SICOMIN SUPPLIES COMPLETE COMPOSITE MATERIALS PACKAGE FOR GILDED DOMES OF THE HOLY TRINITY CATHEDRAL

The Russian Orthodox spiritual and cultural centre, named the ‘Holy Trinity Cathedral’, is a stunning addition to the 7th arrondissement in Paris. An official UNESCO World Heritage site, the recently inaugurated building is located in the same district as the Eiffel Tower and Quai Branly Museum and sits majestically on the Left bank of the River Seine.

The 4,800 sq. metre cathedral was designed by renowned architect and city planner Jean-Michel Wilmotte and was built by French construction company Bouygues. The building took two years to complete and opened in October 2016. The structure features five gilded domes, a parish centre, offices and apartments, a French-Russian primary school and a cultural centre.

Sicomin delivered a complete package of composite materials to produce both moulds and parts for the 5 gilded domes. Working alongside Multiplast (part of the Carboman Group), main contractor Bouygues and engineering consultants Calcul Méca, Sicomin was able to support in realizing architect Jean-Michel Wilmotte’s stunning contemporary design for the Russian Orthodox Cultural and Spiritual Centre in central Paris.

Sicomin supplied materials for the dome tooling to Décision SA, a Swiss based Carboman Group company, who infused a set of glass fibre multiaxial fabric and balsa reinforced moulds using Sicomin’s SR8100 / SD7820 cost effective 120°C Tg epoxy infusion system.

The dome panels themselves were produced at Multiplast’s factory in Vannes, France using
Sicomin’s SR8100 / SD4772 epoxy infusion system and a specially developed glass fibre reinforcement lay-up. By combining their heavyweight quadaxial fabric style QX1180 with a woven 500gsm fabric, Sicomin was able to provide a laminate with no print through and excellent top surface flow characteristics to prevent dry spots.

Using a Sicomin composite material solution for the domes had many advantages for this project. The domes light weight allowed for rapid installation as well as reducing the dead loads that must be carried by the building structure. Another benefit of building the domes off site was that both manufacture and decoration of the domes could be carried out in controlled conditions without the weather impacting the production process.

Sicomin carried out extensive DSC testing in their laboratory to optimize the post curing procedure to ensure the stability of the finished parts before craftsmen applied 86,000 leaves of real gold to the 640m² surface area of the domes.