



Innovative Tile and Stone
Installation Systems

ION Orchard Singapore Project Spotlight: September 2010



LOCATION:
ION Orchard and Orchard Residences
Orchard Road, Singapore

CONTRACTOR:
Penta-Ocean Construction Co. Ltd
Singapore

PROJECT ARCHITECT:
RSP Architects Planners and Engineers (Pte) Ltd
Singapore

LATICRETE DISTRIBUTOR:
LATICRETE® Southeast Asia



LATICRETE Roars Along with Singapore Construction in the Orchard

By Eric Carson

When mapping out plans for the construction of a billion dollar mixed-use luxury retail and residential destination as the gateway to one of the most indulgent stretches of road in the world - every decision is critical.

Each detail of the specification must be carefully researched by a team of professionals well-versed in the latest, greatest and greenest technology, and then fulfilled with architectural materials that integrate into the master blueprint as part of the greater vision.

This process and those reasons led to the specification of LATICRETE materials and methods for the installation of all the exterior and interior stone and porcelain tiles for Singapore's new super-luxury retail and residential destination at the threshold of the city-states famed Orchard District. The opening of the futuristic ION Orchard and Orchard Residences in July of 2009 sent the district into another stratosphere with its grand architectural gesture only steps from where Orange Grove Road gives way to the pulsating center of this island country.



Orchard Road, the five-mile heartbeat of Singapore, picks up where Orange Grove Road drops off pulling locals and tourists alike down a one-way tunnel of sensory-jolting glitz and glamour. Already flanked on either side with Vegas bling and Fifth Avenue style, ION Orchard integrates natural stone surfaces installed with a complete system of LATICRETE® products and intense architectural features through next generation materials.

Developed in a joint venture between CapitaLand and Sun Hung Kai Properties, the SGDS\$2 billion (USD\$1.4 billion) lifestyle destination project, manifested with 333 ultra high-end retail shops and 175 super luxury residential units housed in a 56-story tower, now the tallest in the "Orchard."

After establishing a strong local presence in the 1970s during Singapore's first run-in with explosive growth, LATICRETE has remained the supplier of choice as the Lion City booms in the face of a global recession that's claimed more than a few projects

and left untold others in CAD files on BIM. In an effort to meet increased demand with local supply and technical support, LATICRETE made the ultimate commitment to the city-state in recent years with the opening of a new production facility here to anchor the global manufacturer's operations in Southeast Asia.

This as the Asian Tiger has settled into a profitable niche in capital markets and used liberal adjustments in private banking to lure unprecedented wealth and ultimately, spur record attendance by tourists that have come to spend record amounts. The dramatic influx of private wealth and tourists has landed LATICRETE innovation on a growing list of high-profile architectural projects.

At ION Orchard, the modern lifestyle destination concept first springs to life with flexible exterior spaces surfaced with 600mm x 600mm (24" x 24") natural granite tiles installed with LATICRETE materials. Exterior public spaces cover 3,000 square meters (32,291 square feet) including the main entrance and several other areas throughout as the mall transitions to rail posts and the Orchard residential tower, connected to the mall but staggered just behind and offset right.

ION Orchard's load-bearing, stressed skin exterior represents the first monocoque façade and retail canopy in Singapore. Capped with future-looking curved perforated metal panels interspersed with complex grids of the same material, ION Orchard's architectural skin is highlighted by a three-dimensional, free-form curvilinear glass façade that doubles as the largest fully-integrated digital media display in all of East Asia. The undulating LED media façade weaves a kaleidoscope of colors and graphics in snake-like fashion for 100 meters (328 feet) up Singapore's one-way stretch of prime real estate.

Behind this impressive architectural skin the shared common areas on the eight electric lower levels of retail feature 1200mm x 900mm (4' x 3') marble pavers in a pattern of dark and lighter gray installed with similar LATICRETE materials and methods with just a slight modification in the cement-based LATICRETE grout.



The granite and natural marble pavers for ION Orchard's interior lobby floors and space-age circular walkways that surround the open, rotunda-style atrium mall were set over masonry with a high-performance mortar bed consisting of LATICRETE® 4237 Latex Additive mixed with LATICRETE Crete Filler Powder for durability in the high-traffic areas.

Outside the granite tile joints were filled with LATICRETE 1500 Unsanded Grout and the marble inside with LATICRETE 1600 Sanded Grout. All of the stone flooring grout joints at ION Orchard were sealed to reduce staining and water absorption with LATICRETE 190.

"The majority of the natural stone installed for the ION Orchard destination was done with a LATICRETE mortar we have found great success in using on several projects," said RSP Architects. "With trust already in the performance, the local availability of technical experts was very important in selection process. LATICRETE was able to test the compatibility of the products with all of the stone materials and this gave us confidence to move forward."

For the wet areas inside the retail sections of ION Orchard (and the adjoining tower), the LATICRETE materials specification included revolutionary waterproofing and anti-fracture membrane protection. LATICRETE Hydro Ban™ provides dramatic time and labor-saving benefits that only amplify on large-scale, fast-paced projects. The liquid-applied membrane does not require the time-consuming task of installing fabric* in the field, covers or corners, bonds directly to PVC and metal plumbing fixtures* and can be flood-tested in just two hours** after final cure.

"We have experienced other waterproofing solutions in the past and found LATICRETE Hydro Ban to be much faster and easier to install," said Penta Ocean Co. Ltd. "There are several steps that we no longer must address. Also we can provide a much more condensed schedule since the flood testing can take place often on the same day. This can be very important if the project has been slowed in previous phases."

LATICRETE single-source supply transitioned nicely to the super luxury residential units as well as one of the four specialty floors inside the Orchard Residences tower. Broken up by the Clubhouse level on the 9th floor with amenities including gardens, spas, tennis

courts, function rooms and a business center, the tower also features the Sanctuary level on the 30th floor for yogis and is topped with the two-level ION Sky executive lounge and 360° observation deck.

On the Clubhouse level the surfacing material of choice switched to 300mm x 600mm (12" x 24") porcelain tiles and included several interior wall applications. Depending on the given vertical substrate, the specification for the porcelain tile included a mixture of LATICRETE 3642 Admix for a cement-based render and LATICRETE 317 thin-set for superior non-sag performance. Select wall areas of the Clubhouse introduced the unmatched strength of LATAPOXY® 310 Stone Adhesive for the trickier task of vertically installing porcelain tiles over a steel substrate. The grout of choice remained LATICRETE 1600 Sanded Grout for the brick-staggered grout joints.

Inside each of the 175 posh residential units ranging in size from 167 m² (1,800 square feet) up to the decadent 483 m² (5,200 square foot) penthouse suites on the upper levels with panoramic views, the same LATICRETE materials used to install the marble inside the mall carried over to each of the living rooms with 900mm x 900mm (3' x 3') marble tiled floors. The kitchen walls inside the Orchard tower were surfaced with 300mm x 600mm (12" x 24") compressed marble tiles and set in LATICRETE polymer-fortified thin-set for the new lifestyle icon on Orchard Road.

The future could be even brighter for LATICRETE Southeast Asia. In 2007 and 2008 Singapore topped 10 million tourist arrivals for the first and last time, dipping just 4.3 percent to 9.7 million last year. Still, the island country has projected 17 million arrivals by 2015 generating in excess of SGD\$30 million (USD\$21 million) in receipts. Considering the spectacular list of building projects fortified with LATICRETE in Singapore and on Sentosa Island, there's no limit to what tomorrow might bring.

* See Data Sheets 663.0 and 663.5 for complete product information on LATICRETE® Hydro Ban™.

** LATICRETE Hydro Ban™ can be flood tested in 2 hours when cured at 70°F (21°C) or above 50 percent relative humidity. It can be flood tested in 24 hours when cured at 50 - 69°F (10 - 20.6°C) and up to 70 percent relative humidity. The time to flood test starts when the second coat has cured from a light sage green to a darker olive green color.

