



ONE DAY SCI TRAINING COURSE ON REPAIR MATERIALS AND METHODS

All Buildings, infrastructures may require periodical repair, retrofitting during their service life. With aging infrastructure, cost of repair is increasing and more attention to repair materials and methods is required. SCI would like to invite industry players to attend this training course.

** Pending PDU, RE/RTO points

Program:

9:00 to 10 am	Registration and Refreshment
10:00 am to 10:15 am	SCI Opening Speech
10:15 am to 12:15 pm	Design, Specification and Selection of Post Installed Anchors
12:15 pm to 1:15 pm	Networking Lunch Break
1:15 pm to 3:15 pm	Cracking in Concrete and Repairs
3:15 pm to 3:45 pm	Networking Tea Break
3:45 pm to 5:45 pm	Calcium Aluminate Cement Technologies in Concrete Repair Application
5:45 pm to 6 pm	Q&A , Closing

Training sessions are as follows:

Title: Design, Specification and Selection of Post Installed Anchors

Gary Connah

Group Technical Manager, Halfen Moment, Singapore,
Email: gary.connah@halfen-momen.com



Abstract:

The use of post installed anchors is becoming commonplace in both new build and repair/ renovation projects. In the case of new build, the contractor likes them, despite the risks of hitting reinforcing bar, as they do not require any prior planning. In repair/ renovation projects, there are less alternatives available as the concrete has already been cast. The biggest growth segment in the repair and renovation field is that of chemical anchoring or resin bonded anchors as they facilitate the installation of either metric threaded rods for attaching steel plates or reinforcing bars for casting concrete extensions.

This presentation outlines the 2 different design methods globally recognised to determine the design resistances of post installed anchors



DATE: 6th OCTOBER 2017
TIME: 9 am to 6 pm

VENUE:
Singapore Polytechnic,LT4A

FEE (NO GST Required)
SCI MEMBERS: S\$ 180
Non Members: S\$ 200

TARGET AUDIENCES

Professional Engineers
Design Engineers
Repair Consultants
Builders
Researchers
Facility Managers
Repair Contractors

REGISTRATION

Contact: Ms Edina Koh
Email: scinst@scinst.org.sg
Tel: 6552 0674

Lunch, refreshment and Tea break is provided

Supported by:



together with guidance on robust specification and selection. The design methods are in line with Eurocode requirements and cover “fitness for use”, “prequalification” and “conformity assessment”. It refers to the following published documents as reference:

- SS EN 1992 - Eurocode 2: Design of concrete structures - Part 1-1: General rules and rules for buildings (Including Singapore National Annex)
- CEN/TS 1992 – Design of fastenings for use in concrete – Part 4-1: General
- SA TS 101 – Technical Specification – Design of post-installed and cast-in fastenings for use in concrete
- BS 8539 - Code of practice for the selection and installation of post-installed anchors in concrete and masonry
- ETAG 001 - Guideline For European Technical Approval Of Metal Anchors For Use In Concrete
- TR 029 – Design of Bonded Anchors

Even chemical anchors have been available in the market since first launched in 1962; but somehow, the design and common understanding of this relatively old technology, still varies significantly. By studying the above documents, you can start to see some level of harmonization coming in to place globally.

About Speaker:

Gary Connah is a Chartered Professional Engineer and currently holds the position of Technical and Development Manager of CRH CA Asia, based in Singapore. He graduated from Loughborough University in the UK in 1996 and has gained extensive experience in mechanical splices as well as post installed and cast in anchor solutions in Europe, Asia and Australasia. As the ex-chair of the Construction Fixings Association in UK, he actively contributed to current anchor Approval guidelines in Europe and until recently held the position of Chair of the AEFAC technical committee; an industry initiative seeking to enhance the specification, selection, design and installation of structural anchors and fasteners in the Australian construction industry.

Title: Cracking in Concrete and Repairs

Fong Weng Khiong

Director, Ascent Materials Consultants
Pte Ltd, Singapore
Email : fongwk.ascent@gmail.com



Abstract:

Cracking of concrete due to reinforcement corrosion is common in coastal structures where chlorides in sea-water lead to the initiation and subsequent propagation of corrosion of the steel. Other causes of cracking of concrete such as plastic cracking, thermal cracking, and cracking arising from the presence of alkali-silica-reactive aggregates is



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also discussed in this training. Methods of concrete repair will be covered based on the principles given in BS EN 1504. The methods of concrete repair and rehabilitation is highlighted in a jetty terminal project. The following references are referred to:

- (1) Non-structural cracks in concrete. Report of a Working Party. London, The Concrete Society UK. Technical Report No. 22.
- (2) CIRIA C660. Early age thermal crack control in concrete.
- (3) BS EN 1504. Products and Systems for the Protection and Repair of Concrete Structures.

About Speaker:

Fong Weng Khiong is a Director of a consultancy firm, Ascent Facilities Engineering Pte Ltd and Ascent Materials Consultants Pte Ltd, specializing in inspection, appraisal and remedial measures of structures. Prior to setting up the company in 2004, he worked as a graduate engineer from 1991 to become the Singapore office manager of Taywood Engineering Ltd (UK) in 2000. He was Head of Department, Building Performance, at SETSCO Services Pte Ltd, from 2000 to 2004. He has inspected more than 200 projects to date, dealing with problems in new construction as well as existing structures affected by deterioration. His expertise is in assessment of deteriorated concrete structures, prediction of the onset of corrosion, mitigating and providing repair proposals.

Title: Calcium Aluminate Cement Technologies in Concrete Repair Application

Chen HongFang

Regional Technical Developer
(Building Chemistry), Kerneos Asia Pacific
Singapore,
Email: hongfang.chen@kerneos.com



Abstract:

We have seen an increase in the use of calcium aluminate cement in different applications. With the key functions of fast-set, rapid hardening, early strength and quick self-drying, CAC's have always found their way to stand out from a wide range of concrete repair works, for example, rapid repair of road, bridge, airport taxiway, fuel loading bay and cold room etc. Its resistance of biological attack is demonstrated by an excellent choice for the sewerage pipe and manhole rehabilitation, especially in warm climate.

This presentation covers the fundamental mechanism of calcium aluminate cement technology and its application in repair works.



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About Speaker:

Chen HongFang is regional technical developer of Kerneos Asia Pacific for building chemistry market. She received her Bachelor’s degree in Silicate from Tongji University in 1991 and Master’s degree in Materials Science and Engineering from National University of Singapore in 2002. She has been working in cement and concrete industry for more than twenty years. She gained her experience by working in Shanghai Tunneling, SESTCO and W R Grace. The current job function allows her to travel around SEA, South Korea and Taiwan to introduce calcium aluminate cement technology for the product development.



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Registration & Payment:

Registration is confirmed upon payment.
Cheque should be crossed and made payable to **“Singapore Concrete Institute”**
and mail it together with your completed registration form to:
Block 342 Ang Mo Kio Ave 1 #03-1563 Singapore 560342.
**** Closing Date : 30th September 2017**

Name of Participant	Membership No.
Payment Mode :-	
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Amount : S\$ _____	
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