

SABIC Innovative Plastics helps the Crown Paradise Hotel keep guests cool in Cancun

Letting in light but not Caribbean heat with Lexan® Solar Control IR® sheet glazing

Vacationers at the Crown Paradise Hotel in Cancun, Mexico, may be looking for maximum exposure to the Caribbean sun at the beach or pool, but once they enter the lobby, they want relief from the heat. There's just one problem – the large, multi-story atrium lobby is not air conditioned. To enhance the comfort of its guests, the hotel wanted to replace lobby glazing with a material that could reduce heat transmission while permitting light to penetrate. At the same time, Crown Paradise wanted to make a design statement with a glazing material that could be custom-tinted. And finally, because Cancun is a hurricane-prone area, the chosen glazing needed to contribute to overall resistance against storms.



Challenge Preventing heat build-up without sacrificing natural light

Like many hotels in the Caribbean, the Crown Paradise provides air conditioning in guest rooms but leaves public spaces, such as the soaring atrium lobby and corridors, open to the ocean breezes. The 500-room resort, located in Cancun, Mexico, originally replaced glass windows in the lobby with polycarbonate glazing offering protection from UV light. However, this solution did not solve the problem of heat build-up over the course of the day.

The hotel sought a new glazing material that could help significantly reduce the transmission of heat into the lobby and upper corridors while maintaining excellent light penetration to reduce the costs of artificial lighting and improve aesthetics. Further, since the glazing had to be replaced anyway, Crown Paradise wanted to take the opportunity to enhance the lobby's external appearance with a specially tinted material.

There was one additional requirement for the glazing – superior impact resistance. Because Cancun is located in a coastal area vulnerable to hurricanes and other storms, building materials must help resist damage from the elements and contribute to the safety of guests and staff. From a business continuity standpoint, the hotel wanted to

maximize its chances of reopening quickly following a storm.

Tinted glass with solar heat-blocking capability was quickly discarded as a possibility due to its heavy weight, high cost and risk of breakage.

Juan Melhado Cooke, General Manager for Crown Paradise said, "We had very specific requirements for the new lobby glazing. In particular, impact resistance, light weight, weatherability and a beautiful appearance were essential. We were doubtful that any one product could deliver everything, but we found that SABIC Innovative Plastics had the answer."

Solution Lexan Exell® D Solar Control IR sheet blocks up to 35 percent of solar heat

Lexan Solar Control IR glazing offers key advantages – compared not only to glass but also to previous polymer sheet products, which use a screen-printed coating or a co-extruded layer that makes the panels translucent or opaque, reducing light. Crystal-clear Lexan polycarbonate (PC) resin solves this problem by incorporating proprietary additives that block infrared and near-infrared heat from the sun while letting in high levels of light. Because this technology is inherent in the material, solar control properties are permanent.

Lexan* Exell* D Solar Control IR* sheet / Crown Paradise Hotel

The lightly tinted solid or multi-wall sheet products also deliver lower weight and high impact resistance, and resist yellowing and degradation from UV light. For the Crown Paradise project, SABIC Innovative Plastics provided custom-tinted solid Lexan solar control panels in a stunning blue shade. The 5.25 ft. x 11 ft. glazing panels, totaling more than 26,000 square feet, were cut at the SABIC factory in Bergen op Zoom, The Netherlands. They enclose the lobby area and upper corridors in the 7 story tall atrium.

“This glazing application marked the first use of Lexan Solar Control IR sheet in Mexico,” said Jacob Nava, Branch Manager for SABIC Innovative Plastics. “This unique material enabled the hotel to cool down the atrium without the need for costly air conditioning. At the same time, it admits plenty of sunlight to dramatically illuminate the large public area, reducing electricity costs.”

Benefits

Greater comfort and protection for hotel guests

The new glazing solution has enabled the hotel to reduce solar heat transmission by up to 35 percent, resulting in a markedly cooler lobby and more comfortable hotel guests. Especially in the summer months, when Cancun’s temperatures can hit the mid-90s, the Lexan Solar Control IR panels are making an important difference for guests and staff alike.

However, summer is also the season for hurricanes. In 2005, before the Lexan Solar Control IR panels could be fully installed, Hurricane Wilma hit Cancun. While the SABIC glazing is not certified for hurricane protection, its high level of impact resistance helped to withstand the high winds and protect the interior of the building. Of the panels that were completely installed, all withstood the hurricane with only minor scratches.

“The durability of the Lexan glazing helped us get through the hurricane with less damage,” said Cooke. “Even more important, we were able to reopen for business more quickly than our competitors. Lexan has indeed proved its value in many ways.”

Details at
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