

SentryGlas® provides high resistance to temperature and humidity in façade



The new attractive-looking façade covering the four Sowwah Square towers in Abu Dhabi provides another stunning example of the functional and structural capabilities of DuPont™ SentryGlas®. Located in the Emirate of Abu Dhabi, Sowwah Square is part of the Sowwah Island project and is located in the new Abu Dhabi Central Business District, a 570,000m² square metre development comprising of four luxury high-rise towers incorporating office spaces, a retail area and the new Abu Dhabi Stock Exchange.

The façade construction used on the Sowwah Square towers comprises a high performance glazed curtain wall system with external sunshade glass 'louvers'. These louvers comprise two side-supported open edge glass panels, which are installed horizontally in U-shaped fixation systems. The laminate panels each measure 500 by 1,000mm, or 300 by 1,000mm and use 1.52mm SentryGlas® interlayer.

According to the architect, SentryGlas® was selected for its resistance to humidity and

high temperatures, as well as its superior performance compared to PVB-based alternatives in terms of post-breakage behaviour and open edge performance. Due to the strength of the interlayer, SentryGlas® laminates demonstrate excellent post-glass-breakage performance. Upon impact, the glass may break, but dangerous fragments will adhere to the SentryGlas® interlayer, reducing the risk of injury to people in the vicinity.

In addition, SentryGlas® is 100 times stiffer and five times stronger than PVB, which meant the architects were also able to design and specify thinner laminate panels and, as a result, significantly lighter than PVB-based alternatives.

By deploying laminate panels incorporating SentryGlas®, the architects were able to address a number of important structural and functional demands, one of which was the high daytime temperatures and humidity. The superior performance offered by SentryGlas® (which resists temperatures up to 80°C) in regions where high temperatures are common made it an ideal candidate for this project.

The building enclosure system was designed and fabricated to allow for noiseless thermal expansion and contraction caused by an ambient air temperature range of 5° C (low) to 54° C (high), with a nominal temperature of 27° C. Anticipated material surface temperatures due to solar heat gain, or night sky heat loss, were therefore evaluated for selected materials and finish



colours, and were used in all design calculations.

Designed and manufactured by German laminator Bischoff Glastechnik AG (BGT), the laminate glass panels used for the louvers needed to be decorated with a special two-colour congruent silk-screen printed pattern in order to optimise solar gain and reduce solar glare. As Martin Sulzer of BGT explains: "We were chosen as laminator on this project primarily because of our expertise in silk-screen printing of glass laminates. For the Abu Dhabi Financial Center, the glass louvers have white spots on their outer side glass panels and black spots on their inner side. This two-colour congruent printed decoration minimises the G-value [solar energy transmittance] allowing less sunlight into the building, which keeps employees more comfortable on hot days. The white colour on the outer edges gives a slightly foggy, frosty appearance on the surface of the glass. The black spots on the inner side of the glass enable the human eye to look through the printed pattern on the glass," adds Sulzer.

Glass Systems marches east

The Glass Systems Group, the UK's largest independent sealed unit manufacturer, is successfully expanding its customer base to include the East of England. Glass Systems already has 30 customers in the area they supply to on a regular basis, and Managing Director Alan Atkinson anticipates this number is set to increase:

"Historically Glass Systems has not ventured into the eastern side of England. However following the sad demise of major sealed unit manufacturer Uniglaze 2, a gap has been left in the market which prompted us take the next step of our expansion.

"Short-term customers in East Anglia are being serviced from our existing factory in south Wales, but we have already made a significant investment in plant and machinery, and this business will switch to our new production facility in the area in the coming months.

"The expansion is being spearheaded by ex-director of Uniglaze 2, Mervyn Raby, who joined Glass Systems last November. Mervyn will ensure the transition into this new area and the establishment of the new facility run smoothly and will continue to oversee existing customers as well as helping support new ones."

Alan continues: "We established something similar with Glass Systems Direct, one of our group companies, five years ago, and the principle in East Anglia will be the same. Whilst a separate company, the new venture in East Anglia will benefit from the advantages, knowledge and expertise of our group. It will have its own sales office, production facility, geographical



area and customers. As with Glass Systems Direct and Climate, the 'head office' function, will be at our HQ in Swansea."

Alan concludes: "In difficult economic times we continue to invest in, and expand our business. We have seen major expansion and growth at Climate, our conservatory roof division, and Glass Systems Direct, over the last 18 months and the establishment of a new facility to cover the eastern side of England is the next logical step.

The move into these new areas will allow an increasing customer base to benefit from the quality, level of service and attention to detail that Glass Systems existing customers have come to expect over the last 25 years."

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