Tecno Sunblock: TECNOVATI COM's energy-saving smart glass

For this issue of Glass Technology International, TECNOVATI COM CEO Leonardo Ghizzani discussed Tecno Sunblock technology with Senior Editor Nick Fouché from the company stand at Vitrum 2023.

GTI: Leonardo what can you tell me about your company's performance over 2022 and 2023?

Lonardo Ghizzani: The post-COVID period brought many opportunities to companies by way of government financing for innovative projects. As we work in the glass market we were able to take advantage of such incentives to develop new technologies - which also drove sales for us over that period. Here we were able to participate in benefiting households through renovating buildings by providing window panes, which resulted in great turnover for us. This year we worked very well right until mid-year, though we've started facing new challenges over the summer with bank interest rates now rising - which will likely have a negative impact upon our operations from now until year-end. From the outset, Tecnovati has been able to remain in the market thanks to its innovative impulse. We've always scouted the globe for new technologies and products to showcase to the Italian market - something which now really characterises the company. Indeed this year at Vitrum Tecnovati is showcasing Tecno Sunblock, a product that arose out of our collaboration with Hewei Technology.

GTI: So we're talking

here about a uniquely Chinese creation?
LG: Exactly. Tecno Sunblock was made possible by the work of the renowned scientist Wen Weijia, professor at Hong Kong's Science and Technology University and winner of the National Natural Science award in 2014. The glass itself is thermochromic, which means it reduces the need for heating. Here the glass dims direct sunlight - potentially offering even total protection from it. A very innovative product, it's already being used in architecture in an ongoing effort to advance building practices that are both sustainable and environmentally responsible. It can replace manual, electric curtains as an application on both glass walls and glass ceilings - thereby reducing the use of air conditioning in buildings. Certainly that's the most valuable characteristic of Tecno Sunblock when we consider ever rising summer temperatures today. Of course, it's also fully in line with current discussions concerning energy conservation and improvement in both old and new buildings.

GTI: And I guess this would also significantly reduce the need for heating in winter
LG: Indeed. Bear in mind that energy waste in buildings now represents 40 percent of total energy waste, while the energy wasted in transparent surfaces is at 50 percent of the total energy loss in buildings. As a smart glass, Tecno Sunblock has two modes, namely transparent and opaque, so the product has two shading coefficients. As such, in a room with low temperature or during cold months, the glass will let in more light. As you correctly note, that reduces the need for heating. Moving on to the hotter months, Tecno Sunblock will remain opaque in a warm room - blocking heat from entering the room and so reducing the need for air conditioning. On the other hand, when the product turns opaque the visible light changes from direct to dim but, albeit with minimal impact upon room luminosity.

GTI: Leonardo, from what I understand it's Tecnovati that's been behind the introduction to the European market of Tecno Sunblock. So can you tell us something about your company?
LG: Sure. Tecnovati is based in Barberino Tavarnelle in Florence. I founded the company following decades of experience in the glass industry. What I can say is that we've always believed in the quality of our products and machines, which is the reason why we only choose to work with leading companies. This determination to reach the best quality has led us to successfully introduce exclusive products that now enjoy national acclaim.

GTI: And why Tecno Sunblock specifically?
LG: We believe that Tecno Sunblock represents a key offer to the design and architectural industries, which can also work towards greener, more sustainable construction practices. The technology provides protection from direct sunlight and can be set to a temperature of between -20°C and +70°C, which is between -4°F and 158°F. When the room temperature rises over the set temperature, the glass activates and turns opaque. Here the glass responds to the conditions of the room without any manual intervention and without using power. So Tecno Sunblock is both a smart and a green, zero emission solution.

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