

New System Technology Fully Electric

An ironwork uses its own photovoltaic electricity capacity to operate its new pre-treatment and powder coating plant to reduce CO₂ emissions.

Price fluctuations for primary energy sources such as gas and oil as well as the question of securing supply influenced the planning of a new pre-treatment and powder coating plant for Wittigsthal GmbH (Germany). The metalworking company decided to heat it electrically, as its own photovoltaic power capacity was already an important prerequisite for an

economically viable electricity cost mix. In addition, the company had already gained practical experience with electricity as an energy source through an electrically heated oven. The contract for the construction of the plant was awarded to Noppel from Sinsheim (Germany), which already had experience in the realization of energy-efficient plants.

Reduction of energy requirements due to electric heating

The direct, electrical temperature control in each part of the system eliminates the efficiency losses that usually occur when heating with hot water, oil or gas. This in itself significantly reduces the heating output in comparison. The infinitely



Inlet zone of the new pretreatment plant.



The finished coated workpieces.

variable thyristor-controlled temperature regulation of the individual heating registers further increases energy efficiency, as they only require the energy needed in each case. Other factors in the reduction of energy requirements in daily operation are the block dryer design of the adhesive water dryer and powder incinerator, the energy-saving A-locks and the Noppel Isoplus insulation.

Individual adaptation to the building fabric

In addition to the energy efficiency requirements, the confined space was a challenge for the plant manufacturer's technicians. A pre-treatment and coating line had to be installed on the second floor, whose conveyor technology connects separately arranged feeding and receiving stations with the plant systems.

This was intended to bring together previously separate individual systems and thus reduce the number of workpiece transports and operations.

The low floor loading capacity on the upper floor required intelligent planning and the use of weight-optimized conveyor technology and system components. In order not to exceed the permissible load capacity, only light forklifts and work platforms could be used during assembly. Due to the onset of winter, the system components had to be brought to the upper floor by crane and delivery platform in snowy conditions.

Conclusion

The projected quantities for energy and fresh water requirements as well as waste water production are adhered to during operation and in some cases even un-

dercut. The new compact pre-treatment and powder coating system makes the operators independent of distant coating service providers. This ensures short delivery times for the company's own products and enables flexible order processing and cost-effective in-house production. The elimination of previously necessary intermediate operations and transportation has also relieved the workload of employees. //

Contact

Noppel Maschinenbau GmbH

Sinsheim-Dühren (Germany)
Peter Singer, Managing Director
info@noppel.de
www.noppel.de