Mobilising reserves with flow screed at the Hochsauerland vacation resort

Switching to flow screed makes it possible to speed up the construction process. A current example is supplied by the construction of a large resort area in Hochsauerland. In spite of adverse conditions, the flow screed firm achieved placement rates of 140 to 160 m^2 per hour. 1000 m^2 a day is not unusual.

Gran Dorado GmbH, a subsidiary of Coco Park GmbH, Berlin, is currently building a resort town in Medebach/Hochsauerland with 575 apartments, a hotel, restaurants, a swimming pool complex and other sport and recreation facilities. The foundation was laid in March 1993. The holidays park was to be ready for occupancy by July 1st, 1994. The hotel and park centre were essentially completed. However, delays occurred while building the bungalows. To accelerate the construction cycle, the construction-site supervisory authority decided to change over to flow screed for the delayed stages of construction. Since flow screed hardens enough so that it can be walked on after 24 hours and fully hardens after 3 days, the subsequent finishing trades can resume work much earlier than was possible with a cement floor. The goal was to finish 10 or more buildings a day, whereas with cement floors only about 2 buildings per screed construction crew were possible.

According to Horst Martins, systems analyst for the Knauf branch office in Neuss:

The construction of the Gran Dorado holiday park in Medebach/Hochsauerland is nearing completion.

"With a company experienced in using flow screed, we were able to save a considerable amount of time." In February 1994, the company Adam Meier in Ellleringhausen was commissioned to pour flow screed into 370 bungalows. Meier is, so to speak, one of the pioneers of flow screed. As flow screed became popular at the start of the eighties, Meier was one of the first companies to adopt this technology. "Since 1985 I've only been working with flow screed! Screed must flow! I have always said this." By working closely with the machine equipment for screed placement, he became a critical partner for his suppliers. They in turn appreciate the fair judgements of this experienced craftsman.

The PFT FMP multifunctional flow screed mixing pump makes it possible to provide screed to 10 to 12 flats a day although the pouring site has to be changed several times.

In reference to the Hochsauerland vacation resort, Adam Meier asked himself the question how he could best manage the work volume from the machine-technical side. The construction site conditions were not exactly ideal for high pouring and placement rates. As billing is done on a square metre basis, the hourly output is of critical importance for the company: Either you earn money or else "help finance" the project.

Until now, his machinery consisted of three PFT GXE flow screed machines and a PFT T 2 E. His technical advisor, Wolfgang Fernholz from the PFT partner dealers PMF, Siegen, drew his attention to a machine that had just been introduced to the public at the "bautec '94" trade fair in Berlin: the new high-performance PFT pump type FMP. Adam Meier was immediately impressed: "It will allow me to achieve the required high placement rates!" Under the hood of the

FMP are PFT modules that have proven themselves time and time again:

– The ZP 3 V booster pump with 7.5 kW infinite drive gear, T 10-1.5 mortar pump with over 120 l/min at 10 bar pumping pressure.
– The CPE 5.5 kW container mixing pump for flow screed type, R 9-1.5 mortar pump, approx. 130 l/min.

The unique feature is the overall concept that has been specially adapted to pouring large quantities of screed and frequently changing the construction site. The fine details are the fully automatic control unit with remote control, aeration compressor and water pump as well as a levelling and moisture control facility on the mixing pump.

The system is mounted on a single-axle lorry trailer and, as a working machine, exempt from taxes and insurance. The individual electrical connections are combined in a cable harness so that the system can be connected and started up in the shortest of time. The connected load is 32 A – 380 V. The actual mortar consumption can be calculated at any time using the built-in water meter. A very special advantage of the FMP is that the material can be re-pumped into the container even when pouring without impairing the consistency: This saves valuable time.

The FMP can be used in three different ways:

The pumping of the material container from the bottom (from the left, the hose to the silo vehicle, at the right to the installation site) is possible when pouring without impairing the consistency.

1. for mixing and pumping ready-mix dry mortar,

2. as pump for flow screed from the mobile mixer.

3. from multi-chamber silos.

This screed mixing pump can be flanged onto silos with a 250 mm outlet valve. In addition, adapters are available for connecting to silos with a 350 mm and 400 x 400 mm valve and also for processing material in bags. It is also possible to pump in approx. 25 t of flow screed directly from the silo lorry and process it in approx. 2 hours time. Thus the logistical costs for acquiring a silo can be saved.

The pump capacity of the maintenance-free screw pump with rates of 20 to 120 l/min can be adapted to the characteristics of the mortar. This allows you to process flow screed and other mortar with a granular size of 8 mm. The pumping distance is 100 m and more.

At the construction site in the Hochsauerland holiday park, Knauf flow screed FE 50 was used that was supplied in two PFT container types, C 8.000 with 8 m^3 and C 13.000 with 13 m^3 capacity. The material is delivered to the construction site in silo lorries. A pressure of 0.8 to 1 bar is used for filling. It is advisable to fill the containers from the bottom. One filter bag is connected to each of the ventilation lines to ensure a dust-free work environment when filling and to catch the overflowing material.

The flow screed used yields approx. 53 l of ready-to-use mortar from 100 kg ready-mix dry mortar at the prescribed slump of 40 to 42 cm. The screed layer is poured onto the insulating course installed by other companies. The placed screed then levels out virtually by itself. For a perfect surface finish, the Meier construction crew employs special PFT brushes. The thickness of the screed in the centre is usually 3.5 to 4 cm.

After the completion of approximately 80 buildings, foreman Martin Hantke gave a provisional appraisal: The machine processes 10 to 12 t of material per hour. When distances at the construction site are especially demanding, conveying distances of up to 180 m are used. On the average, the machine conveys 100 litres per minute. Since 35 mm mortar hoses are commonly used, a pressure of 15 to 18 bar is generated in the process. More than 500 t of flow screed had been processed with the first pump units by the middle of July.

Adam Meier in action: "Screed must flow."