UTILITY MODEL PATENT

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Title

Method for Manufacturing a High-Rigidity Insulating Glass Unit

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Abstract (57):

The method for manufacturing a high-rigidity insulating glass unit includes two or more glass panes, which are hermetically sealed together using a special rotating jig. The panes are vertically placed at a distance of 2 to 30 mm. The inter-pane space is sealed along the entire perimeter of the unit by sequentially turning the special jig by 90 degrees. The insulating glass is assembled on a primary spacer frame, spaced at least 10 mm from the edge of the glass around the perimeter. The panes are filled with an adhesive mixture, embedded with a reinforcing profile, then cured for 15–20 minutes to harden. The procedure is repeated for each side of the unit.

Description

Field of the Utility Model

The utility model relates to industrial building materials, particularly the production of high-rigidity insulating glass units. It is applicable in frameless facade systems, windows, and translucent building structures.

Prior Art

Known solutions involve the use of adhesive systems and polymer seals to join two panes of glass in insulating units. However, these do not ensure adequate rigidity or wind load resistance for frameless facade applications.

Summary of the Utility Model

This invention addresses the shortcomings by introducing a method where panes are vertically fixed in a jig, and the inter-pane space is hermetically sealed using a rotational sequence. A spacer frame and adhesive with a reinforcing profile are used, resulting in a monolithic unit capable of withstanding significant external wind loads.

Detailed Description

The glass panes are placed vertically and filled with adhesive in the inter-pane cavity. A special rotating jig is used to seal each edge sequentially. The spacer is placed 10 mm from the glass edge. A reinforcing profile is immersed in adhesive and cured for 15–20 minutes before being repeated on the remaining edges. This ensures the unit behaves as a single block and meets rigidity and strength requirements.

Claims

1. A method for manufacturing a high-rigidity insulating glass unit comprising two or more glass panes that are hermetically sealed together using a rotating jig; the panes are vertically installed at a spacing of 2 to 30 mm; the perimeter space is sealed sequentially; a primary spacer frame is used; a reinforcing profile is embedded into an adhesive compound; curing is performed for 15–20 minutes before repeating the process for each pane side.

Certification

This patent was registered in the State Register of Patents of Ukraine for Utility Models on 27 March 2017, and issued under the authority of the State Intellectual Property Service of Ukraine.

Signed:
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