

Short report on IMM's 1-day Coatings Conference on Combatting Coatings Failures



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Venue: Corus Hotel, Kuala Lumpur

IMM's 1-day Coatings Conference on Combatting Coatings Failures was organized on 18th May 2017 at the Corus Hotel, Kuala Lumpur. Twenty students from the Chemistry Fusion Club, Universiti Teknologi MARA (UiTM) Shah Alam attended this event. The panels of experts from industry and academia presented various topics. Professionals have shared their challenges as well as hands-on experiences, thus providing students a glimpse of the real-life working environment in the coatings industry. Students were also exposed to the new coatings technologies, such as the "Mill Certificate" for paint industry. During the break session, students had the opportunity to mingle with players from the coatings industry.

Overall, this event has received positive feedback from the students. Their interest and knowledge in materials sciences and coatings were greatly increased and they would be interested to attend similar events in the future. In a nutshell, Chemistry Fusion Club would like to express their sincere appreciations to IMM for the opportunity to attend this event.



Figure 1: Group photo of 20 students from Chemistry Fusion Club, UiTM Shah Alam



Figure 2: A representative from Norimax explaining to the student about the Thermal Spray Coatings



Figure 3: A Q & A session between representatives from JOTUN with student.

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PCC-501N

Normal Concrete/Stone Capillary Crystalline Waterproof Coating

Description

PCC-501N is a powdery rigid waterproof material with special cement and quartz sand as base, with active chemical materials. When treated on substrate of concrete structure surface, it forms a rigid attachment coating which contains active chemical materials. These active chemical materials permeate in the interior of concrete, via penetrating water, catalysis silicate of concrete to generate water insoluble crystals, fill in capillary pores and tiny fissures to make concrete compact, enhance penetration and waterproofing functions.

When to use

- Underpinning concrete covered site
- Subways and tunnels
- Sewage pipes, water pipes and sewers
- Other pipes, penstocks and walls

Advantages

- Excellent infiltration capacity to penetrate to the concrete surfaces

above 3cm

- Contains various active chemical materials to ensure crystal growth and make concrete compact
- Excellent impermeability of concrete substrate to resist hydraulic pressure above 1.26 meters height for a long time
- Waterproof layer are not affected by acids, can withstand a certain degree of external force
- Durable and high resistance for harmful chemical erosion
- Can be safely used for drinking water constructions without poisonous or harmful materials
- Good bonding ability for no more than 6-4 mm tiny fissures in concrete masonry
- Can brush-depositing materials, such as seal, paint directly on waterproof layer

Standards

GB 18484-2001

Typical properties

Item	Requirement
Impermeability	Pass
	Pass
Setting time	Initial setting time, min ≥ 20
	Final setting time, h ≤ 24
Bending strength, MPa ≥	7 d 2.80
	28 d 5.50
	7 d 12.0
Compressive strength, MPa ≥	7 d 10.0
	28 d 18.0
Bonding strength on wet substrate, MPa ≥	1.0
Resistance to penetration (28 d), MPa ≥	0.6
Second resistance to penetration (56 d), MPa ≥	0.6
Ratio of seepage pressure (28 d), % ≥	250

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Packaging

PCC-501N is sealed in 25kg plastic sacks and transported in wooden cases. Each wooden case can be contained 20 sacks of PCC-501N.

Storage

PCC-501N material should be stored for 1 year at dry and well-ventilated places.

Transportation

PCC-501N is transported according to non-dangerous goods rules.

Application System

- Constructive System

The system is basically consisted of substrate, additional layer and waterproof coated membrane.

PCC-501 Constructive System

• Coverage

1.0-1.2kg per m² gives 0.8-0.8mm thickness. Coverage may vary with the substrate condition during application.

• Application Method

Surface preparation

Surface should be stable, clean, smooth, without obvious water and free from any dust, oil or loose particles. Before painting, surface should be fully wet to make PCC-501N seepage deep into concrete.

Brush constructive method

Mixing ratio: 1kg with approximately 0.25-0.4 kg of water, depending on required consistency. Put water into containers at first, then add PCC-501 powder and mix 5 minutes with machine.

Painting: Use hand brush to paint on the surface equally for 2 or 3 times. It must be painted again after fully dry. If the first painting shows dry and white, surface need to be re-painted.

Spreader-mixer constructive method

Put 1kg powder on each square meter concrete surfaces equally where it is not fully dry, then use spread tool, push it to press powder into concrete and be vibrating until achieve requirements.

Curing

Spraying water, covering wet materials and painting membrane during liquid can be protecting methods. The protection period must more than 72 hours.

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