

Development of a VOC-free base for liquid metal coatings

14 June 2019, 02:00

The Dutch VeroMetal company offers a unique process that can be used to finish any surface or design with a metal coating using a cold process. A mixture of a binder and metal powder can be sprayed, poured or applied using a spatula and dries to create a surface with the optical and physical properties of metal. The surface can be sanded, polished, patinised or oxidised during post-processing.

Sirris was approached by Verometal to assist in the development of an innovated and improved version of the transparent base coat to overcome current limitations of a water-based resin, in coating thickness, curing time, insufficient hardness and limited gloss.

High-quality VOC-free alternative

VeroMetal wanted to develop a transparent base that was free of volatile organic compounds (VOC) with properties similar to the superior solvent-based products.

The resin had to be compatible with VeroMetal's metal powders and should allow easy processing..

The use of a high-quality binder with a high solid level would allow the application of a single coat with high coating thickness that could cure quickly to form hard, crack-free surfaces.

Using a VOC-free binder reduces the impact on the environment and, since no volatile organic compounds are released after curing, coated surfaces can also be used in private homes and shops and for furniture.

Thoroughly tested

VeroMetal turned to the Sirris Coating Lab and its infrastructure in collaboration with PLPCoatings, specialised in professional surface treatment. A coating platform was set up for the development, pre-treatment, application and curing to develop a technology that can be applied on an industrial scale and that is suitable for 3D units. The resulting coating was fully assessed by Sirris and subjected to endurance tests to guarantee an efficient finish.

Authors