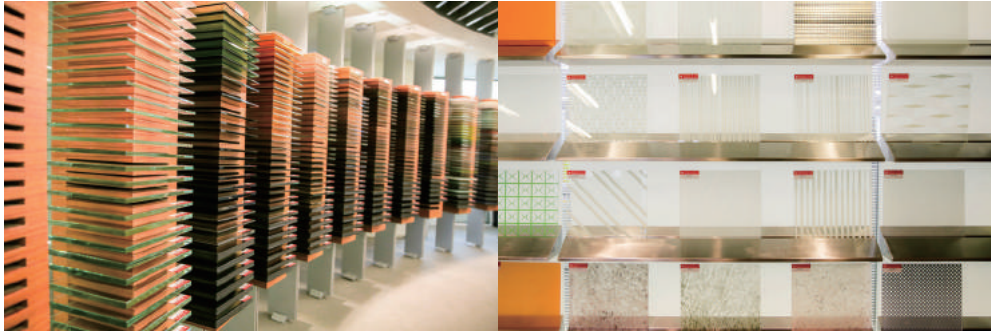


Taiwan Glass

Endeavour for Energy Saving,
Honour All Clients





As the only glass manufacturer in Taiwan, it has been 52 years since Taiwan Glass was founded. The company has many factories in both Taiwan and China, and has become the fifth largest glass company in the world in terms of production capacity. The successful mode of Taiwan Glass was pretty much set by founder Mr. Lin Yu-Chia. A senior executive remembers: “Founder Lin had many business ideals, which have been followed until now. For example he emphasized efficiency, and asked us to use our brains when solving problems. When a proposal produces results, he would reward us.”

Performance is the goal pursued by all companies, but Taiwan Glass also puts much emphasis on social and environmental responsibilities. In the past, many of Taiwan’s rivers were heavily polluted, and the air quality was deteriorating as the result of industrialization. Today, environmental protection is a universal value, and under the government’s demand, companies have worked hard to improve the environment. Taiwan Glass, led by Founder Lin, had already been headed in the direction of environmental protection and energy conservation, and was years ahead of its competitors in this regard.

As for wastewater processing, Taiwan Glass is capable of processing about 80% of its wastewater; however, there remains the problem of air pollution resulted from high-temperature burning in the manufacturing process. Nonetheless, Taiwan Glass strictly follows the regulation requirements set by the government . To construct environmental protection related facilities, implement environmental management system, and educate employees, in order to meet regulation requirements, reduce impact on environment, and achieve the goal of environmental sustainability, Taiwan Glass spent 220 million NTD in the area of environmental protection in 2014 alone, which was a 33% increased compared to 2013. A senior executive said, “We adopt the 7S implementation plan (classification, reorganization, clean, sweep, literacy, safety, and savings). We must carry out garbage classification and paper recycling and so on. These are all part of performance review.” Partner companies in the area of environmental works have related accreditation standards as well.

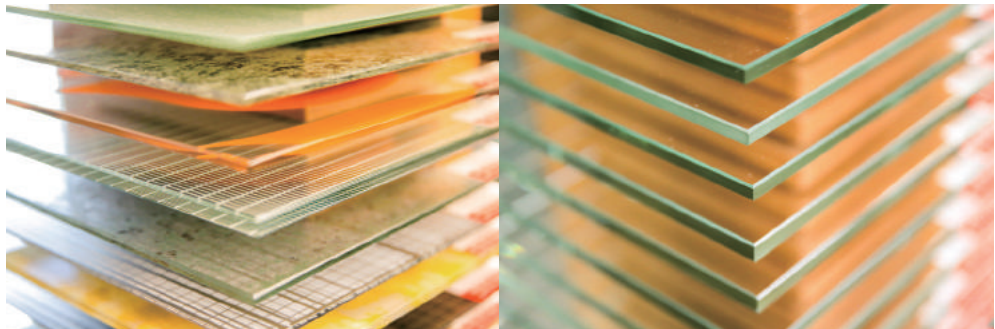
As for energy conservation, Taiwan Glass has enhanced energy efficiency by introducing energy saving technology and implementing energy management, and established index and management procedures regarding all raw materials, power consumption, water consumption, waste water generation, wastes generation, greenhouse gas emissions, and production

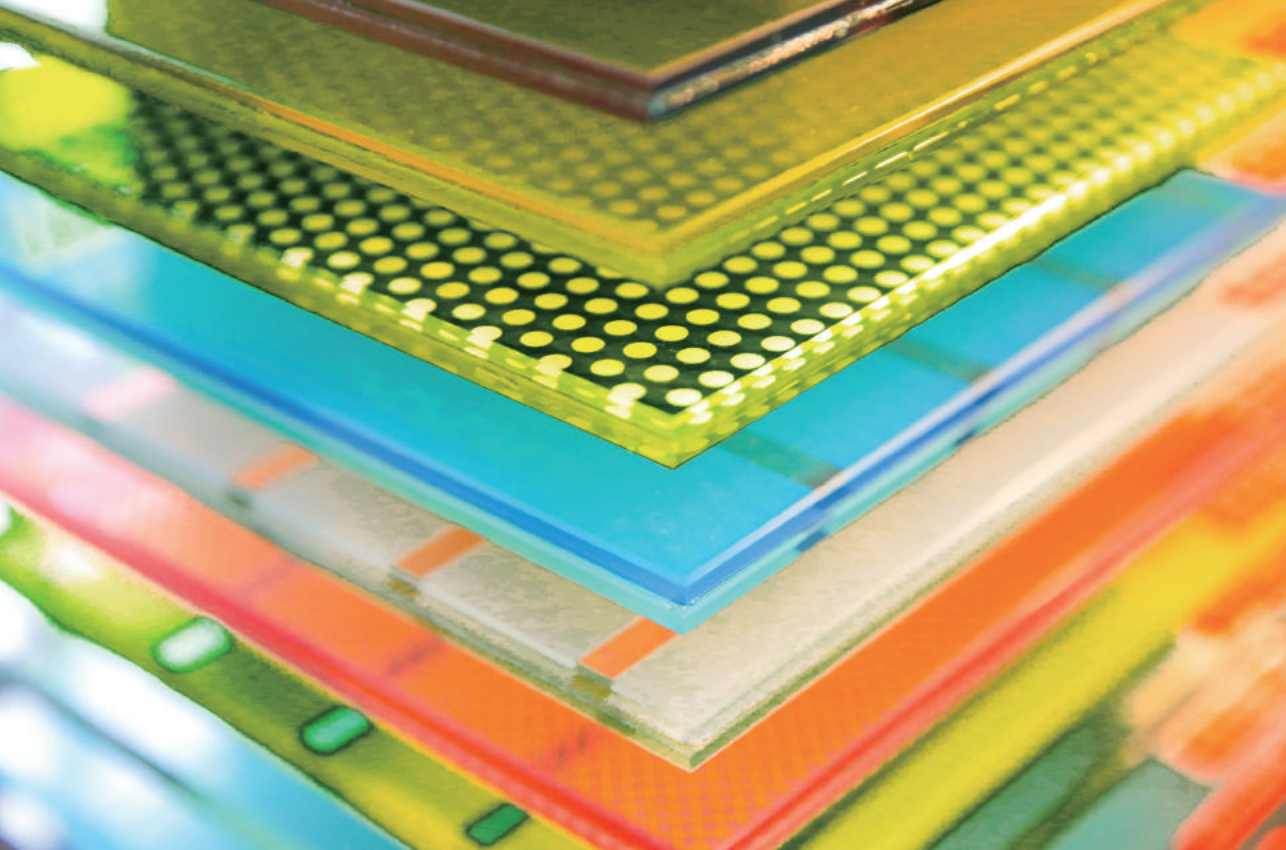


energy consumption, to effectively improve pollution prevention, reduce production energy consumption, decrease greenhouse gas emissions, ultimately achieving energy saving and waste reduction, and minimizing the impact of manufacturing processes and products on the environment. “We use products that have Water Saving Label, such as water saving faucet. We also emphasize green procurement, and we use energy saving light tubes and refrigerators. Our goal is to reduce energy consumption by 1% annually.” As for raw materials, Taiwan Glass uses about 80% raw materials and cullet for the rest to not only lower the cost, but also achieve environmental protection through recycled materials.

Among these policies, the most important would be the R&D of energy saving products. The Low-E (low-emissivity) Glass that has won the Green Building Material Label is on such prided product. Using the up to date vacuum sputtering coating technology and equipment from Germany, multiple layers of coating of different materials are sputtered onto the glass surface; the silver coating has a high reflectivity of infrared, which means high thermal-resistance. The base coating below silver coating is tin dioxide (SnO_2) anti-reflection coating, which enhances visible light transmission(V.T.). The layer above the silver coating is nickel-chromium(NiCr), an insulation coating that protects the layer of silver. At the top is another layer of tin dioxide anti-reflection coating that protects all layers. These coatings collectively achieve the requirements for high V.T., low visible light reflection(V.R.), high heat-insulation, and environmental and energy saving most concerned by modern architecture.

“For example, the Taoyuan International Airport phase II used the Low-E Glass for its high V.T.. It brightens the interior, but reflects almost all the infrared and reduces the temperature





inside, allowing the interior to be cool in the summer and warm in the winter. It is estimated that it helps to save about 40% of electricity cost.” This is an astonishing result. Now that greenhouse effect is becoming more severe, and the summer is getting hotter and hotter, it is a good idea to install Low-E Glass. Other buildings, such as CTBC Bank, and Fubon Taichung Wuchun Housing have all use this kind of energy saving glass.

Compared to imported glasses, Taiwan Glass has the advantage of being the local producer; not only the price and timely delivery, the quality is first-rate compared to foreign products, and the most important thing is service. “We are customer-oriented.” Said the senior executive, “In normal construction project, most of the time the glasses are produced after the window frame is certain. It is a custom-made service; customers bring up the needs, and we provide technical and production services. There are lots of details within. For example, one project over 500 sizes in 2,000 pieces of glass.” This is something glass importers cannot provide, but Taiwan Glass is the best friend of architects for above affairs. Whether it is V.T., color, curved curtain wall, or structural glass system, Taiwan Glass make the most effort to provide the best solutions.

The show room of Taiwan Glass display glasses with various patterns jointly created by Taiwan Glass and clients. These beautiful achievements are the very manifestations of Taiwan Glass’s “customer-oriented” philosophy, as well as the proof of its industry-leading status.

Quality Green Building Material Products by Taiwan Glass

Low-E Glass

Award of Green Building Material Label, the glass has natural glass color, and high visible light transmission for wavelengths from 380 to 780 nm. result in decreased use of indoor lighting and help to save energy. Will not cause glare hazard due to high visible light reflectivity. High reflectivity of long-wavelength infrared light, prevents heat entering the room, keeping the room cool in the summer and warm in the winter.

Low-E Vacuum Glass

Low U value (heat transfer coefficient) effectively block solar heat, keeping interior cool and reducing power consumption for air conditioning. In the winter, possess high performance of heat loss insulation, keeping interior warm and comfortable. The U value has been tested by CTC China Building Material Test and Certification Center, and the low U value achieves the highest class of heat insulation standards in Mainland China and Japan. The vacuum space effectively blocks noise transmission and reaches sound transmission class by 39dB. The lowest condensation temperature is at -40°C without inner dew-forming situation. The service life can reach over 20 years. Also, the thickness is much thinner, which saves window frame cost.

Insulating Glass

Great insulation effect, and if inert gas is used, the insulation effect can be much better. An ideal energy saving building material. The middle layer is dry gas, which prevents dew-formation.



TAIWAN GLASS IND.CORP

No. 261, Section 3, Nanjing E. Road, Taipei city, Taiwan

Telephone : 02-27130333 www.taiwanglass.com

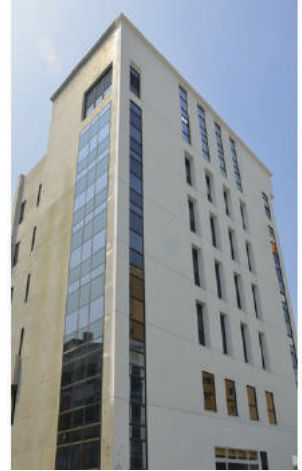
Projects using energy saving glass of Taiwan Glass



Cathay Landmark
Low-E IGU



Fubon Taichung
Wuchun Housing
Low-E IGU



Chi Mei Hospital-Forth
Medical Building
Low-E Vacuum Glass



CTBC Bank
Low-E IGU



Taipei Marriott Hotel
Low-E IGU