

dream realizers  
service providers  
efficiency experts  
silicone suppliers

productivity  
increasers

imagination  
designers  
possibility expanders  
future inventors



possibility  
expanders

troubleshooters

profitability maximizers

brand enhancers

market expanders

technology  
innovators

idea generators

opportunity creators

relationship builders

global partners

marketing allies

wish fulfillers

## Innovative Solutions

# Silicone Technology Redefines Architecture in India and Abroad

## Dow Corning's Innovative Solutions Enhance Structural Safety and Design

Architects are beautifying the city skylines across India with their innovative designs, using uninterrupted facades of mirrored glass, metal, and stone. From Bangalore to Mumbai, silicone technology is helping architects and city planners transform the city landscape. In just a few years, the construction industry in India has been revolutionized by structural silicone glazing from Dow Corning, which can replace mechanical fasteners as a way to adhere glass, ceramic, metal, stone, and other materials to building frames.

“Architectural imaginations soared once the limitations of mechanical fasteners were lifted,” said Rajinder Khanna, Marketing Manager for Dow Corning’s construction industry in India, ASEAN and ANZ. “Today’s buildings are taller, sleeker, and more resilient to harsh environments than ever before.”

## Revolutionizing the construction industry

As reflections of the sun and clouds glide across these sleek frontages, the people inside these buildings can take comfort in knowing they are safer from natural and man-made disasters. The natural chemical properties of silicone sealants enable excellent adhesion and compatibility with multiple substrates, allowing for improved functionality and longevity. Designed to transmit windloads from the glass to the building’s framework, silicone glazing systems are able to flex, extend, and compress with the daily stress of thermal shear, while maintaining their adhesive strength in the face of earthquakes, hurricane winds, ultraviolet rays, temperature extremes, moisture, and acid rain.

Such revolutionary technology began more than 30 years ago as a two-sided glazing system, where vertical joints were glazed with silicone. This advancement served as a springboard for four-sided glazing, and then for the structural glazing of insulating glass panels.

“In the early 1960s and ’70s, structural silicone glazing was a new and unproven concept, but the possibilities were tantalizing,” said Khanna.

Dow Corning engineers evaluated their sealants’ compatibility with all possible substrates, testing for adhesion, movement capability, fatigue, and failure. They analyzed joint designs, stresses, and environmental variables, and monitored every design and installation detail.

“Once the glazing technology proved successful, architects were no longer satisfied with square shapes and two dimensions,” said Khanna. “They asked for

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and received the technical support to structurally glaze triangles and other unexpected shapes to create three-dimensional curtainwalls.”

New two-part, fast-cure sealants led to improved quality and performance of curtainwalls, and the use of structural silicone glazing blossomed.

## Innovative architecture from around the globe

Examples of the cutting-edge uses of silicones can be found around the world, including:

### # Bandra-Kurla Complex:

When Mumbai’s urban planners envisioned a second business district as a way of decongesting the existing one, Dow Corning products and expertise helped bring that vision to life – structural glazing and weathersealing materials were used in the construction of the gleaming glass and steel facades of the Bandra-Kurla Complex, giving the new business district a truly international look.

### # The metropolitan areas of Bangalore and Gurgaon:

The multinational corporations that set up offices in these Indian cities needed the best in terms of living and work spaces for their employees. Dow Corning’s silicone solutions helped fulfill their high expectations – by enabling the creation of futuristic and intelligent buildings that effectively realized the city planners’ designs.

### # Washington Mutual Tower:

Standing tall in the “rain shadow” of the Olympic Mountains, the 55-story Washington Mutual Tower experiences few dramatic storms. Instead, it is continually shrouded in clouds and coated in drizzle, rarely seeing a sunny day. In nearly 20 years of damp and gloom, punctuated by repeated seismic events, there have been no reported changes in the structural sealants used in the building’s construction.

### # Exchange Square:

Home to the Hong Kong Stock Exchange since the 1980s, Exchange Square’s 656-foot towers were among the largest silicone structural projects of their

time. They are a further testament to silicone’s reliability under extreme weather conditions, holding strong against severe heat, humidity, heavy rains, and typhoons.

## About Dow Corning

Dow Corning Corporation ([www.dowcorning.com](http://www.dowcorning.com)) provides performance-enhancing solutions to serve the

diverse needs of more than 25,000 customers worldwide. A global leader in silicon-based technology and innovation, offering more than 7,000 products and services, Dow Corning is equally owned by The Dow Chemical Company and Corning, Incorporated.

More than half of Dow Corning’s annual sales are outside the United States.

## Dow Corning in India

In India, Dow Corning ([www.dowcorning.com/india](http://www.dowcorning.com/india)) is one of the fastest growing specialty chemical companies. From our office in Mumbai and our manufacturing facility in Pune, we serve customers across India and South Asia.

Dow Corning in India offers innovative solutions and products to industries as diverse as construction, beauty & personal care, textiles, automotive, industrial lubrication, electronics and many others.

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