

Rapid results – aluminium strip leaves the drying tunnel perfectly dry after two seconds.

Quick Pass-Through Belt Drying

Installation of an energy-saving condensation type replacement drying system

Alanod GmbH & Co. KG specified the following requirements to be met by Harter – to improve their wide aluminium strip hot air drying quality, to increase the conveyor belt speed, and to reduce the high energy consumption. The replacement of the previous hot air dryer cut the power consumption of the whole facility by more than half.

Alanod has been producing high quality anodized or PVD coated aluminium strip since 1976. The specially coated surfaces are mainly used in the lighting industry. But anodized aluminium strip is also produced for decorative purposes, for construction, automotive and

computer applications as well as for the solar industry. Three computer-controlled, state-of-the-art anodizing lines are used to finish as much as 30,000 tons of aluminium strip a year. The 220 m max. long lines can anodize and finish polish strip as wide as 1,250 mm and as thick as

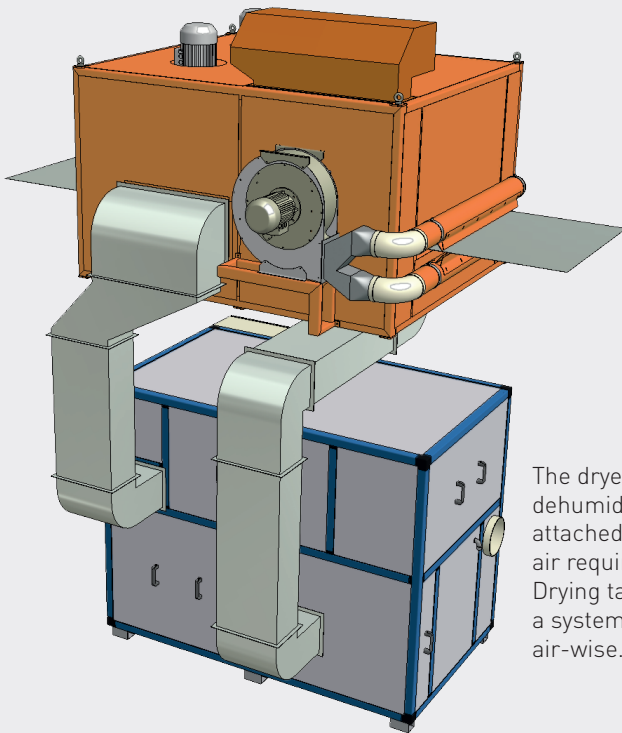
1.5 mm. Also, four vacuum coating lines are used to apply, in continuous operation, a high gloss coat on aluminium strip as wide as 1,250 mm and 0.15 to 1.2 mm thick.

In a search for drying options Alanod came across the Southern German company Harter. The drying system manufacturer had developed the so-called heat pump based condensation drying technology more than 25 years ago and has installed many hundreds of dryers in the surfacing field ever since. Following successful testing in Harter's pilot plant station Alanod decided to invest in this energy-saving system.

Harter installed a new drying tunnel. Aluminium strip passing through this tunnel is dried in only two seconds. Drying proper is supported by non-compressed air blowing. Special nozzles at the tunnel entrance provide the perfect air knife. Today, the drying process temperature is about 90 °C. The previous process required 160 °C (eight bar steam main). Alanod could also increase their belt speed to as much as 50 m/min – mark you, with the strip perfectly dry! One of the most important targets – minimization of quality cost – was thus attained.

The use of the Harter dryer reduced the steam heating power from 174 kW to 30 kW electrical. The new drying system decreased the power consumption of the whole facility by 50 to 60 percent. The requirement for an adequate energy balance, which was important to Alanod, was also met. The new drying system was also a progress in terms of ecology – the previous hot air drying system had emitted 600 m³/h of hot air into the environment.

Each dryer has a so-called Airgenex® dehumidification module attached. The module conditions the air required for the process. The latter is highly dehumidified and



The dryer has an Airgenex® dehumidification module attached. It conditions the air required for the process. Drying takes place inside a system which is closed air-wise.

Heat recuperation in the closed system is energy-efficient and reduces carbon dioxide emission enough for buyers to benefit from government subsidies.

approach enables drying at low temperatures which prevent product degradation and allow earlier subsequent processing. Temperature reduction, however, although a factor for Alanod, did not range among the vital factors as described above.

Today, Alanod's aluminium strip is perfectly dry and free from staining, ready for further processing. Better drying quality, increased throughput, energy savings and optimum process reliability on top of it – the customer requirements were more than fully met.

heated before it is passed over the aluminium strip. Now, the unsaturated air quickly absorbs humidity by physical action. Subsequently, the moist air is cooled in the dehumidification module, and the water condenses. Then, the air is reheated and returned to the dryer. This circuit is thus closed

air-wise and almost emission-free. It is always fully independent of the ambient climatic conditions. Highest process reliability is ensured.

Heat pump based condensation drying is normally effected at temperatures between 40 °C and 75 °C ab. The alternative physical

Contact:

Harter GmbH
 Norbert Fessler
 D-88167 Stiefenhofen
 Tel.: +49 (0) 8383-9223-12
 norbert.fessler@harter-gmbh.de
 www.harter-gmbh.de



PERFECTION IN EVERY
DRYING MATTER.
 THE BEST KNOWS NO ALTERNATIVE.

Experience
 drying technology
LIVE
 in the HARTER
 trial station

HARTER GmbH | ☎ (+49) 08383-9223-0 | info@harter-gmbh.de | www.harter-gmbh.de