

# Energy saving UV drying from Todesco

Italy-based tannery finishing equipment specialist Todesco has patented a new UV drying system, Purple, and teamed up with leather chemicals producer GSC Group for a single solution technology aimed initially at automotive leather makers.

**L**aunched at the Simac Tanning Tech trade show in Milan in September 2023, the new technology is the culmination of a three-year project born during the dark days of the Covid-19 pandemic. Todesco Managing Director Paolo Todesco told ILM that the company supplies its machines to around 80% of the world's automotive tanners. During the pandemic, he and his team researched and devised a system which reduces the energy consumption during leather drying after the finishing topcoat has been applied in the spray cabin, patented in every country where automotive leather is made. Drying the topcoat finish is one of the highest energy uses in finishing, although in the overall footprint of leather finishing has a lower impact than wet-end processes.

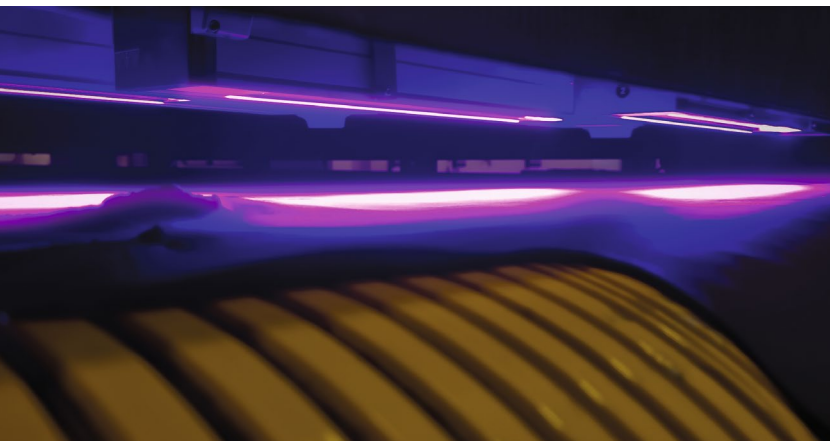
Todesco said: "Following Covid and global increases in energy costs, our customers have been asking for us to provide solutions that both lower their overall carbon footprint and reduce their

"The resulting leather is less sticky after finishing due to the lower solvent content and the UV drying method eliminates any 'sintering' effect on the surface," noted Todesco. Sintering is when a faint white film or spots appear on the leather surface during drying. He says the initial plan is to focus on reaching out to customers in the automotive and transport leather segments. However, in time, the plan is to roll out the UV drying technology to furniture leather tanners as well as fashion segments including footwear, garments and leather goods.

## Special topcoats from GSC

When devising the new system, Todesco looked for a chemical industry partner, turning to GSC Group, which is headquartered only 10km from Todesco's factory in the Arzignano tanning district of Northern Italy. Paolo Todesco describes the result as a "win-win" situation for both the companies and their customers.

"We are providing two topcoat solutions, a dull and a bright, that work with the UV drying lamps at low temperatures," explained



energy costs. Drying at lower temperatures, with the special topcoats supplied by our partners at GSC, also reduces the levels of volatile organic compounds (VOCs) in the tannery as well as reducing the carbon footprint and energy bills."

The Purple UV unit is located at the end of the drying tunnel and reduces the temperature of the leather topcoat drying to lower than 40°C. The prototype version, housed at Todesco's pilot plant in Italy, measures 0.5 m deep, 3.4 m wide and 1.2 m high to cover the working area of full automotive upholstery hides. Purple operates at 12 m/min for topcoat and colour coat applications with the UV rays accelerating the chemical reactions. According to data collected by the company, the UV system provides energy savings of up to 66% compared with a steam drier and 73% compared with an infrared drier. Emissions are reduced by 57% versus steam powered drying and a 75% reduction compared to infrared.

Mark Chatwood, Global Automotive Manager at GSC Group. "The UV light activates the isocyanate crosslinkers, which react with either of the two special topcoat resins at low temperatures. This has numerous advantages for the finisher such as lower energy use, a better area yield thanks to lower temperatures, fewer VOC emissions in the workplace and a lower footprint."

The topcoats are applied by spray in the usual way, the preferred method for automotive applications, but can also be added by rollercoater. When asked what the physical and organoleptic properties of the final leathers were after the UV drying process, Todesco confirmed that all the UV-dried sample tests found no differences with standard drying processes and that the leathers all meet OEM and regulatory standards. Todesco also said that one side effect of the UV drying system was that the UV light also sterilises the leather surface. |