GLASTON TPS®
insulating glass with ultra-thin centre glass is revolutionizing the glass industry

For many homeowners and builders, the challenge is to modernize outdated windows with low efficiency without complicating the replacement process. Glaston has a solution - triple TPS® insulating glass (IG) units with an ultra-thin centre glass down to 0.5 millimetres. A unique system configuration and a special process sequence patented by Glaston enable the automatic production of these new IG units.

Glaston is the inventor of TPS® (Thermo Plastic Spacer) insulating glass technology and introduced this leading warm edge technology to the market over 30 years ago. At glasstec 2024, Glaston presented this new manufacturing process for IG units with thin glass.

PATENTED MANUFACTURING PROCESS

The development of these energy-efficient, thin triple TPS® IG units required overcoming significant tech-

nical challenges. "Traditional methods for manufacturing these triple IG with an ultra-thin centre glass down to 0.5 millimetres proved unsuitable," said Uwe Risle, Director of IG Product Management at Glaston. "That is why we have developed a novel production technology that has been patented since fall 2024. This approach modifies the process completely, minimizing stress on the thin centre glass and reducing the risk of breakage."

The Glaston TPS® technology plays a decisive role in the production of these thin IG units. By ensuring exceptionally high insulation values and gas tightness, it measurably improves the performance of these IG units. In addition, the fully automated system reduces the need for manual handling, a key factor given the sensitivity of thin glass.

"This production line guarantees maximum flexibility for conventional and thin glass TPS® IG units, even in mixed operation," added Risle.

All processing stations within the line have optimum settings for processing the ultra-thin centre glass down to 0.5 millimetres thickness. The offset and complete encapsulation in the thermoplastic spacer and in the secondary sealing layer ensure that the thin centre glass is well protected.

Conventional glass thicknesses can be produced on this TPS® line using two automatic assembly machines including gas filling in high-speed mode. In accordance with the Glaston shape catalogue, a wide variety of shapes is guaranteed, including modern quadruple IG units with thin glass.

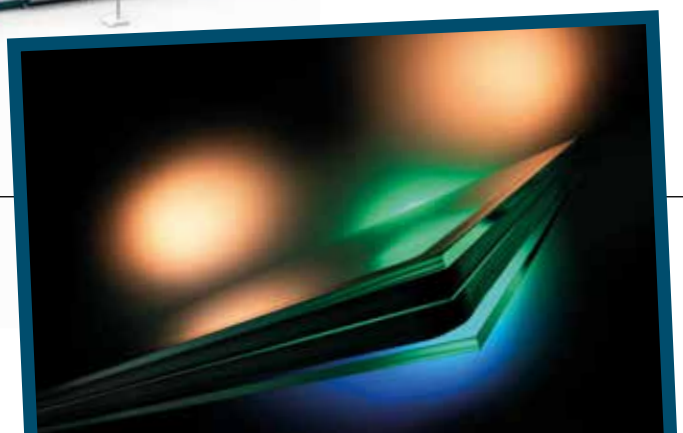
ENERGY-EFFICIENT IG UNITS WITH THIN GLASS

Triple TPS® IG units with ultra-thin centre glass down to 0.5 millimetres are significantly lighter than conventional triple IG units and offer high-performance glazing in a slimmer, more efficient package. These units offer up to 20 percent better U-values than conventional double glazing, while also addressing the issues of thickness and weight.

Thin glass TPS® IG is particularly well-suited for residential applications in both new construction and renovation. For new builds, their reduced weight simplifies transportation and installation. And functional issues, such as the closing problems of heavy sliding windows, can be eliminated.

"Thin triple TPS® IG units are especially beneficial in renovations," Risle said. "They not only provide a significant performance upgrade over less energy-efficient double units but also fit neatly into existing window frames, making them an ideal solution for easy window upgrades."

In addition, thinner glass has higher light transmission and significantly less raw material is needed to manufacture it. For many homeowners and builders, the combination of reduced frame support and lower U-value means a higher return on investment. Triple TPS® -IG units with an ultra-thin centre glass down to 0.5 millimetres are a real game changer in the glass industry and make a valuable contribution to meeting the growing demand for more energy-efficient homes.



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