



MARINE

EPOXY RESIN SYSTEMS FOR MARINE



It's all in the Chemistry

www.sicomin.com

Sicomin has provided innovative epoxy resin solutions to the marine market for more than 40 years, supplying a complete range of tooling materials, resins, adhesives, reinforcements, core materials and ancillary products to leading yacht and ship builders around the world.

Dedicated to long term partnerships with marine industry specialists, Sicomin provide expert practical knowledge and technical support, whilst also striving to develop composite solutions that have less environmental impact on the oceans themselves. Sicomin's market leading GreenPoxy™ range of bio-based epoxies enable more sustainable construction with uncompromising performance.

Many of Sicomin's marine specific products have also received DNV GL type approval, providing ship, yacht and board manufacturers with reassuring 3rd party confirmation of the products' exceptional quality, performance and consistency.



Infusion Systems



www.sicomin.com/
bio-based-epoxy



INFUGREEN 810



High-performance bio-epoxy system for infusion.

- Up to 38% bio-based carbon content.
- Very low viscosity clear system for infusion of small to very large parts, including very thick laminates.
- Room temperature infusion system.
- Choice of hardeners to adjust cure times.

CASE STUDY



SICOMIN'S GREENPOXY® BIO-BASED RESINS – SUSTAINABLE MATERIALS WITH UNCOMPROMISING PERFORMANCE FOR THE GREENBOATS® FLAX 27

GREENBOATS® has been producing innovative natural fibre composites at their Bremen facility for more than a decade, expertly crafting a range of marine and industrial products with a mission to use 100% renewable and sustainable raw materials in sandwich composite structures.

Sicomin has partnered with GREENBOATS® since the very beginning, with TMC O&T Corporation – Sicomin's German distributor – supplying materials and technical support as hardener and infusion production processes have been optimized for natural fibre composites.

The FLAX 27, an 8.2m classically styled daycruiser designed by renowned naval architect Sabotelli & Co is the most complex, no compromise, natural fibre composite project realized by GREENBOATS® to date. The hull, deck and internal structure of the vessel were infused with Sicomin's very low viscosity GreenPoxy INFUGREEN 810 resin and Flax fibre reinforcement fabrics.

Vacuum infusion with Sicomin's INFUGREEN 810 produced crystal clear natural fibre laminates with outstanding mechanical properties, whilst the closed mould process also improved working conditions in the factory. Available with a choice of hardeners to adjust the curing time as required, INFUGREEN 810

READ CASE STUDY

 **VIEW
INFUGREEN 810
DATASHEET**



SR8100



 **VIEW
SR8100
DATASHEET**

Low viscosity epoxy system formulated for resin transfer processes such as injection or infusion.

- Particularly cost effective for infusion production methods.
- Very low viscosity at ambient temperature cure.
- Different hardener speeds allow the moulding of small to very large parts with rapid demoulding time.

www.sicomin.com/
processes/infusion



CASE STUDY



ENATA CHOOSES SICOMIN EPOXIES FOR UNIQUE HIGH PERFORMANCE FOILER

The ENATA FOLIER is a radical evolution in motor yacht design with its unique hydro-foiling system effortlessly flying the yacht 5.5m above the waves. Stable and smooth in flight, ENATA has designed the FOLIER to deliver the comfort of a luxury yacht with the performance and handling of a super car. Sicomin has worked with ENATA since 2016 and was the natural choice when it came to the selection of epoxy resins for the project.

The FOLIER brings together various features, making it stand out from the 10m motor yacht crowd, not least because its sleek exterior design conceals you of a vessel that could easily appear to be the most common motor yacht.

Its four patented foils enable the hull to fly 5.5m above the water, providing a comfortable ride at full speed and allowing the FOLIER to make sharp and speedy turns, much like you'd expect from a supercar. The fully retractable foils, which do not intrude or impact on the living space, also give options for more 'conventional' motoring at the head of a bay, and with the foils retracted when moored, care and maintenance of the system is straightforward.

The propulsion system comprises two 300HP diesel-electric hybrid engines, which work with custom electric propulsion, providing different fuel configuration options when idling, and working with the foils to provide the responsive lift at up to 40 knots and in varying weather conditions.

ENATA's philosophy is defined by high performance, and to achieve this across all their applications – from World Championship-winning aerospace designs to 10m foils to uncharted property – designs are underpinned by advanced composites technology. The clear construction choice for the FOLIER was off-shore carbon fibre and epoxy resin. Carbon fibre provides high strength and stiffness, particularly required for the four foils, and enables the

READ CASE STUDY





SR1710



VIEW
SR1710
DATASHEET

Extremely high-performance structural epoxy system for resin transfer processes such as infusion and injection.

- Very low viscosity.
- Low reactivity hardener for large part manufacturing.
- Very high mechanical properties, especially inter laminar shear strength.
- Excellent retention of mechanical properties in a wet environment.

[sicomin.com/
processes/infusion](http://sicomin.com/processes/infusion)



CASE STUDY

Sicomin
Epoxy Resins and Adhesives

**SICOMIN EPOXY RESINS AND ADHESIVES
- POWERING QUIET AND CLEAN FLIGHT
AT CANDELA BOATS**

Sicomin, the leading formulator and supplier of epoxy resin systems and high-performance composite solutions is proud to announce the qualification of its epoxy infusion resin and adhesive products for the series production of Candela's groundbreaking new all electric, folding boat.

Crafted in Sweden, the Candela 7 is a sleek 7.3m open-masthead fast catamaran carbon fibre construction and hydrofoil to create a near silent, 100% electric craft with a range of 50 nautical miles for 25 knots on a single charge. Absolute focus on weight reduction is the key to this game changing performance. With a wet weight of only 1300kg the Candela is around 45-50% lighter than a traditional glass fibre hull fast powered boat.

Sicomin joined the project at an early stage, working with Candela to supply high-performance epoxy laminating resin for the manufacture of the initial prototype vessels. With the ramp-up of series production, the company has also been able to support Candela's targets to industrialise the production process, providing materials and process support that are validated with relevance on the water testing.

Impressive composite engineering work by Candela's design and engineering team, experts with backgrounds in aeronautics, composites, fishing yachts and automotive engineering, delivered a fully

READ CASE STUDY



Laminating Resins

GREENPOXY® 33



Bio-based hand laminating system.

- Up to 35% bio-based carbon content.
- A high-performance bio epoxy resin.
- Fast curing, clear laminate.
- High mechanical properties.
- Excellent wetting out properties resulting in a low resin consumption.



[www.sicomin.com/
bio-based-epoxy](http://www.sicomin.com/bio-based-epoxy)



VIEW
GREENPOXY® 33
DATASHEET





Sicomin epoxies can
be tailored for all
production parameters

SR1280

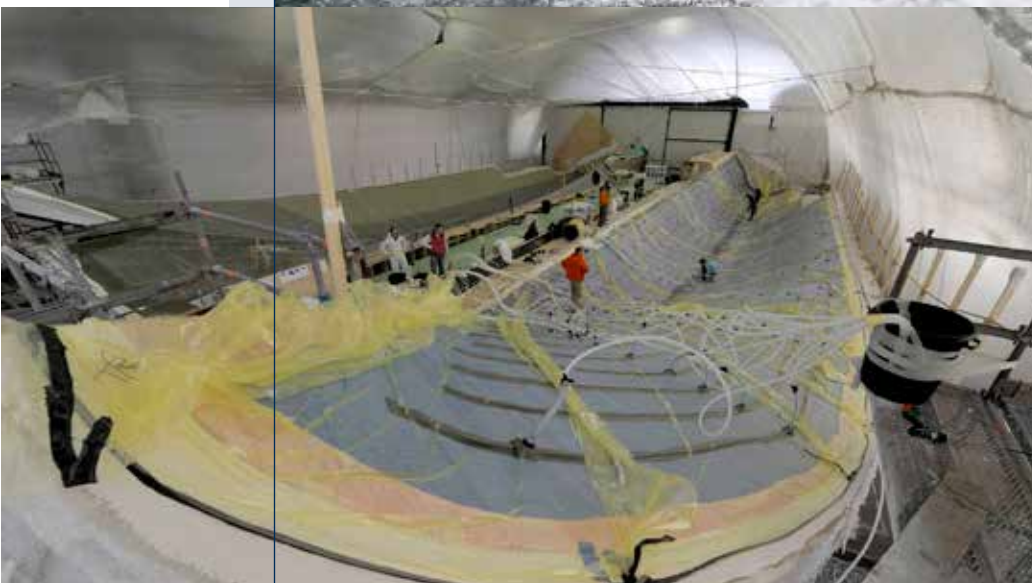


**VIEW
SR1280
DATASHEET**

Epoxy system for hand laminating, infusion, tooling and casting.

- Choice of variety hardeners to adjust reactivity.
- Hardeners SD 4771, SD 4773 and SD 4775 are certified for shipbuilding by DNV-GL.

[sicomin.com/
processes/laminating](http://sicomin.com/processes/laminating)



SR8500



Multi-purpose epoxy system suited to a wide range of marine composite components.

- Excellent mechanical properties. Working temperatures up to 70°C.
- Simple mixing – One resin and two hardeners, mixable in any proportions, to customise the reactivity.
- SR 8500 Black Gel thixotropic formulation also available.

[sicomin.com/
processes/laminating](http://sicomin.com/processes/laminating)



**VIEW
SR8500
DATASHEET**



DNV GL and
Lloyds Register Type
approval for key
Marine products

CASE STUDY

Sicomin
Epoxy Systems



LIGHTWEIGHT CONSTRUCTION IS KEY TO THE OCEAN EAGLE 43'S RAPID ACCELERATION AND LONG-RANGE FUEL EFFICIENCY

Commissioned by the Mozambique Government, the Ocean Eagle 43 is an innovation in maritime surveillance. The 3 Sicomin vessels will conduct multiple missions throughout the Indian Ocean including anti-piracy operations and the safeguarding of fisheries, oil, gas and other maritime resources.

Sicomin played an integral part in this challenging project and supplied a range of advanced resin systems during the build programme that was selected by renowned French shipbuilder, CHN. The Sicomin resins were produced at Charter Haul's facility in La Cote, France. All parties worked closely to achieve a truly outstanding result and the project has now received the accolade of the largest ever infusion of an epoxy hull in a single shot.

The Transman Design In order to undertake its patrol duties effectively, the Ocean Eagle 43 must be able to cruise for many hours and then accelerate quickly and precisely. Legendary naval architect Huel has been enlisted to produce a sleek and fast design. "It's taken many years for the world to warm up to this design for an efficient surveillance vessel," notes Huel. "But it is a perfect application for a Sicomin resin. The long, slender hull and

distinctive outrigger hulls called around provide exceptional stability, yet are lightweight and experience a reduced amount of drag than other hull forms of comparable displacement, including twin-hulled catamarans.

The Sicomin design team consists of a glass fibre and epoxy sandwich construction - a well proven composite structure according to Pierre Labbe, Head of Composite at CHN. "Everything is solid

READ CASE STUDY



GREENPOXY® 56



VIEW
GREENPOXY® 56
DATASHEET

Multipurpose bio epoxy solution.

- Up to 51% bio-based carbon content.
- Achieves tough and hard wearing gloss laminates.
- Suitable for laminating, injection moulding, filament winding, press processes and casting.
- Guaranteed supply in industrial tonnages.



Sustainable materials
with uncompromising
performance.



www.sicomin.com/
bio-based-epoxy



Bonding Resins

sicomin.com/
processes/bonding



ISOBOND SR7100



VIEW
ISOBOND SR7100
DATASHEET

Highly structural epoxy adhesive for thin or thick bonding.

- Formulated for thick and thin bond lines.
- Resists high stress in fatigue (excellent against propagation of microcracks).
- Application on non-porous surface materials is possible.



Complete package
of composite materials
for Marine



[sicomin.com/
processes/bonding](http://sicomin.com/processes/bonding)



ISOBOND SR7200 HTG



VIEW
ISOBOND SR7200 HTG
DATASHEET

High Tg structural epoxy adhesive.

- High performance adhesive with Tg max of 80°C.
- Specifically formulated for thick and thin bond lines.
- High fatigue strength and resistance to microcracking.
- Adheres to most materials.
- Gel texture for easy mixing and application.

Market leading range
of GreenPoxy®
bio-based epoxies
available

Foaming Solutions



VIEW
PB 170, 250, 400 AND 600
DATASHEET

PB 170, 250, 400 and 600

Tough and resilient ambient curing epoxy foams.

- Densities obtained are approximately 170, 250, 400 and 600 kg/m³ respectively (open mould expansion at 23 °C).
- Can be poured onto and co-cured with prepreps or other epoxy laminates.
- Standard foam colour is white, can be coloured with epoxy compatible pigments.
- 2 stages reaction, gentle expansion followed by slow hardening of the foam.
- Adhere to a wide range of materials.
- CFC free and highly water resistant.

[sicomin.com/
processes/foaming](http://sicomin.com/processes/foaming)

