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Internal Waterproofing for Concrete

Penetron® Industry Newsletter

September 2009

President Obama recently underscored what we have known for decades, that waterproofing concrete from the inside can extend a structure's working life for 20 to 30 years ([click here for full transcription](#)). It is widely known in the concrete industry that waterproofing concrete is done largely by sealing cracks, which are very much a part of concrete life. Penetron products will self-heal cracks in concrete subjected to water pressure throughout its working life and will protect it from corrosion and strength loss, significantly extending the durability of its structural integrity.



Featured in this newsletter is an effective crack sealing test that was recently done at Concremat in Brazil, where Penetron is now a member of IBRACON (The Brazilian Concrete Institute). Further, some very interesting projects completed under [Penetron worldwide](#).

Read on !

 **Penetron® Feature: CONCREMAT REPORT ON PENETRON ADMIX CRACK SEALING ABILITY**

Russia, Moscow-City -
International Business
Center, Moscow

South Africa - Port
Elizabeth – Radisson
Blue Hotel

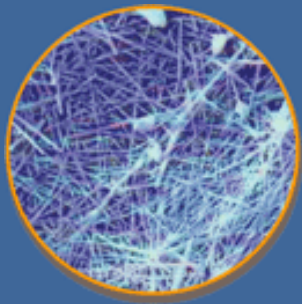
FAST FACTS

Penetron crystals are insoluble and waterproof concrete for the entire life of the structure.



2 identical concrete samples were prepared, one with the addition of 1% Penetron Admix, and the other without Penetron Admix. Each had a perforated PVC tube cast inside, capable of delivering water pressure throughout the samples. Both samples then had artificial cracks induced by applying the same pressure.

The samples were then subjected to a water pressure of 1.5 MPa for eight weeks and the water flow through the cracks was monitored. Following results were obtained:



An intricate web of insoluble crystals forms in the presence of Penetron® and H₂O creating a permanent protective seal



Witness Penetron's crack sealing ability

ACHIEVED RESULTS

CP No.	Age 28 days	1 st period (average result)		2 nd period (average result)		3 rd period	4 th period		5 th period	
		1 st week	1 liter/h	5 th week	0.003 liters/h		After 7 weeks	0.002 liters/h	After 8 weeks	0.002 liters/h
1	With Penetron	1 st week	1 liter/h	5 th week	0.003 liters/h	Interval of one week, without contact with water	After 7 weeks	0.002 liters/h	After 8 weeks	0.002 liters/h
2	With Penetron	1 st week	1 liter/h	5 th week	0.003 liters/h		After 7 weeks	0.002 liters/h	After 8 weeks	0.002 liters/h
3	Without Penetron	1 st week	5 liters/h	5 th week	5 liters/h		-	-	-	-
4	Without Penetron	1 st week	5 liters/h	5 th week	5 liters/h		-	-	-	-

The results indicated that the Penetron Admix treated sample was able to reduce water flow through the cracks from 1 liter per hour during the first week to 0.003 liters per hour after the

5th week. No crack healing was observed on the untreated sample.



Send to a friend or colleague.



Penetron® News: PENETRON becomes member of IBRACON Brazil



We are proud to announce the association of Penetron Brasil LTDA with IBRACON – the Brazilian Concrete Institute. IBRACON was founded in 1972 and has been instrumental in concrete research and development in Brazil. Developments are regularly published in its technical magazine “CONCRETO” and through a wide range of Technical committees as well as its yearly Brazilian Concrete Congress. IBRACON also organises a multitude of concrete seminars, workshops and courses throughout the country.



Penetron® Worldwide:



Australia – AUDI LIGHTHOUSE



Project: AUDI LIGHTHOUSE – 6 Defries Ave. Victoria Park Zetland

Principal Contractor: Southern Cross Constructions

Architect: Johnson Pilton Walker

The flagship Audi Lighthouse is one of the new Terminal-style dealerships being rolled out around Australasia, and will be the world's largest Audi facility. Located adjacent to South Dowling Street in Zetland, the nine-level facility will be Audi's new Australian headquarters. The building will feature 12000 square meters of commercial space, new and used car showrooms, 20-bay service centre and car parking. There were many waterproofing challenges to overcome on this project making the selection of a suitable contractor critical to



the projects success. Some of these challenges included a high watertable, unique building facade, vehicular trafficable areas on all levels and large exposed car park roof decks.

Penetron Australia supplied Penetron Admix for all below grade concrete structures (1200m³) and Penebar SW-45 for all basement construction joints.

 INDIA – Chennai International Airport, Chennai



Airports Authority of India (AAI), the primary organization responsible for development, modernization and upgrading of airport projects in India approved the use of Penetron Admix, Penebar SW45 and other components of the Penetron system for Chennai International Airport Expansion Project. Various products from the Penetron range have been specified for below grade and above grade structures.



After a successful completion of Singapore's CHANGI INTERNATIONAL AIRPORT Terminal 3 and the Warsaw Airport project in Poland, waterproofing of Chennai Airport extension is now underway with Penetron products.

The main contractor for this project is M/s Herve Pomerieau Intl. – CCCL JV and the waterproofing work has been awarded to the local Penetron team in Chennai.

 Russia, Moscow-City - International Business Center, Moscow



the mat foundations of the North Tower.

Moscow-City is the first business center in Russia and Eastern Europe to include space for living and recreation as well. The total area of the center is 10 hectares, including 60 hectares allocated for new buildings. Moscow-City will be one of the largest business centers in the world for multi-use buildings. Penetron Admix was used to waterproof



South Africa - Port Elizabeth – Radisson Blue Hotel



Stunning contemporary architecture, chic urban interiors and breath-taking views over the expansive, sparkling Indian Ocean are what make the Radisson Blu the first choice of stay when visiting pretty Port Elizabeth. Throw in international brand luxury and a refreshing 'Yes, I can!' service spirit... and you have a hotel where deliciously indulgent breaks and one-stop successful meetings are both 100% guaranteed.

Penetron Admix was used for swimming pool construction which forms the canopy to the main Hotel

So accurate was the formwork that tiling was applied directly to concrete without the need for plaster. In effect paying in full for the cost of the Penetron.

Cad drawings were supplied by the local Penetron team for all the construction joint details.

So impressed was the client, Penetron Admix was employed in the roof slab excluding specified bitumen torch on membrane completely and again giving huge savings back on contract.

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