

Modern Technology and Individual Buildings Create New Tasks

How can you place window elements with integrated blinds and a dead weight of 700kg under a 2.0 meter deep roof?



The company IGM assumed this challenge for the new buildings being constructed for the department of internal medicine at the University of Würzburg's clinic. IGM had to rationally and safely integrate completely pre-assembled and glazed window elements with dimensions 7.0m x 2.5m and equipped with electric blinds into the structure.

IGM, located in Medard, (www.igm-gmbh.de) had to safely transport the elements through the construction site, sometimes for longer distances. Even two inner courtyards had to be equipped with window elements.



IGM selected Pannkoke Flachglastechnik GmbH in Lübeck as their contract partner for an assembly lifting device. IGM's decision to make Pannkoke Flachglastechnik GmbH their partner (www.pannkoke.de) was the right decision and ensured that they had the right equipment for the job. As is frequently the case, the problem of transportation was not considered until right before the construction was planned to begin. Lübeck was able to quickly provide a solution for the different window elements while adhering to the safety standards of EN 13155 that apply to construction sites.



The initial plan only included one roofing element of approximately 05 meters. The vacuum lifting device "Balance 2KS" has a non-fixed counterweight. To ensure that the device was suitable for a construction site, the moving motion was done using a battery-operated DC drive. To micro-control the inclination movement, the drive was equipped with a speed control mechanism that could also be controlled from an operating switch.



The vacuum generator used a separate battery-operated vacuum unit with 2-circuit technology, i.e. the vacuum unit had two independent vacuum circuits. This concept allowed a quick adjustment to the new conditions and also allowed a vacuum unit to be used for other cases.

The redundant vacuum system (2-circuit system) ensures the device safety in case one of the vacuum circles becomes untight. In this case, the other vacuum circuit would still ensure the normal load, since safety standard EN 13155 for construction sites requires each vacuum circuit be able to safely carry the normal load with a safety factor of 2. Each vacuum circuit has a separate control vacuum meter and a separate vacuum monitor. If the vacuum of a vacuum circuit falls below the standard, an optic and acoustic warning system alerts the operator of the situation.

The micro-level settings of the inclination angle with a non-fixed counterweight made the work much easier, minimized the safety risk and enabled the glazing to be accomplished quickly.

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