Pannkoke
Flachglastechnik GmbH

New Facade technique from RP Technik is converted with use of Pannkoke vacuum lifting device

For an office block in Hallbergmoos near Munich, Germany, RP Technik GmbH developed a new installation technique for steel-glass facades in element construction: the filigree System RP-ISO-hermetic 45 with window inset elements RP-ISO-PURAL. The individual facade elements have a height up to 12 m and a width of up to 5 m, for a total of 60 m² of facade in one piece. These mega-facade elements are installed efficiently with ensured quality at the construction site using a mounting device in the horizontal position, completely glazed and equipped with inset elements. With the help of a newly-designed vacuum lifting device these facade elements are installed in the building in pre-assembled anchorage consoles in less than 15 minutes. The entire mounting time, in comparison to conventional mounting, is reduced by approximately one third - and this without a cost-intensive scaffold for the building. This method sets new standard in facade technology.

The company RP Technik GmbH (www.rp-technik.de) developed the concept for an efficient production and installation method for facades. The facade elements are completely assembled in the horizontal position at the construction site on an assembling device. These individual mega-elements with a size of 12 x 5 m have a total weight of ca. 2700 kg.

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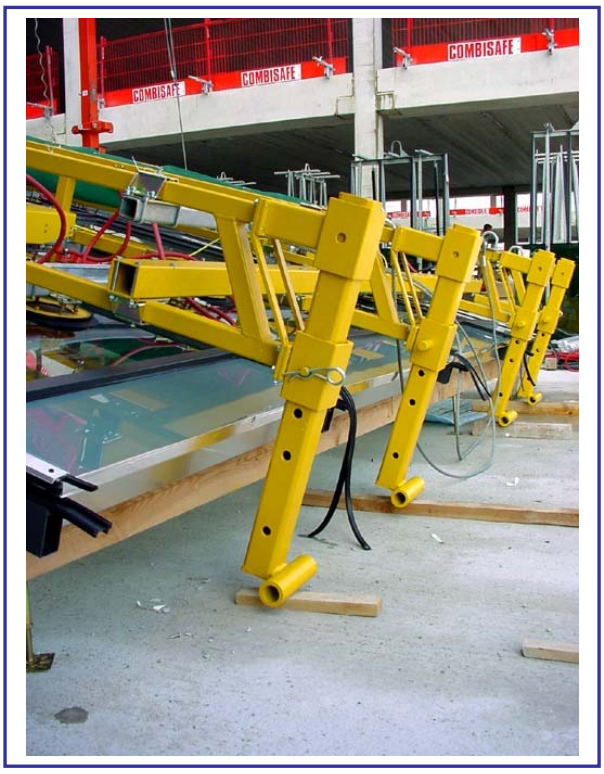

The special attachment of the glass-holding cleats of RP steel-glass facades to the carrying profile frame was made possible only through the use of special vacuum lifting technology from us, Germany because when such an element is lifted via the glass, this special attachment is the critical link in the chain.

In the RP facade systems the glass-holding cleats are fixed with drilling screws directly into the entire profile wall strength and thus reveal very high values in accordance to the pull out power. They are nearly twice as high as for steel facade systems with screw threads and are therefore without equal in comparison to the lower strip thread values of aluminium facade systems used especially in screw thread technology.

The facade system RP-ISO-hermetic 45 allows also the simple transport from the horizontal position till the vertical inset to the building via special vacuum lifting devices. The most important advantage is that the full attachment into the steel profile wall copes also with the jerky movements of the mega elements which cannot be avoided when transporting by crane.

For the solution to the lifting of the vertical transport and the inset of the mega-facade elements, we were contracted to construct the special vacuum lifting device.

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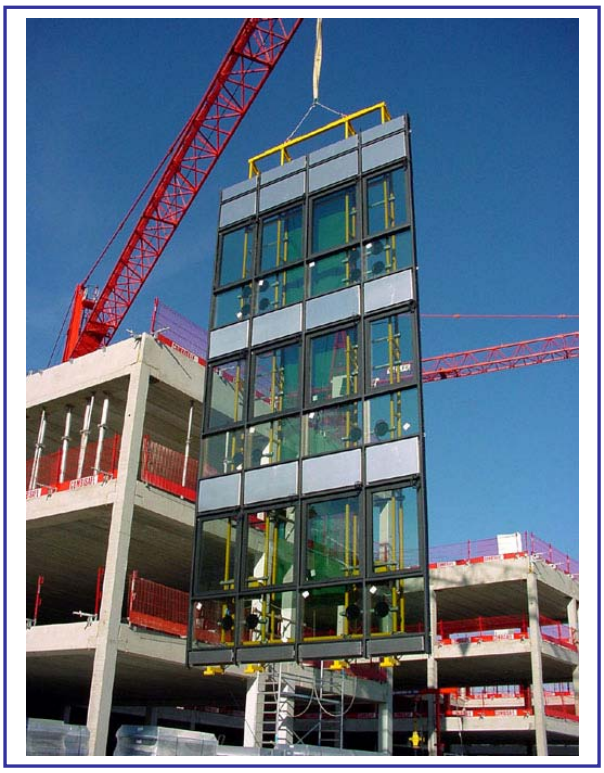

Because the vacuum lifting device 7201-HVSO needed also to be used for smaller facade elements, the concept for the device was worked out on the basis of two vacuum lifting devices connected together. Each of these vacuum lifting devices has for safety reasons a redundant vacuum system (2-circuit vacuum system). Each vacuum circuit has its own control vacuum meter and vacuum observation. Via an optical and acoustic warning means, a warning is given to the operating staff if the vacuum of one vacuum circuit is insufficient. The mains operated device has also of course a power failure observation system which signals a missing current supply to the operating staff .

The newly-developed vacuum lifting device 7201-HVSO from us is designed modularly and can be easily adapted to the corresponding elements because the vertical carrying bars as well as the suction cups are mounted so as to be movable. If necessary, the vertical carrying bars may have to be replaced or the connecting elements may have to be adapted. The device is also extendable through additional vacuum units. It is also possible anytime later to use several vacuum units with rechargeable batteries which would enable one to be independent of the mains supply.

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For the installation of the completed element, the vacuum lifting device 7201-HVSO is placed horizontally on the facade element. At the lower end of the vacuum lifting device are installation supports, via which the element is lifted, while a crane pulls the upper part of the vacuum lifting device slowly up. When the element hangs vertically it is transported to the place of inset. The installation supports are removed just before the element is placed. The element is positioned with the crane to the exact millimeter and is then lowered to the anchorage console.

The positioning and placement of the completed elements takes only a little time. 60 m² can be installed in less than 15 minutes.

The entire mounting time, in comparison to conventional mounting, is reduced by approximately one third. Using this type of installation negates the necessity of a complete cost-intensive scaffold for the building because the connection to the building occurs from inside and on each floor.

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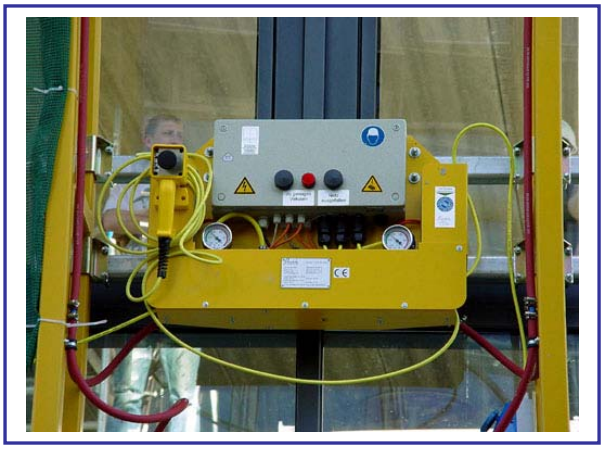

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