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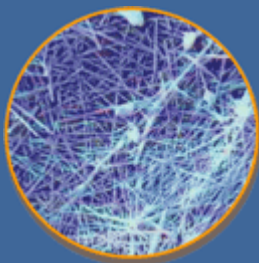
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FAST FACTS

Penetron® Admix is a mature crystalline admixture that has no negative side effects on concrete



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



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Internal Waterproofing for Concrete

Penetron® Industry Newsletter

October 2007

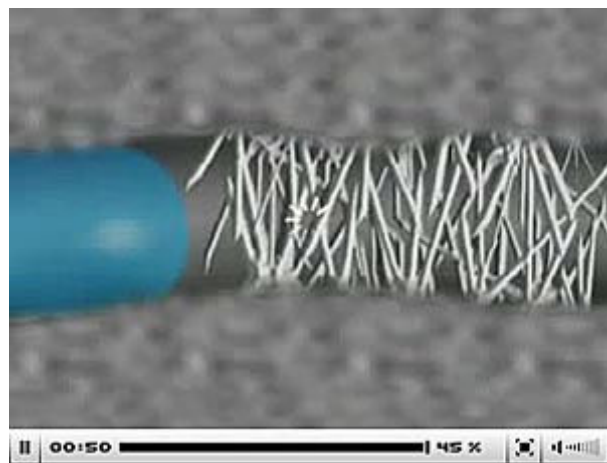
Intro: Setting the standard for a mature crystalline system

For almost three decades, Penetron® has been a leading manufacturer of the finest crystalline concrete waterproofing products. In that time, and through continued market feedback, research and development, our products have matured into highly effective, top performing crystalline waterproofing solutions, which has helped our industry sub-segment to flourish.

So what are the properties that have made the Penetron® system the industry standard?

A good crystalline system like Penetron® is a catalyst, hydrophilic powder, that develops a strong exothermic reaction when mixed with water. It will provide waterproofing protection from the positive AND negative side and its dendritic crystals will Penetrate deeply into the concrete.

[See a 3 minute video of how Penetron® works.](#)



Please click image above to launch video

When used as an admixture, it should not delay the setting time, cause loss of slump or affect design strength of the concrete outside the industry norm tolerances. Delay of setting time and strength problems are associated with first generation crystalline admixtures. Penetron® Admix is a mature product that has none of these detrimental side effects. It does not require a minimum W/C ratio to perform, helps to alleviate Alkali Silica Reactions, self-heals cracks up to 0.4mm and increases the strength of concrete.

Moreover, true crystalline systems are not flexible, as the addition of polymers inhibits crystal growth and reduces the product to a standard polymer modified coating. Penetron® is different from silicates and pore blockers which often have a negative impact on setting time and strength and have no self-healing effect. We recently heard of many problems with systems that claim to compete with Penetron®. When in doubt, the answer is simple, Penetron® does not cause these problems and we can provide plenty of independent comparative data from reputable labs around the globe to that effect.

The long history of Penetron®, the plethora of worldwide test reports and proven performance on countless projects in 65 countries for almost 30 years stands unrivaled in the industry and would-be substitute products should be investigated for the same before use.



Penetron® news: Airport of the future to start operations in January 2008

Singapore Airport's revolutionary Terminal 3 will commence flight operations on 9 January 2008. Penetron® is proud to have worked closely with the project management in order to assure a completely waterproof basement. The entire substructure, 140'000 m3 of concrete,

was waterproofed with Penetron® Admix. [Take a virtual tour of Terminal 3](#) and have a look at the [recommendation letter](#) Penetron® received from CPG Consultants.



Penetron® Worldwide

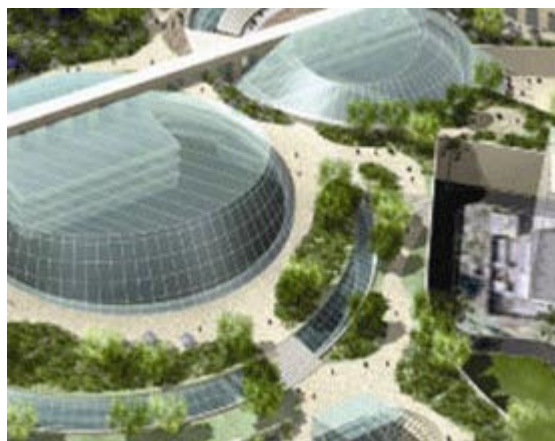
Focus on India

In India, ICS Penetron® operates a network of authorized Penetron® applicators who are spread across the length and breadth of the country. Penetron® has been active in India for nearly a decade and Penetron® Admix was recently tested by the reputable **Sardar Patel College of Engineering** in Mumbai. The test results([click here to view](#)) show again that third-generation-mature-crystalline-admixtures do not affect the concrete in any negative way...

Click on the link for a partial listing of [completed](#) and [ongoing](#) Penetron® projects in India. A few high profile projects that have chosen Penetron® products for their concrete protection needs are highlighted below:

DLF Place, Mumbai

The New Delhi based DLF group is developing a huge shopping mall in Mumbai on land acquired from National Textile Corporation (NTC). The civil contractor for this project is DLF Laing-O-Rourke India Pvt. Ltd. The Penetron® India team and the Penetron® applicator Permotech started working very early on this project. Subsequent to techno-commercial approval and negotiation, the basement waterproofing work for this project has been awarded to Penetron®.



This project has a combination of two and three basements. The total estimated area of the basement raft is 56000 sqm while the retaining wall is 14000 sqm. The basement waterproofing is based upon a combination of Penetron® Plus on the lean concrete (positive side) as dry shake, Penetron® slurry on retaining walls and Penebar SW 45 for the construction joints. Once completed, this project will have 4.6 Million sqft of commercial space comprising of a shopping mall, cinema hall multiplex and an IT park.

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Sofitel Hotel, Mumbai

The International ACCOR group of hotels has tied up with various developers in India for

developing a number of Hotels in all the major cities. ACCOR has plans for 3 of its brands i.e. The IBIS Hotels in the 3 star category, The NOVOTEL hotels in the 4 star Category, while The Sofitel hotel brand in the 5 star category. A total of 150 hotels have been planned in the next 4-5 years.

Within a short time, Penetron® applicator Aqua Seal has become focused on hotel projects. Aqua Seal bagged the IBIS Hotel order for their Mumbai project. This was followed by another order from IBIS Hotel, Pune. After the IBIS hotels at MUMBAI and PUNE, Penetron® was chosen for the Sofitel hotel at Bandra-Kurla Complex in Mumbai. This five star hotel is being jointly developed by ACCOR Group and The Naman Developers Group.

The total estimated area of the basement raft is 7000 sqm while the retaining wall is 3300 sqm. The basement waterproofing is based upon a combination of Penetron® Plus on the lean concrete (positive side) as dry shake and Penetron® slurry on the retaining walls.



City Centre Mall, Kota

Long term Penetron® partner M/s. Choksey Chemicals secured the basement waterproofing works for this shopping mall in Kota, Rajasthan. **City Centre** is the first shopping mall in Kota and is being developed by **ARG Group**, Jaipur.

The work on this project started in September '06 and has been successfully completed.



Subsequent to award of work in the basement, the client also awarded the waterproofing works for water tanks, lift pits and the roof. The total quantity of work executed at this site is over 18000 sqm.

While the work on City Mall was going on, Choksey Chemicals also finalized a **R.K. Leisure Park** order at Vijaywada in South India. This project is a water theme park and thus has a number of water

holding structures to be treated. The total area to be treated on this project is about 15'000 sqm and to date more than 50% has been completed.



Quality and performance stand out in Malaysia

Penetron® Malaysia with its strong technical and marketing team has established extensive recognition of Penetron® system performance. This has led to widespread confidence among consultants and clients, resulting in many project specifications around the country.

After undergoing stringent testing, the Penetron® system was chosen to waterproof the Pantai Sewage treatment plant in Kuala Lumpur. Ongoing projects in Malaysia include Precinct 4 government building at Putrajaya and a water supply plant in Sandakan.



Seri Hening Residence is developed by Great Eastern and constructed by Obayashi Corp. The Project team, RSP Engineers and Obayashi Corp, had chosen the Penetron® waterproofing system to protect the entire basement of the building for its reliability and cost effectiveness. Penetron® applicator WMK Coating has been presented with an [appreciation certificate](#) upon completion of the project for the successful installation of the product and the system's performance.



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