

Case Study:

Burj Dubai, Dubai



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The Project

Burj Dubai is part of an extraordinary 500 acre development called Downtown Burj Dubai. The tower's design is derived from patterning systems embodied in Islamic architecture, and also takes inspiration from the harmonious structure of the Hymenocallis plant, which is native to the region. This iconic project is set to break many records whilst overcoming the greatest of challenges and technical difficulties, not least of which are the wind forces dominating the structural design of the tower, the logistics of moving men and materials at extreme heights and construction of the building envelope.

The Challenge

As with any construction in the Middle East, Dow Corning's technical experts were confronted with testing and specifying products that are able to withstand the rigours of high temperature, ultra-violet light, seismic activity and inclement weather conditions including sandstorms and high winds. In addition, large areas of the curtain wall, which will ultimately contain 83,600 m² of glass and 27,900 m² of metal, equivalent to 27.5 acres or 17 football fields, are positioned at extreme height, which in turn, brings a new set of technical challenges.

The Solution

With the unitized panels interlocking on site and up to two storeys tall, being

positioned at such high elevations, the risk of pressure build up within the insulating glass units was alleviated through the specification of *Dow Corning 3362 Silicone Insulating Glass Sealant*, as a secondary perimeter seal.

Whilst the shape of the tower along its height has been varied to minimize wind forces on the building, *Dow Corning 993 Silicone Structural Glazing Sealant* plays an important role in providing a strong adhesive bond, UV resistance and fast cure, in the joints between the insulating glass units and the curtain wall frame.

A global leader in silicon-based technology with local international presence, Dow Corning were readily available to consult with customers and supply technical expertise and products to project partners across Europe, Middle East, Korea and China.

City:	Dubai
Country:	United Arab Emirates
Product:	Dow Corning® 993 Silicone Structural Glazing Sealant Dow Corning® 3362 Silicone Insulating Glass Sealant
Architect:	Adrian Smith, Skidmore, Owings & Merrill
Structural Glazing Fabricators:	Far East Aluminium, Hong Kong Arabian Aluminium, UAE
Insulating Glass Fabricator:	White Aluminium, UAE
Main Contractor:	Samsung Engineering & Construction
Developer:	Emaar Properties

- A truly spectacular structure and already the tallest tower in the world, Burj Dubai will house the first Armani hotel as well as the first Armani Residences along with recreational facilities and entertainment venues
- With a budget for this project exceeding \$1 billion, the final height of this skyscraper will be over 700m with the total number of floors expected to be more than 160 storeys
- The tower features the one of the highest publicly accessible observation decks in the world, whilst the tip of the spire can be seen 90km away
- Managing the internal pressure foreseen within the insulating glass units due to the high altitude culminated in the specification of *Dow Corning 3362 Silicone Insulating Glass Sealant*
- *Dow Corning 993 Silicone Structural Glazing Sealant* was specified to bring additional security to the insulating glass units which were mechanically fixed to the superstructure

Dow Corning 3362 Silicone Insulating Glass Sealant

A neutral curing silicone sealant specifically formulated for use as a secondary seal in the manufacture of high performance insulating glass units, with outstanding adhesion to a wide range of substrates including coated, enamelled and reflective glass. *Dow Corning 3362* has excellent temperature stability, is resistant to ozone and ultra-violet radiation and is certified by European Technical Approval ETA 03/0003 and complies with EN 1279 requirements.

Dow Corning 993 Silicone Structural Glazing Sealant

Certified by European Technical Approval ETA 01/0005, *Dow Corning 993* exhibits excellent weathering properties and high resistance to ultra-violet radiation, heat and humidity once cured. It is ideal for structural bonding of glass and metal, including coated, enamelled and reflective glass.

Contact Dow Corning...

Dow Corning has sales offices, manufacturing sites, as well as science and technology laboratories around the globe.

Telephone numbers of locations near you are available on the world wide web at www.dowcorning.com, or by calling one of our primary locations listed below.

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