Dow Performance Silicones

Dow Provides Solutions for Hangzhou Oriental Royal

DOWSIL™

Case Study: Hangshou Oriental Royal



City and Country
Hangzhou, China

Products*
- DOWSIL™ 995 Silicone Structural Sealant
- DOWSIL™ 791 Silicone Weatherproofing Sealant

Key Participants
- Hangzhou Xinsheng Real Estate Development Co., Ltd.
- Dennis Lau & Ng Chun Man Architects & Engineers (HK) Ltd.
- Earthasia Design Group
- HBA Design Group
- PAL Design Consultants Ltd.
- Wuhan Lingyun Building Decoration Engineering Co., Ltd.
- Zhongshan Shengxing Glass Service Co., Ltd. - Curtain Wall Manufacturer
- Shenzhen Keyuan Construction Group Co., Ltd.
- Dow - Silicone Sealant Provider

*Prior to February 2018, products listed were branded as Dow Corning.

Project

Dow Provides a Silicone Structural Assembly System for the Hangzhou Oriental Royal -- the Third High-end Residential Building in 2007 in China.

Project Description

Ranked as one of China's top three high-end residential buildings in 2007, Hangzhou Oriental Royal is a landmark in Qianjiang CBD of the capital city of Zhejiang province.

Spanning more than 220,000 square meters, the Oriental Royal consists of 7 high-rises. The whole project was designed to cater to the city's population needs for high-end residential apartments.

50+ YEARS PROVEN PERFORMANCE

All of the apartments have a space area exceeding 200 square meters and are fully furnished and equipped with central air conditioning system, vacuum cleaner, hot water system, and a digital intelligence system. Located on the bank of the Qiantang River, the Oriental Royal is also the first residential project to use aluminum panels for its curtain wall system.

The Challenge

As the first aluminum cladding curtain wall project used on a high-end residential building in Hangzhou, the Oriental Royal curtain wall uses large size aluminum panels (1800mm*1800mm). The weatherseal joint sizes are also comparatively bigger at 20mm*6mm. The large panel size requires high quality sealants and long time durability insurance. Issues involving sealant springing, blistering and uneven surfaces due to air released by foam backer roads and aluminum's high thermal expansion coefficient have created problems during the initial construction stage.

The Solution

To resolve some of these technological challenges, DOWSIL™ 791 Silicone Weatherproofing Sealant grey and white and DOWSIL™ 995 Silicone Structural Sealant were recommended for the project.

Curtain wall fabricators would benefit from the on-time delivery and durability of DOWSIL™ products, while also getting some of the on-site training and technology support provided by the company. Dow professionals recommended open cell foam rods instead of the close cell foam rods to prevent blistering problems caused by close cell foam rods that can gradually release air if broken during construction. The open cell foam rods also help the sealants cured from both sides to help decrease potential springing problems.

Due to the large size of the panel, Dow recommended to use double-time sealing to shorten the sealant curing time and eliminate the expansion and squeezing impact from panels. The structural glazing sealants provided by Dow form very strong bonds after cured, are stable at high and low temperature extremes, and have superior physical and mechanical properties with excellent weather-resistance. They are neutral cured also non-corrosive. These DOWSIL™ products all meet Chinese, American and European technical standards.

Contact Us

Dow is collaborating with industry professionals around the world to develop solutions to improve the energy efficiency of buildings for a more comfortable environment. Learn more about Dow's full range of High Performance Building solutions by visiting us online at **consumer.dow.com/construction**.

Dow has sales offices, manufacturing sites and science and technology laboratories around the globe. Find local contact information at **consumer.dow.com/ContactUs**.

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