

Metal polymer for the firm state:

New industrial robot for RWTH Aachen

A new industrial robot has now been installed in the WZL machine tool laboratory at RWTH Aachen University. Particularly important here: the one hundred percent form and force-locking gap compensation between the absolutely flat base plate of the robot and the concrete floor. In this case, a special metal polymer provided for secure gap compensation.

With the new industrial robot of the WZL of the RWTH, new methods and approaches of machining metallic materials are being developed in the university's own Smart Automation Lab. The robot has six axes of rotation, combined with sophisticated sensors and software.

With different arm attachments, the robot is generally suitable for classic loading, grinding and welding jobs with a maximum payload of up to 150 kilograms. The main application area of this special robot solution are machining tasks where high path accuracy is important.

The robot is mounted on a mechanically prepared and therefore very smooth floor plate. Important for the safe position of the robot: the one hundred percent form and force-locking gap compensation of this base plate to the substrate - in the case of the WZL a material-based non-flat concrete floor. So here it was necessary to compensate for a minimal difference of partially one to two millimeters.

With its own reference letter on functional safety, the WZL once again relied on the metal polymer MM1018 from the coating and polymer specialist Diamant Metallplastic. In one step, the material achieves one hundred percent form and force-locking gap compensation between steel and concrete as well as steel and steel.

MM1018 can be applied pasty or liquid and is either filled or injected. When connecting the base plate of the robot to the concrete floor of the WZL laboratory, the decision was made to use the paste-like variant. It was the faster and easier way for this application. Without preliminary work, the material was applied crosswise to the concrete and then brought together with the bottom plate of the robot. The excess MM1018 extruded out of the now force-closed gap could then be easily removed before curing.

Diamant Metallplastic GmbH, based in Mönchengladbach in the Rhineland, develops, formulates and produces metal polymers and coatings for the metalworking industry, casting, steel and bridge construction and shipbuilding. Founded in 1886 and still managed as a family business, Diamant Metallplastic GmbH has a global sales network with over 40 foreign representations in major industrial centers around the world.