

# Roof arch design with sealing slurry in wet-gun spraying

## Roof arch design for Mülheimer underground stations

In Mülheim an der Ruhr, the underground stations Stadtmitte and Schloss Broich are now being rebuilt.

One special task in this construction was designing the roof arch. PFT field service worker Oskar Buchhorn recommended a PFT machine combination consisting of the compulsory mixer PFT MULTIMIX, the open conveying pump PFT N 2 V and the spraying gun appropriate for decorative and protective plastering. PFT dealer Wilhelm Dahmen in Issum took the responsibility for supplying and operation of the machines, including training the employees of the painting firm assigned with the spray gun work, R. Kleineberg of Duisburg.

As background preparation for the decorative painting system, the roof had to be provided with a thin layer of filler – no ordinary filler, but one with a special set of characteristics: it had to cling reliably to the base layer, possess a light, even raw surface structure and should finally also prevent moisture from seeping out of the surrounding ground area, thus discolouring the subsequent coat of paint.

For this purpose, a two-component slurry called Mapelastec from the material manufacturer Mapei GmbH in Erlenbach am Main was selected. The material bridges cracks, is fibre-reinforced and distinguished



*The good pumpability of the spraying material enabled the use of a 25er mortar hose. The nozzle holder was glad that he had to manipulate less weight, since working over your head is hard enough as it is.*

by dependable clinging to the base layer. The PFT MULTIMIX proved to be particularly effective for mixing this material; in just a short time, it produced a first-class, homogenous mixture.

In order to carry out the spraying work efficiently, a mechanical treatment with gun spraying was necessary. Then the surface of the arch had to be levelled off. Unevenness was visible in the area of the butt joints of the individual roof panelling elements, which was evened out with the flattening spatula. Since the filler must be processed specifically for a damp base layer, the surfaces were pre-soaked. As soon as the base layer was dried to a "slightly damp" level, the slurry could be sprayed.

The material is distinguished by long processing times and good pumpability, and can

be easily transported over long distances. An easy task for the PFT N 2 V.

The good conveying action of the slurry allowed for the use of a conveying hose with a nominal diameter of only 25 mm instead of the usual 35 mm. That means that the nozzle guide was lighter to handle. The markedly easier handling was even more welcome considering the work had to be carried out completely overhead.

The PFT spraying gun applies clean and sharply defined injection cones; this provides for a precise material application with little rebound. In this way, the desired surface structure could be achieved through the spraying procedure alone, without further modifications.

The PFT machinery greatly

simplified the work in more ways than one. Easy handling, considerable time-saving and an ideal work results.



*The spraying materials were mixed with the PFT MULTIMIX and sprayed with the PFT N 2 V in one work phase.*