

- Sydney NSW Wed 11 - Thu 12 April 2012  tick
- Brisbane QLD Mon 16 - Tue 17 April 2012
- Perth WA Mon 10 - Tue 11 September 2012
- Sydney NSW Mon 15 - Tue 16 October 2012
- Melbourne VIC Wed 31 - Thu 1 November 2012

Number  Total   
 Two Day Workshop @ \$ 880   
 (Includes Handouts & Meals)

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: Cancellations made more than 5 working days prior to a course will incur a 20% processing fee of the full registration amount. Cancellations made 5 working days or less will incur forfeiture of the full registration fee.

