



CASE HISTORY

BURJ KHALIFA TOWER (Burj Dubai) The World's Tallest Building

PRODUCTS

MCI® 2005

CONTRACTOR

Samsung Corporation

CONCRETE CONTRACTOR

Unimix (Universal Concrete Products, LLC)

ARCHITECT

Skidmore, Owens, and Merrill (SOM)

INDEPENDENT VERIFICATION & TESTING AUTHORITY

GHD

APPLICATION

Cortec's MCI® 2005 was incorporated in the concrete mix design for the podium structure. The building sits on a concrete and steel podium with 192 piles descending to a depth of more than 50 meters (164 feet). A total of 45,000 m³ of concrete was used in the foundations with a weight in excess of 110,000 tonnes (121,254 US tons).

WHY MCI® WAS CHOSEN

EMAAR properties engaged GHD to review the proposed design and assess the durability of the materials required to provide the 100 year design life. After a thorough review of multiple technologies, MCI® 2005 was chosen as an additional layer of protection in the substructure which is exposed to harsh groundwater conditions. The groundwater in the area contains more chloride than seawater as well as other contaminants.

CONCLUSION

Burj Khalifa's construction used 330,000 m³ (431,500 yd³) of concrete, 55,000 tonnes (60,627 US tons) of steel rebar, and 22 million man-hours to complete. Burj Khalifa is expected to hold up to 35,000 people at any one time and has a 100 year design life.

DATE

January 2004 - January 2010

DISTRIBUTOR

United Corrosion Technologies

LOCATION

Dubai, UAE

DEVELOPER

EMAAR Properties

CONSTRUCTION MANAGER

Turner

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OTHER BURJ KHALIFA FACTS

The Burj Khalifa structure has set quite a few records including:

- Tallest skyscraper to top of spire: 828 m (2,717 ft)
- Tallest structure ever built: 828 m (2,717 ft)
- Tallest extant structure: 828 m (2,717 ft)
- Tallest freestanding structure: 828 m (2,717 ft)
- Building with most floors: 160
- World's highest elevator installation, situated inside a rod at the very top of the building
- World's fastest elevators at speeds of 64 km/h (40 mph) or 18 m/s (59 ft/s)
- Highest vertical concrete pumping (for a building): 606 m (1,988 ft)
- Highest vertical concrete pumping (for any construction): 606 m (1,988 ft)
- The first world's tallest structure in history to include residential space
- Highest outdoor observation deck in the world (124th floor) at 442 m (1,450 ft)
- World's highest mosque (located on the 158th floor)
- World's highest installation of an aluminum and glass facade, at a height of 512 m (1,680 ft)
- World's highest swimming pool (76th floor)

