**Seminar On Dry-Mix Mortar Technology In Modern Architecture And Engineering Practices**

*Sustainable Building Technology – The Hidden World Unveiled*

<table>
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<th>Introduction</th>
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<td>Dry mortar is one of the most widely used construction materials but it is also one of the least explored.</td>
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<td>Examples of materials that fall under Dry Mortar family includes plaster, skim coat, tile adhesives, waterproofed screed, colour tile grouts, non-shrink grouts, high strength grouts etc etc.</td>
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<td>Today, the applications of dry mortar are getting increasingly varied and exciting due to the need to adapt to today’s innovative building technologies, the Green initiatives and of course the pursuit towards better productivity.</td>
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<td>Through this seminar we shall showcase the hidden world of dry mortar and share the latest global trends with fellow practitioners in the industry.</td>
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<th>Programme Details</th>
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| **3 CPD Points** |
| **5 PDU Points** |

**COMMON ISSUES**
- Tiles Pop-Up
- Plaster Crack

**Use of Dry Mortar**
- Sustainability
- Productivity
- Green

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<th>Time</th>
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<tr>
<td>12:00</td>
<td>Registration</td>
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<tr>
<td>13:00</td>
<td><strong>Welcome Speech</strong>&lt;br&gt;SIA President; Mr. Theodore Chan&lt;br&gt;ACES President; ER. Koh Boon Liang</td>
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<td>13:20</td>
<td><strong>LCS Optiroc - Company Introduction</strong>&lt;br&gt;Mr. Chong Choong Fee, Managing Director, LCS Optiroc Pte Ltd&lt;br&gt;Past President (2010 – 2011) – South East Asia Dry-Mix Mortar Association (SEADMA)</td>
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<td>13:40</td>
<td><strong>AkzoNobel - Company Introduction</strong>&lt;br&gt;Mr. Sumitro Wijaya, Business Manager, Performance Additives Asia Pacific; AkzoNobel, Switzerland</td>
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<td>14:00</td>
<td><strong>The Role of Tile Adhesives and Grout Mortars to Withstand Daily and Seasonal Thermal Cycles</strong>&lt;br&gt;Dr. Roger Zurbriggen, Senior Research Scientist, Performance Additives, AkzoNobel, Switzerland</td>
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<td>14:30</td>
<td><strong>Common Issues Faced with Tile Adhesives &amp; Construction Grouts</strong>&lt;br&gt;Ms. Sorada Jingjid, Technical Manager, LCS Optiroc Pte Ltd, Singapore&lt;br&gt;Mr. Martyn Chew, Technical Sales Manager, LCS Optiroc Pte Ltd, Singapore</td>
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<td>15:00</td>
<td><strong>Redispersible Polymer Powder and Cellulose Ethers functionality in Dry-Mix Mortar Applications</strong>&lt;br&gt;Mr. Tan Boon Teck, New Business Development Manager, Performance Additives Asia Pacific, AkzoNobel, Switzerland</td>
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<td>15:30</td>
<td>Tea Break</td>
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<td>15:50</td>
<td><strong>Bricor Color Mortar - New Generation Cement Based Color Mortar</strong>&lt;br&gt;Ms. Sonia Shi, Technical Manager, Performance Additives Asia Pacific, AkzoNobel, Switzerland</td>
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<td>16:20</td>
<td><strong>Dry-Mix: A Green Solution to Construction Industries</strong>&lt;br&gt;Dr. Vernon Wang, Commercial Manager, Performance Additives Asia Pacific, AkzoNobel, Switzerland</td>
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<td>16:50</td>
<td><strong>Dry-Mix Mortar Testing Procedures</strong>&lt;br&gt;Mr. Tan Hong Kian, Manager, Construction Materials Testing Department, Setsco Services Pte Ltd., Singapore</td>
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<td>17:20</td>
<td><strong>Dry-Mix Mortar Plants &amp; Equipments</strong>&lt;br&gt;Mr. Rudi Muigg, BE, Global Sales Manager, Doubrava Industrial Plants, Austria</td>
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<td>17:50</td>
<td>Q &amp; A Session</td>
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<td>18:30</td>
<td>Networking and Buffet Dinner</td>
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The Role of Tile Adhesives and Grout Mortars to Withstand Daily and Seasonal Thermal Cycles

In many climate zones, externally applied building materials are exposed to temperature changes in the order of 40°C. Especially facade or flooring composite-systems with layers of different materials undergo thermal stresses at their adhesive interfaces.

This study investigates thermally induced tensile stresses in ceramic tilings. Daily and seasonal thermal cycles, as well as, rare but extreme events, such as a hail storm striking a warmed up terrace tiling, were (i) studied in the field and (ii) numerically modeled.

But, if additional loads (e.g. substrate shrinkage) or a weakening of the adhesion strength (e.g. by a strong skin formation) meets strong thermal stresses, then micro-cracks may form. Therefore, lowering elastic moduli of the adhesive and grouting mortars by adding polymers is an approach to reduce tensile and shear stresses at the material interfaces.

Common Issues Faced with Tile Adhesives & Construction Grouts

The common issues faced with the application of Dry-Mortar materials like Tile Adhesives and Construction Grouts can pose a major challenge to end-users who are not familiar with its applications. The key focal points of the presentation emphasises on application properties like cleaning time, adhesion resistance, water absorption and flexural & compressive strengths and performance standards.

Good practices and solutions addressing some of the common issues in the application of Dry-Mix Mortar materials will be featured.

Redisperisible Polymer Powder and Cellulose Ethers functionality in Dry-Mortar Applications

Redisperisible Powder (RP) and Cellulose Ether (CE) are two standard additives for ceramic tile adhesives to improve (a) the performance with respect to workability and water retention (mainly given by CE) of the fresh paste, as well as (b) final strength and flexibility properties of the hardened mortar (mainly improved by RP).

The data resulting from the distribution diagrams of different formulations will be compared with their physical properties (e.g. adhesion strength). The quantitative distribution pattern of an additive is one key to understand its performance in the application including the influence on the final mechanical properties of the mortar

Elotex Bricor Color Mortar - New Generation Cement based Color Mortar

Efflorescence and color variation are two common phenomena of cement based color mortar. This paper examines how inorganic binder and polymer powder interactive to efflorescence and color consistency for cement-based color mortar. The results reveal a new generation of Bricor Color Mortar which is based on a unique polymer powder - Elotex BRICOR800 and special inorganic binder system has excellent anti-efflorescence property and color consistency.

Dry-Mortar: A Green Solution to Construction Industries

Cement industry is notorious for its CO2 emission and high energy consumption, which is highly suspected as one of the root cause of global warming threaten. However, cement still strongly stands on the irreplaceable position in construction materials and construction industries.

Dry-mortar is a very effective way to reduce using cement in varies construction applications while still keeping the excellent cementitious material functions and even getting improvements.

By reducing cement usage, improving cement efficient, contribute to building energy saving, using gypsum instead of cement, dry-mix industries contribute to the CO2 emission reduction and saving our environments.

Dry-Mortar Testing Methods & Specifications

The various testing methods and specifications used in the testing of Dry-Mortar materials in Singapore will be featured.

Introduction of Modern Dry-Mix Mortar Plant Designs

Introduction of Modern Environmental Friendly Dry-Mix Mortar Plant embracing Sustainable Production Technology in the production of Dry-Mix Mortar materials in an environmental friendly environment
Dr. Roger Zurbriggen

Senior Research Scientist, Building and Construction, Performance Additives, Functional Chemicals, AkzoNobel, Sempach, Switzerland. Dr. Roger Zurbriggen graduated from the University of Bern (Switzerland) in 1992 with a Masters Diploma in Mineralogy and got his PhD in 1996 with major in Structural Geology. Dr. Zurbriggen joined Eilotex (former National Starch which merged with AkzoNobel in 2008) in 1997, as a member of the Material Science Group (R&D). During this period Dr Zurbriggen supervised a series of key research projects. His focal points of Research and Analytics includes: Physico-chemical interaction mechanisms between polymers and cement; Structure-property relationships of polymer-modified dry mortars (renders, tile adhesives, self-leveling flooring compounds); Optical and electron microscopy, thermal analysis, stress-strain analysis.

Ms. Sorada Jingid

Technical Manager, Product Development, R&D and QA/QC, LCS Optiroc Pte Ltd, Singapore. Ms Sorada Jingid graduated from Sirirakharinwiroth University, Bangkok, in 2003 with a Bachelor's degree in Chemical Engineering. In 2006, Ms Sorada received her Master's degree in Chemical Engineering from Chulalongkorn University, Bangkok. In 2006, Ms Sorada joined the Saint Gobain Weber Group (a major global dry- mix mortar group in Europe) in Thailand as a R&D engineer. She was promoted to Assistant Manager R&D and QC in 2009 with key focus in new product research and development in Dry- Mix Mortar materials. Ms Sorada is presently the Technical Manager with LCS Optiroc Pte Ltd, Singapore.

Mr. Martyn Chew

Technical Sales Manager, LCS Optiroc Pte Ltd, Singapore. Mr Martyn Chew graduated from Singapore Polytechnic in 1989 with a Diploma in Chemical Process Technology. In 1995 he graduated from Murdoch University, Australia with a Bachelor's Degree in Marketing. He had worked 17 years in the chemical related industries, including construction, electronics, marine, paint & coating and other industrial chemicals. Martyn is presently the Technical Sales Manager in LCS Optiroc Pte Ltd, Singapore providing on-site technical support and sales marketing to various project including HDB, private residential and industrial developments.

Mr. Tan Boon Teck

New Business Development Manager, Asia Pacific, Performance additives. Mr Tan graduated from National University of Singapore with major in Chemistry in 1993 and in the later part of his career, he obtained a Master of Science Degree for management of Technology from National University of Singapore. Throughout his career, he had held various positions in the building and construction field such as R&D, product development, Sales and Marketing position both in local and MNC companies. Mr Tan joined AkzoNobel in 2001 as a Technical Sales Manager and is now the New Business Development Manager for Asia Pacific, Performance additives sBU, AkzoNobel.

Ms. Sonia Shi

Technical Manager, Building and Construction, Asia Pacific Region, Performance Additives, Functional Chemicals, AkzoNobel, Shanghai, China. Ms Sonia Shi graduated from Wuhan Industry University in 1999. She completed her Masters degree in Material Science in 2002. Soon after graduation, Ms Shi joined the Insulation industry as a R&D engineer. She was instrumental in the development of foam cement insulation material and polymer modified cement mortar for ETICS. Ms Shi joined Elotex as Technical Service Representative in 2002. Ms Shi has accumulated many years of experience in ETICS, CTA, Skim Coat and Cement based Color Mortar during her tenure of employment with different Companies. She had also participated in the edition of many Chinese dry mortar standards in China over the last few years.

Dr. Vernon, Wang Chunjii

Commercial Manager, Building and Construction, Asia Pacific Region, Performance Additives, Functional Chemicals, AkzoNobel, Shanghai, China. Dr. Wang graduated from Tsinghua University in 1985 majoring in Chemical Engineering. He accumulated his academy experience in Beijing University of Chemical Technology as Associate Professor and Deputy Dean in Industrial Management Department for eight years. Dr. Wang moved to the industrial sector and took on different roles and positions in Sales, Marketing, Technical, R&D and Commercial with companies like BASF, Rhodia, Rom & Haas, and is presently a senior manager at the AkzoNobel group. His work in the different industries focused mainly on construction materials; including polymer latex synthesis and applications on Waterproofing, mortar modification, adhesives, and Dry-mix mortars, etc.

Mr. Tan Hong Kian

Manager, Setsco Services Pte Ltd, Singapore. Mr. Tan Hong Kian graduated from the Nanyang Technology University of Singapore majoring in Civil and Structural Engineering. Mr. Tan is involved in the testing, evaluation and consultancy works of building and construction material in the building and construction industry. He is also a SAC Singlas approved signatory.

Mr Rudi Muigg

Global Sales Manager, Dry-Mix Mortar Plants & Equipment. Mr Rudi Muigg graduated from the Institute of Technology Steyr, Austria majoring in Engineering. Mr. Muigg had worked in various industries like batching plants, mining, glass and automotive. He joined Doubra, Austria in 1993 specialising in the design, construction and installation of Dry-Mix Mortar plants and equipment around the world.
**Registration Form**

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<td><strong>All seminar fees are inclusive of GST.</strong></td>
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<td><strong>Seminar will include seminar materials, light refreshment and Dinner</strong></td>
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**For SIA members, and Non SIA members/Architects**, please fax / email the completed registration form to Ms Jacey Tay:  
Tel: (65) 6226 2668  
Fax: (65) 6226 2663  
Email: cpd@sia.org.sg  
And follow up with cheque / cash / online payment only to “Singapore Institute of Architects”. Registration closed on **19 October 2012**.  

[ ] By Cheque to SIA  
Bank/Cheq # : ______________________  
Local Cheque (must be drawn in Singapore) should be crossed and made payable to “Singapore Institute of Architects”.  
SIA office: Singapore Institute of Architects 79B Neil Road, Singapore 088904  
Please indicate your name, company/institution and course date/title on the back of the cheque.  

[ ] By Online Payment to SIA  
(It is mandatory to provide us with the Receipt ID # after your credit card payment transaction)  
Receipt ID #: ____________________________________________________________  

[ ] By Cash to SIA  
You can drop by the SIA office to make cash payment between 9:30am – 5:30pm on weekdays.  

**For ACES members, and Non ACES members/Engineers**, please fax / email the completed registration form to Ms Lilian or Ms Jennifer:  
Tel: (65) 63242682  
Fax: (65) 63242581  
Email: secretariat@aces.org.sg  
And follow up with cheque / cash to “Association of Consulting Engineers Singapore”. Registration closed on **19 October 2012**.  

Cheque No. / Amount: ______________________, Mailing Address: Thomson Road Post Office, PO Box 034, Singapore 915702.  

**Participant Detail**  
Name of Participant: ______________________  
NRIC / FIN #: ______________________  
(as per NRIC / FIN)  
Organization: ______________________  
Designation: ______________________  
Receipt Mail to: ____________________________________________ S ( )  
Tel: ______________________  
Fax: ______________________  
Email: ______________________  
HP: ______________________  
Pls indicate: Complimentary [ ] SIA member,  
SIA M’ship #: ______________  
BOA #: ______________  
Complimentary [ ] ACES member,  
ACES M’ship #: ______________  
PE #: ______________ (if applicable)  
$45.00 [ ] BOA registered,  
BOA #: ______________  
$45.00 [ ] CUC member,  
Organization: ______________________  
$45.00 [ ] Non member  

**Contact Person Detail**  
(If different from participant)  
Contact Person: ______________________  
Designation: ______________________  
Tel: ______________________  
Fax: ______________________  
Email: ______________________  

For SIA Members whose registrations have been confirmed, attendance is compulsory. Absentee/Cancellations 3 days or less before the event will be charged at $20.00. Verbal notification of cancellation is not acceptable. Cheque payment for this activity should not be combined with payment for other SIA events/courses. Fees paid are non-refundable under all circumstances. Replacement of participant will be allowed only if written notification is made at least 3 days before the event. Where a Non-Member replaces a Member (must be from the same Org.) the fee difference will have to be made good to SIA prior to the event.

Registration Confirmation No.:--