



ICONIC LANDMARK CREATED WITH SICOMIN'S HIGH PERFORMANCE EPOXIES

The Celtic Cross is a majestic structure that stands 20 metres high beside the River Tamar in Saltash on the Cornish border. This striking masterpiece was the brainchild of the highly regarded artist, Simon Thomas, who aspired to create an iconic work that celebrates Cornwall's cultural history and projects the region's image as a vibrant part of the modern world.

With the help and expert advice of Matrix Composites, Sicomin's exclusive UK distributor, a selection of Sicomin's technically superior and high strength epoxy solutions were specified for the structure's production.

Simon Thomas first conceived the idea of the Celtic Cross in 1999. However, it wasn't until 2011 that it became a reality when the project received financial support from the National Lottery Fund and Saltash Town Council.

Constructing the Cross was very much a collaborative process involving specialist teams of composite technicians, engineers and skilled fabricators. Optima Projects conducted the structural analyses; Independent Composites Ltd. produced the three carbon spars or 'planks' that

form the structure's immense framework, and Gateguard, a replica aircraft manufacturer, assembled all the components. The overall build process was managed by Stig McDonald, an experienced boatbuilder and composite technician.

For such a large scale installation, structural integrity was obviously paramount and Sicomin's advanced epoxies were able to offer supreme strength whilst maintaining its artistic dimensions. Durability and resilience of the structure also needed to be considered as the Cross is positioned on the west coast of the UK which often endures extreme weather conditions.

In terms of materials selection, Sicomin's SR8100 product was used to produce the carbon spars that run from the base to the structure's head. >>>



These 16 metre planks were infused by Independent Composites Ltd at ambient temperature on a custom built, heated table and then transported to an aircraft hangar at Newquay Airport for final assembly.

SR8100 is a two component, very low viscosity epoxy that is designed specifically for infusion and RTM techniques. Thanks to LR and Germanischer Lloyd certifications, the system is very popular with Sicomin's Industrial, Marine, Energy, Transportation, Sports and Leisure customers. It is compatible with a variety of hardeners and allows large parts with complex reinforcements to be infused successfully in one operation.

SR8500 was specified for all the hand lay up processes including the production of the structural rings that form the wheel or 'head' of the Cross. This product was selected due to its low toxicity formulation and compatibility with a wide range of hardeners - again offering increased flexibility in terms of working times.

The wheel section is held together through a complex set of inter woven 'links' that are gilded in gold leaf and then coated with Sicomin's Surf Clear system. Originally formulated for surf and windsurf boards, this self-levelling epoxy can be applied to glass, carbon and aramid laminates so is suitable for all manner of castings, models and components. Surf Clear was mixed with copper powder, brushed onto the structure, then after curing was put through a process of patination - producing the striking "old copper" visual effect - similar to, and very much in keeping with, the South West's maritime tradition.

"Sicomin's products produce reliable results and are very easy to work with. Matrix delivered a comprehensive service and supplied technical solutions to all our design challenges", commented Simon Thomas.

In April 2013 the Celtic Cross was transported 128 miles by road and then installed by a 100 tonne crane. Sicomin's robust and high strength epoxies played a major part in the project's success and the dedicated teams involved rose to the challenge of combining art with a specialist engineering project.

Special thanks and acknowledgements:

David Emuss, Independent Composites
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