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Fiberglass Reinforced Polymer Gratings and Structures

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GANGWAYS FOR WASTE TREATMENT PLANT REVAMPING

CLIENT	SPECIAL WASTE TREATMENT COMPANY (NON-FERROUS METALS AND ELECTRONIC WASTE)
PLACE	ENGIS, BELGIUM
USE	FRP GANGWAY WITH ADJUSTABLE HEIGHT, PROVIDED WITH A CANTILEVERED PART
PRODUCT	PULTRUDED PROFILES, FRP COVERED GRATINGS AND LAMINATEDS, STAINLESS-STEEL AND PTFE SPECIAL ACCESSORIES
SERVICE	PROJECT, PRE-ASSEMBLY

OBJECTIVE

M.M., on behalf of a Belgian company involved in various industrial fields, has got the assignment to design and manufacture two walkways to access the machinery for the treatment and processing of electronic waste. The two eight-meter long walkways must have a cantilevered part, to make it possible for workers to reach the machinery by overpassing the pipelines that run along the equipment. The flooring over the pipelines had to be removable to allow maintenance operations. Another requirement was that the thickness of the frame had to be as thin as possible, in order to make it possible for the workers to be provided with a correct and ergonomic working position on the walking surface. Lastly, it had to be considered that the previous laying surface was sloping and the hydraulic and electromechanical equipment are prone to vibrate which made it necessary to use a slender and height-adjustable structure.

- Manufacture a modular gangway system in the respect of the dimensions and features required by the client
- Design a slender and height-adjustable structure
- Design a walking surface with removable elements suitable for maintenance operations
- Adapt the structure to the existing machinery, considering proper dimensional tolerances and distancing from the pipelines of the machinery

SOLUTIONS

The client chose a product made of composite material instead of one made of metal. This choice was conditioned by the high resistance of FRP to corrosion and by the ease to install the elements which were completely or in part pre-assembled. M.M.'s technical department followed the whole project from the design to the on-site setting through its local representative. First of all, the existing metal structure was cut off in order to remove it from the installation site. After the iron structure was removed the steal basement and the anchoring bolts from the old structure were removed as well. Then, a cement base was laid to reset the floorcovering for the installation of the new FRP structure. After the new structure was taken to the installation site, the surface was cleaned and the tracing for the anchoring was made in order to firmly secure the structure onto the floor. The PRF staircase and platform were then positioned and attached and later the whole structure was anchored to the floor. Ultimately, the bracings were installed to make the structure rigid. The whole removal of the old structure and the complete installation of the new one required only 2 working days, including the 12-hour pause to let the cement mix to harden. This system for the setting of pre-assembled modular elements is swift and guarantees high quality with a considerable reduction of work time