

# The Dubai Mall

## Dubai, United Arab Emirates

### TEAMS:

- ARDEX Middle East
- ARDEX Singapore

### INSTALLER:

- ASCON Marble & Granite LLC (ETA ASCON Group) - Dubai, United Arab Emirates
- Plus Painting Works LLC - Dubai, United Arab Emirates

### GENERAL CONTRACTORS:

- Dutco Balfour Beatty LLC (The Dutco Group of Companies) - Dubai, United Arab Emirates
- Al Ghandi & Consolidated Contractors Company - Dubai, United Arab Emirates

### ARCHITECTS:

- DP Architects PTE LTD - Singapore

### PRODUCT FEATURED:

- ARDEX A 35 Rapid Setting and Drying Cement for Floor Screeds
- ARDEX S 16™ Natural Stone Adhesive
- ARDEX MG Grout
- ARDEX K 15® Self-Leveling Underlayment
- ARDEX WPM 002 Rapid Drying Two-Component Waterproofing Membrane

### OTHER ARDEX PRODUCTS:

- ARDEX P 51™ Primer
- ARDEX R 3 E Moisture Tolerant Epoxy Primer
- ARDEX EP 2000™ Substrate Preparation Epoxy Primer

### CHALLENGES:

- Largest shopping mall in the world
- Very heavy traffic requirements
- Fast track project
- Avoid cracking or staining of the 200,000 m<sup>2</sup> (2,152,782 ft<sup>2</sup>) natural stone floor that was light in color
- Work schedules of contractors
- Below grade, on grade and above grade surfaces

### PROBLEM:

Stretching over 1,114,800m<sup>2</sup> (12 million ft<sup>2</sup>) with a floor area of 548,110m<sup>2</sup> (5.9 million ft<sup>2</sup>), the Dubai Mall is one of the largest retail shopping malls in the world. Containing a mixture of urban design principles, this amazing structure contains more than 1000 stores and offers leisure area attractions including a shark tank, an Olympic size skating rink and theme park. To date, the mall contains more steel than the total amount used in the Eiffel Tower and 193,000m<sup>2</sup> of stone has been placed. Originally scheduled completion in 2006, the Dubai Mall opened in 2008.



### SOLUTION:

Working with the ARDEX Singapore Representative, the specification written by DP Architects listed specific ARDEX products by name, recommended ARDEX qualified contractors for installation and all recommended testing to be completed for the project.

For this flooring installation the existing concrete was primed with ARDEX P 51 Primer, this would seal the substrate and help ensure a strong bond. In areas that would possibly be exposed to water, ARDEX P 51 was substituted with ARDEX R 3 E Moisture Tolerant Epoxy Primer. ARDEX R 3 E is the preferred primer for use in damp areas. In areas where the existing substrate had cracked and was no longer moving, ARDEX EP 2000 Epoxy Primer was used to prime and fill cracks in preparation to receive the ARDEX K 15 Self-Leveling Underlayment.

Because this was such a large floor installation, ARDEX K 15® Self-Leveling Underlayment was specified. ARDEX K 15 is ideal for large installations, because it can be pumped or poured into place making it easy to use. ARDEX K 15 is formulated with a special blend of polymers to prevent shrinkage and create a smooth, flat surface.

To ensure there would be no tile staining from moisture caused by vapor diffusion a layer of ARDEX WPM 002 Waterproofing Membrane was used. ARDEX WPM 002 is a strong, fast drying two-component waterproof membrane that is formulated with synthetic microfibers to increase strength and eliminate the need for a separate reinforcement mat. ARDEX WPM 002 has been designed to use with ARDEX tile adhesives. It does not re-emulsify and accommodates normal building movement which eliminates steps that would be needed with competitors' products. ARDEX WPM 002 is

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fast drying and controls excess construction moisture in the subfloor, so it helped the crew move forward on the project at a steady pace.

ARDEX A 35 Screed was the next step in the Dubai Mall floor installation. ARDEX A 35 is a rapid setting and drying cement for floor screeds with a compressive strength of 40 N/mm<sup>2</sup> (5,800 psi) and can be applied bonded, unbonded or floating. It was developed with ARDEX RapiDry Technology which allowed the installers to move onto the next step of the installation.

The final part of the installation included placing the natural stone tiles. ARDEX S 16 Natural Stone Adhesive was used to place the stones and then grout with ARDEX MG Grout. ARDEX S 16 is the preferred adhesive when placing natural stone tiles in areas that are intermittently damp. This would further help prevent the staining of tiles in areas that can get wet, since staining is often associated with moisture issues. ARDEX MG Grout was selected because of its ARDEX RapiDry formulation, which allows it to dry internally preventing moisture from staining the natural stone. It is also suitable for areas that are intermittently wet, so it would not be affected by potential water spills from one of the many fountains in the mall.

The Dubai Mall had the largest single day retail mall opening with nearly 600 stores present on November 4<sup>th</sup>, 2008.



Photos courtesy of DP Architects



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