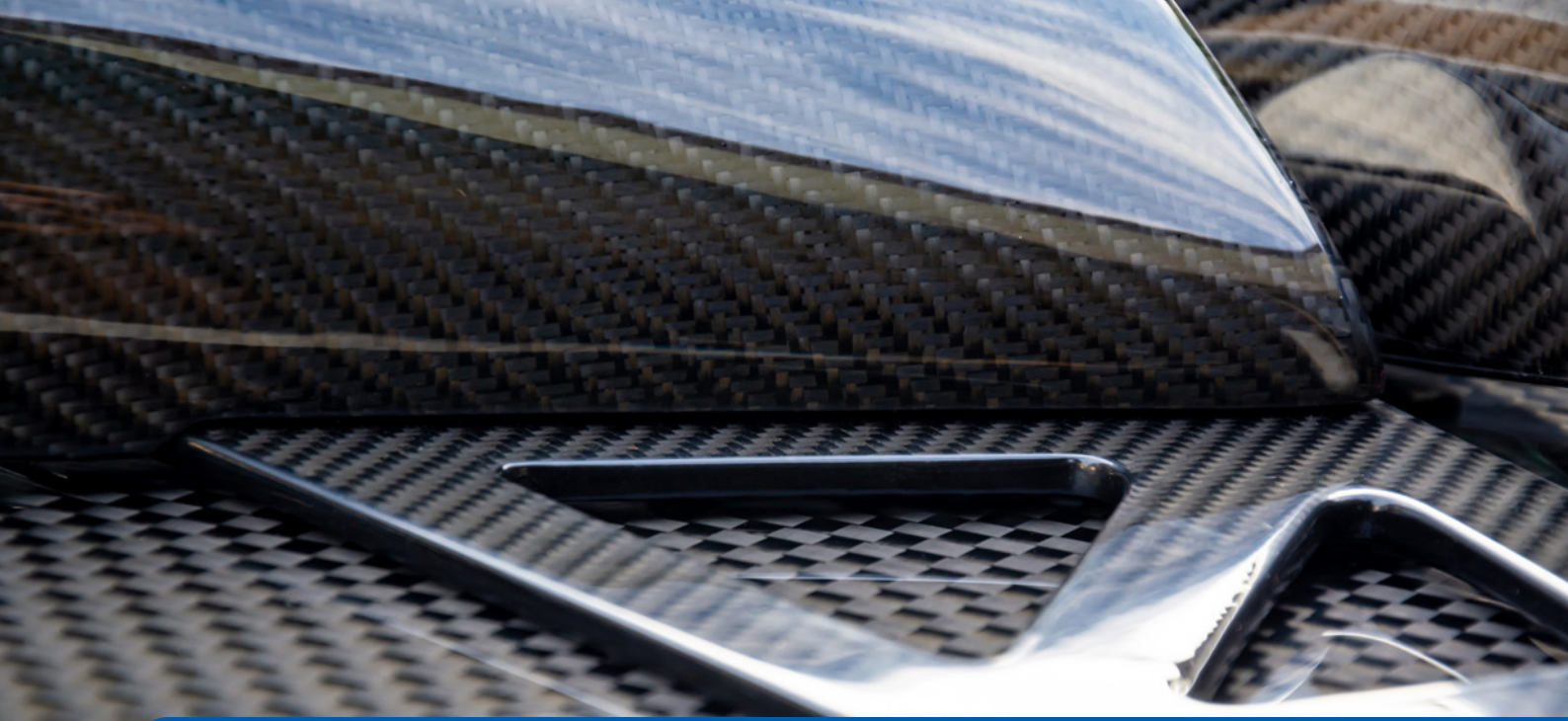




Elan-tech® – Epoxy Resins and Structural Adhesives

for Composite Materials



Marine: infusion and lamination system with several reactivities.



RiNA Approved infusion and lamination epoxy system.

Elan-tech® Epoxy Resins and Structural Adhesives

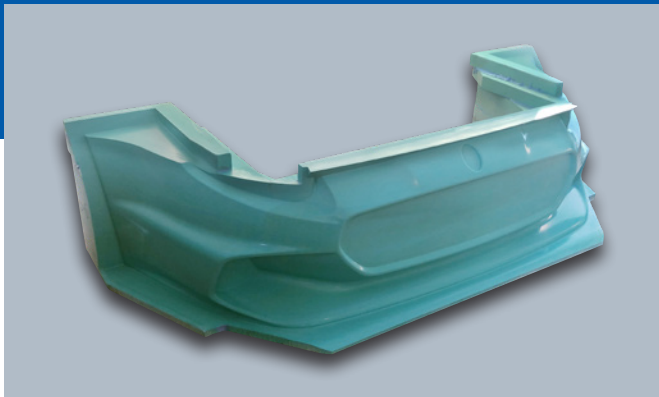
for Composite Materials

New technologies and the demand for improved productivity levels have a direct impact on today's markets and materials used. The requirements for materials to operate within higher temperature ranges or for softer materials with improved chemical and UV resistance are steadily increasing.

As specialist in formulating epoxy, polyurethane and silicone resins we have a deep knowledge in composite material development and applications. Our customers benefit from our know-how and long-term experience for more than 50 years.

With our brand Elan-tech® we are offering a broad assortment of high-performance products for a variety of composite application processes e. g. laminating wet lay-up, RTM & press molding, vacuum bag infusion, pultrusion and filament winding. Depending on the viscosity, reactivity, temperature or other parameters we provide the optimum composite solutions perfectly fitting our customer needs. In addition, our portfolio includes structural adhesives and sealants for a rapid bonding of composite and other materials. Last developed Bio-systems from renewable resources offer a very good mechanical performance, Tg values and reactivities in line with standards obtained from petrochemical raw materials.

The main end use markets for our composite materials are marine, automotive, sport items, furnishing, industry and pipe relining.



Master model for composite mold (car front assay).



Vacuum bag lamination of car body part.

Lamination or wet lay-up

Unfilled, low viscosity or tixotropic resins available in combination to different reactivity hardeners.

Additive	Mixing Ratio	Description		
ADD-UP2	100:1,8-2,2	For gelcoat or polyester/ vinylester resins, special additive compatibilizer gelcoat or polyester/ vinylester skin coat with epoxy resins. Please refer to TDS before use.		

Resin	Hardener	Pot-Life min. 25°C	Tg °C max.	Description
Elan-tech® EC 130LV Light violet	W 341 high reactivity	8–15 min. (100 ml)	125	Recommended for medium and large surface vacuum bag laminating. Short pot-life, thermally resistant, high performance system.
	W 342 medium reactivity	22–27 min. (100 ml)	118	Recommended for medium and large surface vacuum bag laminating. Medium pot-life, thermally resistant, high performance system. UV resistant.
	W 340 low reactivity	50–70 min. (100 ml)	135	Recommended for medium and large surface vacuum bag laminating. Long long pot-life, thermally resistant, high performance system.
	W 152 XLR extra slow reactivity	180–200 min. (100 ml)	103	Recommended for medium and large surface vacuum bag laminating .Extra long pot-life, thermally resistant, high performance system.
Elan-tech® EC 152 RINA Approved System	AW 92 extra slow reactivity	35–45 min.	85	Coupling layer between cured and wet lay-up laminating (also on vinylester cured layer additioned of ADD-UP2).
	W 152.1 HR fast reactivity	12–17 min. (200 ml)	96	For: small pieces wet-lay-up laminating at R.T medium and large surface vacuum bag laminating. High performance resin with short pot-life hardeners.
	W 152 MR medium reactivity	35–45 min. (200 ml)	96	For: small pieces wet-lay-up laminating at R.T medium and large surface vacuum bag laminating. High performance resin with medium pot-life hardeners.
	W152 MLR slow reactivity	90–110 min. (200 ml)	96	For: small pieces wet-lay-up laminating at R.T medium and large surface vacuum bag laminating. High performance resin with long pot-life hardeners.
	W 152 XLR extra slow reactivity	100–120 min. (200 ml)	96	For: small pieces wet-lay-up laminating at R.T medium and large surface vacuum bag laminating. High performance resin with extra long pot-life hardeners.
	W 152 XLR-HT extra slow-high tg	130–155 min (500 ml)	100	High performance composite parts in dark color. Available for very large and high thickness structures, such as sailing boats, shipyard structures, wind blades.
Elan-tech® EC 255Tix Milky	W152.1HR high reactivity	14–20 min.	67	For bonding PVC foam core in sandwich laminating structures. Thixotropic resin, fast gelification.
	W152XLR extra slow reactivity	125–160 min.	77	For bonding PVC foam core in sandwich laminating structures. Thixotropic resin, extra long gelification.
Elan-tech® EC 170 Pale yellow	K 24 medium reactivity	15–20 min. (100 ml)	87	Chemically resistant epoxy system for wet lay-up and coatings.

Epoxy resins for RTM

Unfilled, low viscosity system for production of composite offering different temperature resistance and aesthetic class.

Resin	Hardener	Pot-Life min. 25 °C	Tg °C max.	Description
Elan-tech® EC 114 Pale yellow	W 152.1HR high reactivity	8–10 min.	98	For hot press or RTM moulding (ex.helmets, fins, wakeboards, snowboards, bike and automotive parts, etc). Short pot-life system with high reactivity.
	W 340 medium reactivity	80–100 min. (8 min. 80 °C)	150	For hot press or RTM moulding (ex.helmets, fins, wakeboards, snowboards, bike and automotive parts, etc). Long pot-life systems with high reactivity.
Elan-tech® EC 157.1 Pale yellow	W 557 fast reactivity	20–30 min. (100 ml)	100	For hot press or RTM moulding (ex.helmets, fins, wakeboards, snowboards, bike and automotive parts, etc). Short pot-life systems with high reactivity.
Elan-tech® EC 201	W 340 medium reactivity	320–360 min.	198	For hot press or RTM moulding (ex.helmets, fins, wakeboards, snowboards, bike and automotive parts, etc). Long pot-life systems with high reactivity.

Carbon Look production and Maintenance

Repair and maintenance works even at low temperature ; manufacturing of carbon look and very clear potting, as well as highly filled compounds.

Resin	Hardener	Pot-Life min. 25 °C	Tg °C max.	Description
Elan-tech® EC 147 Pale Yellow	W 147.1 NF	12–20 min. (100 ml)	65	Room temperature fast curing system. Easy mixing ratio 2:1 by volume.
Elan-tech® EC 398 Tix	W 147.1 NF	11–21 min (100 ml)	85	Slightly tixotropic system, fast curing at room temperature. Easy mixing ratio 2:1 by volume.
Elan-tech® EC 360 Pale yellow	W 222 extra slow reactivity	180–300 mn	63	Long pot-life system developed to be used with a very high quantity of additional fillers.
Elan-tech® EC 141 NF Transparent	W 242 NF medium reactivity	35–45 min.	58	For transparent and agglomerated piece and coating. U.V. protected low viscosity, clear casting system, different hardeners.
	W 241 extra slow reactivity	75–95 min.	65	For transparent and agglomerated piece and coating. U.V. protected low viscosity, clear casting system, different hardeners.
Elan-tech® EC 254LB	W 254 N	15–25 min. (100 ml)	87	Carbon look composites coating and item finishing. UV protected low viscosity system.
Elan-tech® AS 15 milky + Y 28 foaming Agent	W 242 NF medium reactivity	5–15 min.	70	For small or large light elements. Thixotropic casting resin, foaming up to 2–5 times
	W 241 slow reactivity	15–30 min.	70	For small or large light elements. Thixotropic casting resin, foaming up to 2-5 times



Aerospace Carbon Composite molded into EB 690 epoxy board mold.



Master model production with medium density modelling paste, machine applied.



Vacuum bagging in silicone, for PE and EP systems.

Infusion

Low viscosity epoxy system for infusion, combined with a selection of hardeners. Reactivity profile drives the need of RT curing and post-curing.

Resin	Hardener	Pot-Life min. 25°C	Tg °C max.	Description
Elan-tech® EC 157.1 Pale yellow RINA Approved Systems	W152.1 HR fast reactivity	40–50 min. (200 ml)	85	Suitable for small and large infusion component (i.e. wind turbine blades and boats). Very low viscosity with several reactivity.
	W152.1 MLR slow reactivity	80–100 min. (200 ml)	85	
	W 152 XLR extra slow reactivity	120–150 min. (100 ml)	85	
	W 152 XLR-HT extra slow reactivity	130–150 min (500 ml)	96	High performance composite parts in dark color. Available for very large and high thickness structures, such as sailing boats, shipyard structures, wind blades.
Elan-tech® EC 157.1 BIO Resin	W152 LR	90–130 min (200 ml)	72–76	C ¹⁴ content (%) 31 ÷ 36
	W154	45–55 min (200 ml)	78–80	C ¹⁴ content (%) 41 ÷ 45
	W154 LR-HT	90–130 min (200 ml)	60–90	C ¹⁴ content (%) 36 ÷ 41

Master Models and Tools for Composite production

Boards, epoxy systems and gelcoat for manufacturing of high performance composites tools; seamless machine applied paste with different density in a working temperature range from 60 to 190°C.

Resin	Hardener	Pot-Life min. 25°C	Tg °C max.	Description
Elan-tech® EPIBLOCK EB 690	Green EP Machinable Board		135	For epoxy pre-pregs tools and parts. Master models and thermoresistant tools.
Elan-tech® PURBLOCK RANGE	Available in several densities and colors. Please refer to specific documentation.		n.a.	Tooling Resins Overview
Elan-tech® MS 655 A Grey	MS 655 B white	35–45 min. (500 ml)	90	For CNC large model and mould. Machine applied several epoxy pastes (d=0,6).
Elan-tech® MS 658 A Grey	MS 658 B white	35–45 min. (500 ml)	63	For CNC large model and mould. Machine applied several epoxy pastes (d=0,75).
Elan-tech® MS 660 A Grey	MS 660 B white	35–45 min. (500 ml)	105	Machine applicable paste with high density (d=0,94), very low porosity, very high dimensional stability, excellent edge definition. Polishable.
Elan-tech® MC 1164	W 341 fast reactivity	25–35 min. (200 ml)	133	Alluminium filled thermal conductive system for mold making. Can be used as gel-coat in combination with lamination system EC 138-W 340.
	W 340 medium reactivity	150–180 min. (200 ml)	135	Alluminium filled thermal conductive system for mold making. Can be used as gel-coat in combination with lamination system EC 138-W 340.
Elan-tech® MG 536 Brown	W 506 slow reactivity	182 min.	190	Polishable gelcoat, long pot-life, room temp. curing, for thermally resistant moulds and tools.
Elan-tech® EC 57 Pale yellow	W 61 slow reactivity	68–82 min. (100 ml)	140	For thermoresistant tools, infusion processed. Long pot-life system.
Elan-tech® EC 257 Pale yellow	W 61 slow reactivity	68–82 min. (100 ml)	190	Production of thermally resistant tools by infusion. Long pot-life system.
Elan-tech® EC 138	W 340	75–85 min (100 ml)	148	Production of thermally resistant tools by lamination.
Elan-tech® EC 180 Amber	W 340 medium-slow reactivity	220–240 min. (100 ml)	185	For thermal resistant. moulds and tools. Wet lay-up processed. Long pot-life, Room temp. curing system.



Filament winding for structural reinforcements.



Marine body parts making and finishing.



Silicones for vacuum bagging.



A wide variety of structural adhesives in pails and cartridges.

Hot Curing Epoxy Systems

Unfilled epoxy resins with very slow or hot curing hardener. Ideal for filament winding or big mass casting.

Resin	Hardener	Accelerator	Mixing Ratio (% weight)	Pot-life at 25 °C	Hot Curing	Tg °C max.	Description
EC 114 Pale yellow	W 132 Amine slow reactivity	n.a.	100:37	400–460 min	90 °C	110	Long pot-life System curing at moderate temperature. Filament Winding for small- medium size composite parts.
EC 01 Pale yellow	WH 850 Anhydride hardener	W 45 or W 847 Pale yellow /brown	100:90 :0,5±2	6–24 h	100–160 °C	130	Long pot-life Systems. High temperature curing only, reactivity depending on % accelerator. F.W., press molding.
EC 361 Pale yellow	WH 850.1 Anhydride hardener	W 45 Pale yellow	100:85 :1,5±2	6–24 h	100–150 °C	130	As above, specific for high curing filled Systems (abrasive tools for stone and ceramic slabs)
EC 14 Milk, with release agent	WH 102 Anhydride hardener	W 45 or W 847 Pale yellow/brown	100:90 :0,5±2	6–24 h	5–15 min 160–190 °C + post-curing	150	Long pot life system. High temperature curing only. Containing wax releasing additive for high speed pultrusion composite parts.
	WH 113 Anhydride hardener accelerated	—	100:90			150	Long pot life system. High temperature curing only. Containing wax releasing additive for high speed pultrusion composite parts.

Structural Adhesives

A wide range of adhesives with different reactivities, hardness and thermal resistance are available for a variety of applications. Please discuss with our technical service the most critical points of your application and we will recommend the best solution.

Product	Aspect	Mixing Ratio by weight by volume	Gel. Time (25 °C) min	Tg °C	Description
Elan-tech® AS 52 - AW 13	Low viscosity, Transparent Pale Yellow	100:100 100:100	3	45	2K unfilled epoxy, fast setting time, suitable for aluminium, steel, plastic and composite fast repairing and bonding, or preliminary assembly operation.
Elan-tech® ADH 52.13					
Elan-tech® AS 46 - AW 46	Slightly thixotropic Amber to clear aspect	100:80	330	57	2K unfilled epoxy adhesive with long open time, suitable for a wide variety of materials. Excellent adhesion to PVC and other plastics. Can offer a very thin bonding line with no impact on the gap filling when required.
Elan-tech® ADH 46.46		100:100			
Elan-tech® AS 89.1 - AW 89.2 NF	Thixotropic, Black color	100:45	135	80	2K epoxy fatigue resistant structural adhesives; excellent performances on carbon and metals.
Elan-tech® ADH 891.892 dark grey		100:50			
Elan-tech® AS 99-AW 99	Tixotropic black color	100:45	120	90	2K epoxy fatigue resistant adhesive; can be trimmend within some hours with very low chop residual. Excellent bonding on carbon parts and metals.
Elan-tech® ADH 99.99		100:50			
Elan-tech® AS 545-AW 545		100:50	150	60/100	2K epoxy unfilled adhesive. Meets the requirements of R1, R2, R3 and R6 according to EN 45545-2+A1:2015, HL1, HL2 and HL3.
Elan-tech® ADH 545.545					
Elan-tech® AS 90 - AW 90	Very thixo, easy spread Slightly contrasting colours	100:45	90	75	2K fatigue resistant structural epoxy adhesives with different reactivities for wind blade, aircraft, boat hull, train part assembling . Available in cartridges with different colors according to the reactivity.
Elan-tech® ADH 90.90		100:50			
Elan-tech® AS 90 - AW 91 NF	Very thixo, easy spread slightly contrasting colours with orange or blue hardener	100:45	330	80	
Elan-tech® ADH 90.91		100:50			
Elan-tech® AS 90 - AW 92	Very thixo, easy spread slightly contrasting colour, blue hardener	100:45 100:50	540	80	
Elan-tech® AS 97.1 - AW 96.1 NF	Tixotropic, very dark grey color	100:100	70	86	2K epoxy-acrylate adhesive, slightly filled and tixotropic; suitable for repairing and bonding aluminium, steel, plastic, composites. Available in transparent version, code ADH 951.951.
Elan-tech® ADH 971.961		100:100			
Elan-tech® ADH PU 8505 black	Unfilled Thixo black	100:100 100:100	4	45	2K polyurethane, fast curing tixo adhesive, for sealing of plastic parts and bonding of composites. Available in 30 shore D and 60 shore D, too, with translucent color.
Elan-tech® PC 200 - G 8	Neutral milky Thixotropic	100:25 100:33	240	25	2K low viscosity Polyurethane, structural adhesive, for aluminium and phenolic laminate sheet of honeycomb panels, thermoplastic, FRP, tooling boards bonding.
Elan-tech® PC 200 DT - G 200	Neutral milky Thixotropic	100:25 100:19	35	0	2K slightly tixotropic Polyurethane structural adhesive, for metal and composite bonding. Can be available in cartridges.
Elan-tech® ADH PU 200.200					

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ELANTAS Europe is part of the division ELANTAS of the ALTANA group and is a leading manufacturer of insulating materials and specialty chemicals. As specialist in formulating epoxy, polyurethane and silicone resins, ELANTAS Europe has a deep knowledge in the development and the application of composite and tooling materials. We combine high quality products, customized solutions and comprehensive services to offer our customers a broad product portfolio perfectly meeting their individual requirements.

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