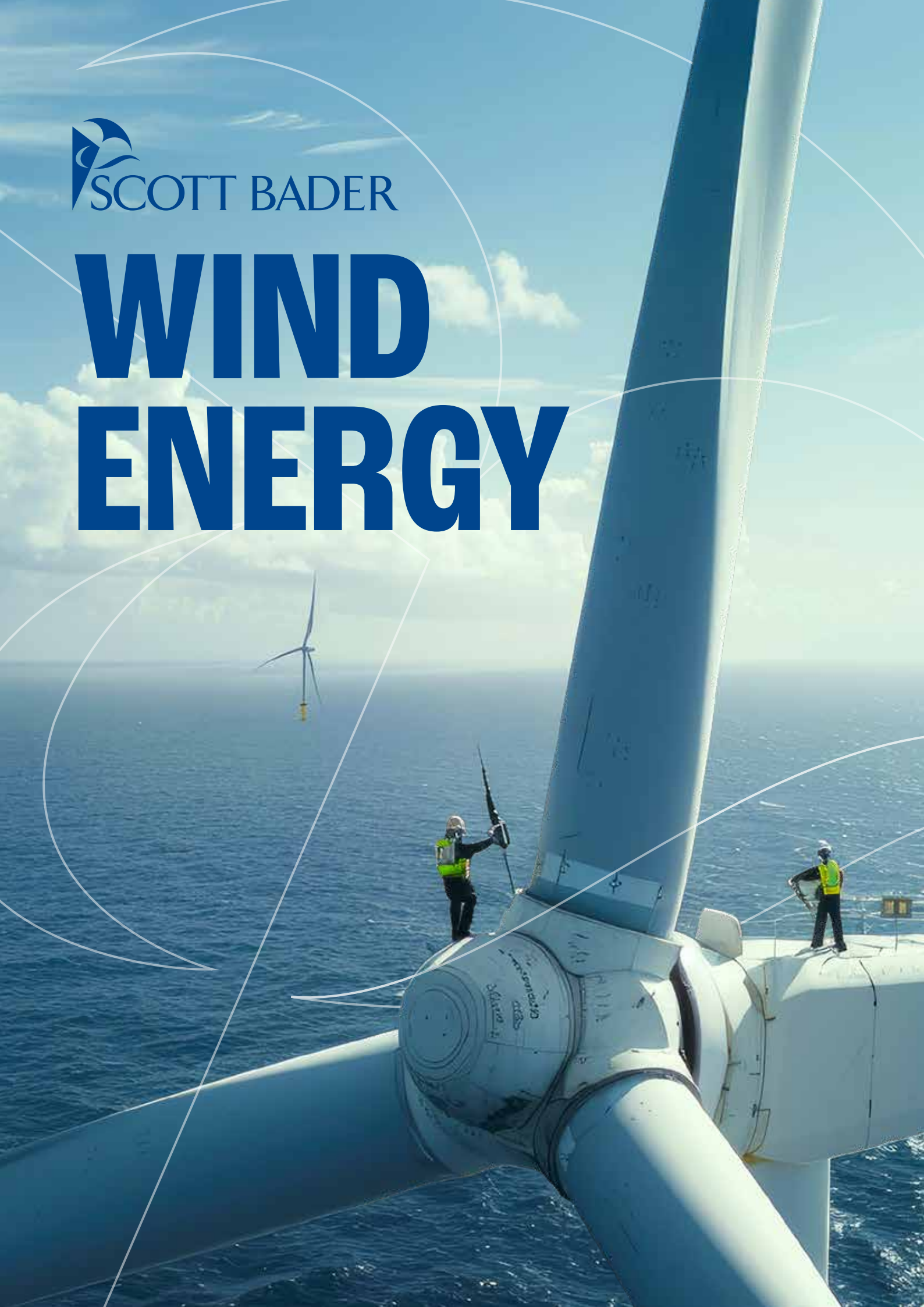
SCOTT BADER

WIND ENERGY



WHY SCOTT BADER?

WELCOME TO WIND ENERGY EXCELLENCE

Established in 1921, Scott Bader is a global manufacturer of composite and adhesive materials for the wind energy market, supplying resins, gelcoats and adhesives to the world's leading wind turbine manufacturers and independent blade builders.

Employing 800 people across seven manufacturing sites and 18 offices worldwide, we manufacture and distribute the very best in wind energy solutions. Our comprehensive range of market leading products are used for:

- Nacelles and spinners
- Wind blade manufacture and repair
- Composite tooling

1

REDUCE YOUR COSTS

Our innovative fast curing products reduce the time and cost to finish and repair wind turbine blades. There is no need to apply heat or move blades to cure our systems.

2

EPOXY COMPATIBLE

We have developed composite and structural adhesive technology to seamlessly work with epoxy material.

3

APPROVED BY THE WORLD'S LEADING OEMS

Scott Bader's innovative technology for blades, nacelles and repairs has been tried, tested and approved by renowned OEMs globally.

CONTENTS

NACELLES AND SPINNERS

GLOBAL SUPPLY AND OEM APPROVED NACELLE PRODUCTS

HIGH PERFORMANCE CRYSTIC RESINS & GELCOATS

Range of high-quality polyester infusion resins with market leading performance and gelcoats that deliver exceptional resistance to harsh weather conditions, typically seen at exposed onshore and offshore wind farms.

REDUCE PRODUCTION COSTS AND TIME

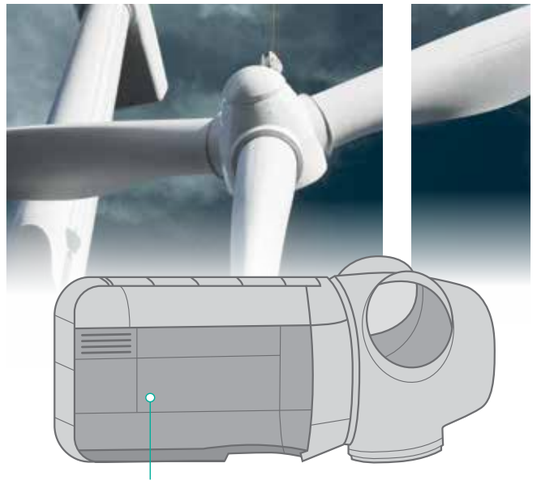
Our high strength/toughness, fast curing and primerless structural adhesives allow you to quickly bond multiple parts together. No time needed to apply primer, alongside fast curing and minimal surface preparation, increases the speed and efficiency of your production.

METAL TO GRP BONDING

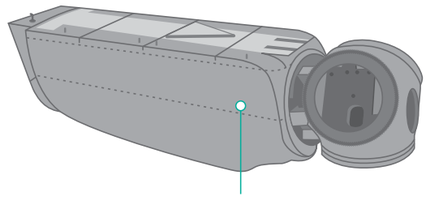
Crestabond can bond various and dissimilar substrates, including metal to GRP, giving you flexibility.

INCREASE FIRE SAFETY

Our Crestafire FST topcoats offer increased fire safety to protect the interior of the nacelle enclosure.

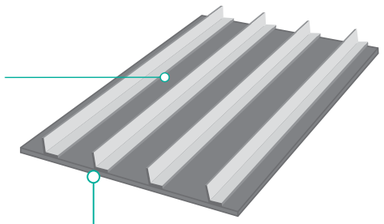


Crestafire® TCS1201PA applied to the inside of the nacelle housing for fire protection.

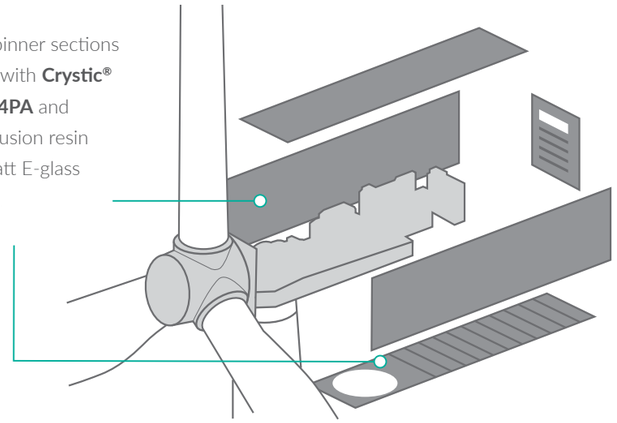


Crystic® GC 0209 KH, GC 0209 SMK and GC X209 in-mould gelcoat and topcoat used to protect the polyester GRP laminate from UV weathering and rain/moisture.

Metallic stiffeners, plates, brackets and inserts bonded using **Crestabond® M7**. Composite to composite bonded using **Crestabond® M1-60HV** and **M1-90 HV**.



Nacelle and Spinner sections manufactured with **Crystic® U1106 LV**, **704PA** and **272-03 PA** infusion resin with combi-matt E-glass reinforcement.



Pultruded profiles manufactured from **Crystic® VE671-03** used to locally stiffen panels – either incorporated in the laminate and over infused or separate profiles bonded post dem ould of the nacelle panels.

PRODUCT RANGE

CRYSTIC® CRESTABOND® Primerless MMA Structural Adhesives CRESTAMOULD® Matched Tooling Systems

PRODUCT	DESCRIPTION	APPLICATIONS
Nacelles/spinners		
Crystic® U1106LV50 and 80	Low viscosity orthophthalic UP infusion resin for the wetout of heavyweight glass reinforcements and core materials.	Manufacture of nacelle and spinner enclosure panel.
Crystic® 272-03 PA	Isophthalic UP infusion resin providing higher toughness and chemical resistance vs orthophthalic resins.	
Crystic® 704 PA	High performance orthophthalic UP infusion resin with local manufacture at Scott Bader India and Middle East.	
Crystic® Pigment Paste Ral 7035 Grey	Fast effective way to colour UPR infusion resins to match gelcoat and enhance the UV resistance of the resin.	
Crystic® GC 0209 KS and SMK	Isophthalic and thixotropic spray gelcoat designed to protect nacelle enclosures from onshore and offshore weathering.	
Crystic® GC 0209 BLV, KH & X209	Isophthalic brush in-mould gelcoat designed to provide a protective coating for nacelles. Addition of Solution MW wax needed to use the KH & BLV products as topcoats. X209 designed to be used as a topcoat.	
Solution MW	Wax is added to the gelcoat to avoid air inhibition and allow the exposed gelcoat surface to fully cure.	
Crestabond® M1	High toughness, long working time & snap cure structural adhesive for the assembly of GRP parts.	Nacelle assembly.
Crestabond® M7	Two component 1:1 acrylic adhesives designed for bonding dissimilar materials including GRP, thermoplastics and metals.	
Crestabond® M1-60HV and 90HV	Two component 10:1 acrylic adhesive designed for bonding large composite structures. Tack free surface after cure allows exposed edges to be sanded and top-coated.	
Crestafire® TCS1201PA	Intumescent fire-retardant topcoat designed to reduce the spread of flame & smoke, reducing risk to life and protecting assets.	Fire retardant topcoat for interior of nacelles/spinners.
Crystic® VE671-03	Vinyl ester resin for the manufacture of high-performance pultruded profiles for the stiffening of nacelle enclosures. 3x faster line speeds compared to epoxy resins.	Pultruded profiles for stiffening of nacelles.

BLADE MANUFACTURE

REDUCING TOTAL SYSTEM COSTS AND CYCLE TIMES

Our range of blade finishing products, for epoxy & polyester grp blades, offer quick curing with a long working time, allowing you to work with them for long periods whilst maintaining a fast snap cure behaviour. This removes the need to apply heat to achieve the required cured properties, further saving time & costs.

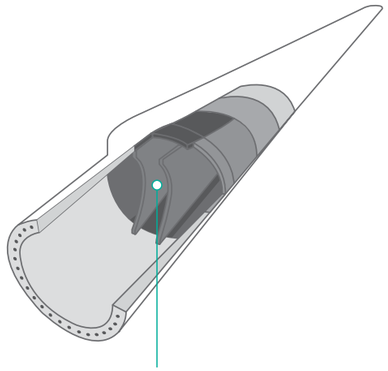
STIFFENING

Vinyl ester resin designed for the manufacture of carbon fibre profiles for blade stiffening offer pultrusion line speeds 3x faster compared to epoxy , reducing overall costs.

HIGH TOUGHNESS ADHESIVES FOR BLADE ADD-ONS & REPAIRS

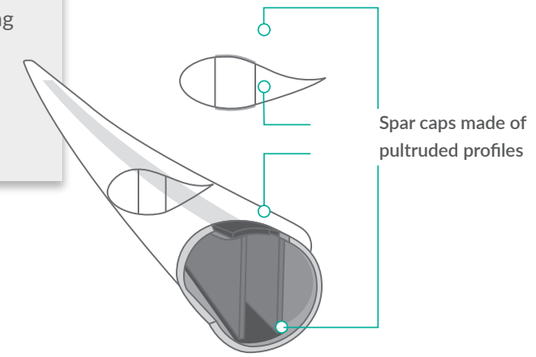
Crestabond adhesive offers a fast and effective way to repair blade defects and bond vortex generators/trailing edge profiles on epoxy & polyester grp blades.

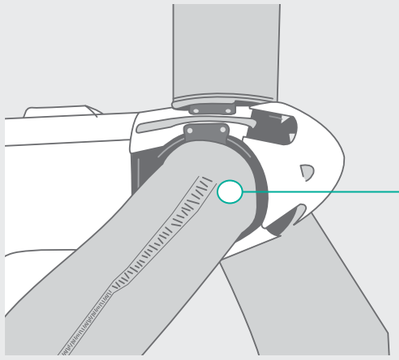
Reinforcing the wind industry



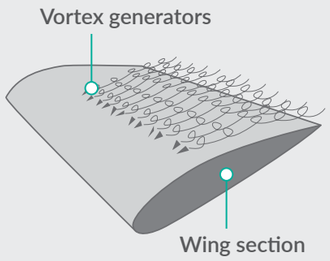
Crestabond® M1 is used to fill voids between the shear web and the blade shells and delaminations between the skin and core on the blade leading/ trailing edges.

Repairs to the shear web bond line are are made from outside the blade by drilling through the shell and injecting the adhesive into the cavity/defect.





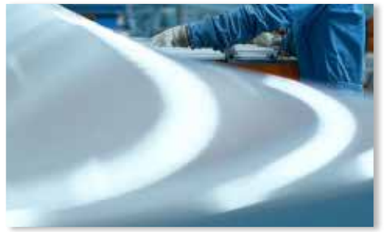
Crestabond® M1 is used for bonding vortex generators to increase lift and reduce drag. Spoilers can be bonded on the trailing edge to reduce noise.



CRYSTIC®

CRESTABOND®
Primerless MMA Structural Adhesives

PRODUCT	DESCRIPTION	APPLICATIONS
Blade		
Crystic® VE671-03	Vinyl ester resin for high-performance pultruded profiles to stiffen blades. 3x faster line speeds compared to epoxy resins.	Spar cap pultruded profiles to stiffen blades and root sections.
Crestabond® M1 series	Achieves a high strength bond to epoxy GRP and ABS, making it ideal for bonding of add-ons and in production finishing of blades.	Bonding of vortex generators and trailing edge profiles/spoilers. Blade bondline repair ('drill and fill' applications).
Crestabond® M7 series	Fast curing primerless 1:1 acrylic adhesive for bonding composites, thermoplastics and metals.	General purpose adhesive for sub-assemblies & bonding of lightning receptors.
LS200 series gelcoats	High toughness isophthalic spray gelcoat providing a high level of weathering protection for blades.	Coating of polyester and vinyl ester grp wind turbine blades.
Crystic Filler X401	Fast curing easy to sand filler for fairing the leading/trailing edges of blades and repairing surface defects.	Filling and fairing the surface of polyester or vinyl ester grp blades prior to topcoat application.
Crystic® Gelcoat 0209BLV	Fast curing brush intermediate coating for the finishing of the leading/trailing edges of blades.	Used as a 1st layer for the finishing of polyester & vinyl ester grp blades.
Crystic® Topcoat X209KH	Final coating for the finishing of the leading/ trailing edges of blades. The product contains a wax additive and cures to a tack free surface finish.	Used in conjunction with Crystic gelcoat 0209BLV as a topcoat for polyester and vinyl ester blade finishing/repair.



BLADE REPAIR
BLADE FINISHING

FAST CURING FILLER & COATING PRODUCTS
Range of low temperature and fast curing products for blade surface and leading-edge repairs.

RESISTANT TO SURFACE CONTAMINATION
Reliable and robust structural adhesives that are resistant to contamination.

MINIMAL SURFACE PREPARATION
With minimal preparation needed, Crestabond is ideal for in-field repairs of delamination's or voids/cracks in blades.

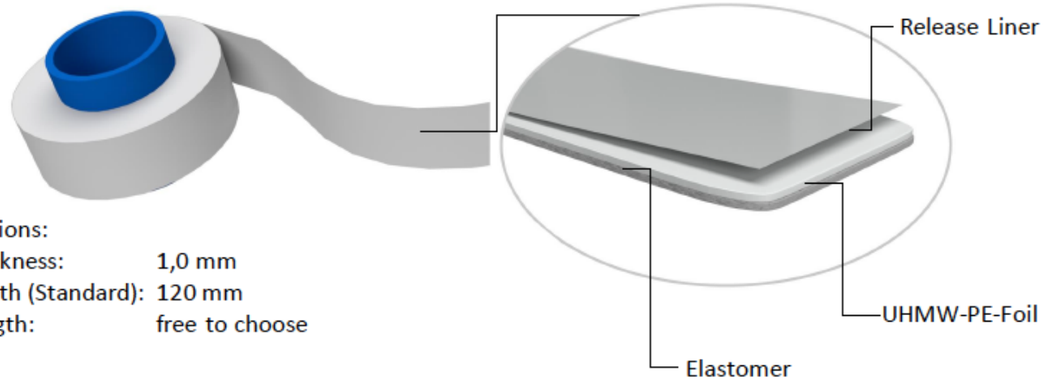
(COMING SOON...)

REDUCE TURBINE DOWN TIME WITH OUR UV CURING REPAIR SYSTEM
Fast UV curing system of resins, fillers and topcoats for the repair of epoxy & polyester blades.

There is no need to apply heat or mix the materials, saving time and guaranteeing a consistent quality blade repair every time.

KRAIBURG

LEADING EDGE PROTECTION
Scott Bader have partnered with Kraiburg to provide leading edge protection to protect your blades and maintain efficiency.



Dimensions:
- Thickness: 1,0 mm
- Width (Standard): 120 mm
- Length: free to choose

CRYSTIC®

CRESTABOND®
Primerless MMA Structural Adhesives

PRODUCT	DESCRIPTION	APPLICATIONS
Repair		
Kraiburg LEP, Crestabond® M1, Crystic® X401 & Crystic® X209	Elastomeric film designed to protect the leading edge of blades from rain & particle erosion which can lead to a significant reduction in annual energy production.	Leading edge protection on blades.
Crystic® Gelcoat 0209 KH, Crystic GC0209 BLV & X209	Fast curing topcoat that can be applied over GRP laminates, filler and gelcoat to provide blade weathering protection. Crystic X209 variant is designed for use at ambient temperatures of less than 10°C and has wax incorporated to give full through thickness cure. Addition of Solution MW wax is needed to use the KH & BLV products as a topcoat.	Surface coating repair on blades.
Solution MW	Wax is added to the GC0209 KH or BLV gelcoat to avoid air inhibition and allow the exposed surface of the gelcoat to fully cure.	Topcoat on blades.
X401 Filler	A filler with no sagging on vertical walls, rapid curing and easy sanding.	Used to 'fill & fair' the surface of the repair area prior to application of the topcoat.
Crestabond® M1 & M7	Fast curing structural acrylic adhesives designed for bonding composites, thermoplastics and metals. Very tolerant to surface contamination.	In-field repair of split blade trailing edges, bonding of lightning receptors, repair of voids, skin to core delaminations and bond lines in blades.

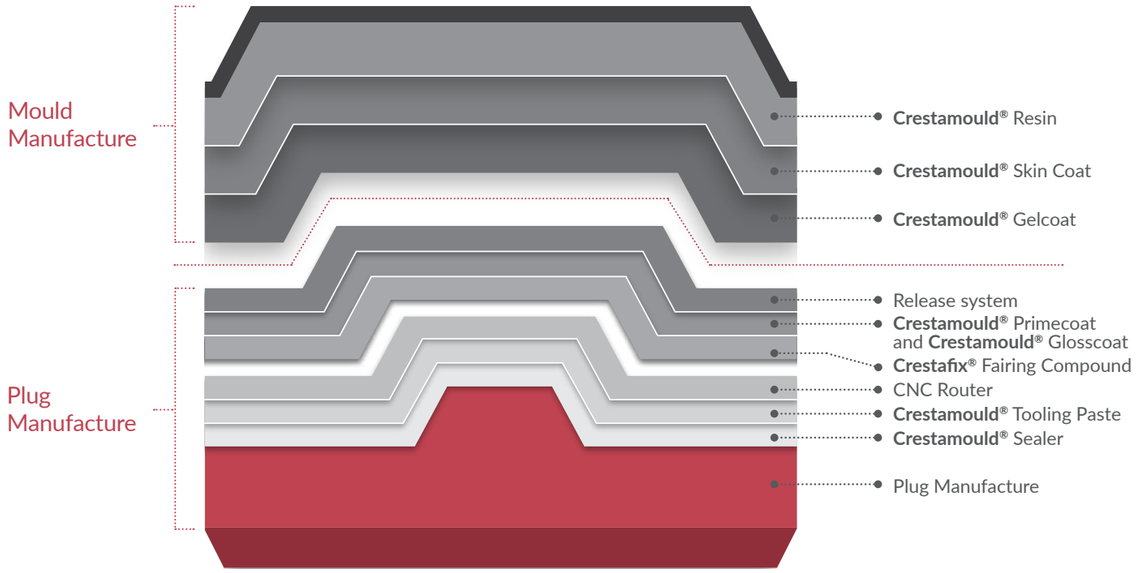




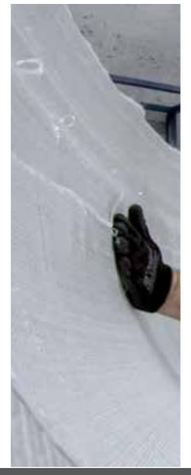

COMPOSITE TOOLING

Our **Crestamould®** matched tooling systems offer a fast and effective way to produce moulds for the manufacture of blade, nacelle and spinner components. Our low-profile laminating and infusion resins minimise shrinkage to improve the dimensional accuracy of moulds combined with gelcoat and skincoat products to deliver a high quality and robust mould surface.

CRESTAMOULD®
Matched Tooling Systems



Our knowledge hub composite page



CRYSTIC®

CRESTAFIX®
Polyester, Vinyl Ester and Hybrid Bonding Pastes

CRESTAMOULD®
Matched Tooling Systems

PRODUCT	DESCRIPTION	APPLICATIONS
Pattern/Direct Mould Build		
Crestamould® B12	Polyester	A MEKP catalysed, brushable slightly thixotropic sealer designed to coat expanded and extruded polystyrene foams.
Crestamould® T29	Polyester	A modified polyester compound, designed for milling of large plugs or direct limited production moulds with CNC multiple axis machines. T29 is available in sprayable or extrudable versions.
Crestafix® F26	Polyester	A water resistant, low-density polyester-based fairing compound.
Crystic® Primecoat	Polyester	A high build, polyester coating material which allows the rapid surfacing of patterns constructed from wood, MDF and GRP.
Crystic® Glosscoat	Polyester	A polyester coating designed to be applied over prepared Crystic® Primecoat to give a glossier and more durable surface.
GRP Mould Build		
Crestamould® Gelcoat 15PA	Vinylester	A pre-accelerated spray gelcoat specially formulated from a vinyl ester base resin and is available in a restricted range of colours.
Crestamould® VE679PA	Vinylester	A pre-accelerated, thixotropic, DCPD modified, vinyl ester resin.
Crestamould® RTR 4010PA	Polyester	A rapid tooling resin that incorporates better handling properties, lower viscosity, improved shrinkage control and is catalysed with standard MEKP catalyst. RTR 4010PA is a thixotropic, filled, low profile resin for hand-lay mould making applications. Best suited for smaller high volume moulds with room temperature processing.
Crestamould® 474PA	Polyester	A thixotropic, pre-accelerated orthopthalic polyester resin with good heat and chemical resistant properties. Best suited for larger moulds that will undergo elevated temperature processing cycles.

Find your local Scott Bader office

SCOTT BADER
*Making a **positive** difference*

INVESTORS IN PEOPLE®
We invest in people Gold

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SCOTTBADER.COM

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