



# **Elan-tech<sup>®</sup>**

**Epoxy Resins and Structural  
Adhesives for Composite Materials**  
Resine Epossidiche e Adesivi  
Strutturali per i Materiali Compositi

# EPOXY SYSTEMS FOR COMPOSITE AND MARINE APPLICATIONS

## RESINE EPOSSIDICHE PER MATERIALI COMPOSITI E APPLICAZIONI MARINE



RESIN RESINA	HARDENER INDURENTE	MIXING RATIO (% weight) RAPPORTO MIX (% in peso)	POT-LIFE MIN 25°C TEMPO DI UTILIZZO 25°C	CURING TEMP. TEMP. POLIMER.	POST CURING POST INDURIMENTO	Tg °C Max	APPLICATIONS/PROPERTIES APPLICAZIONI/PROPRIETÀ
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### COLD TO HOT CURING

### WET-LAY UP

EC 130LV Light violet	W 341 fast react	100:30	8-15 min. (100ml)	Room temperature 70°C	(120°C)	125	Short, medium, long, extra long pot-life, thermal resistant, high performance system. W 342 UV resistant. W 132, W 131, W340 are recommended for medium and large surface vacuum bag laminating. Resina ad alte prestazioni termoresistente, con indurenti a breve, medio, lungo, extra lungo pot-life. W 342 è resistente agli UV. W 132, W131, W 340 sono indicati per laminazione di medie e ampie superfici con sacco a vuoto.
	W 342 medium react	100:30	22-27 min. (100ml)	Room temperature 70°C	(120°C)	118	
	W 340 Slow react	100:30	50-70 min. (100ml)	Room temperature 70°C	(120°C)	135	
	W 152 XLR Extra slow react	100:30	180-200 min. (100ml)	Room temperature 70°C	(80°C)	103	
	W 132 ultra slow react	100:38	240-280 min. (100ml)	Room temperature 70°C	(80°C)	100	
EC 152 Pale yellow  Systems GL Approved	AW 91 medium react AW 92 extra slow react AW93 Ultra slow react	100:50	10-14 min 35-45 min 65-80 min	Room temperature 70°C	(70°C)	75 85 82	Coupling layer between cured and wet lay-up laminating (also on vinylester cured layer). Strato di collegamento tra laminati induriti e laminazione a umido (anche su vinilestere).  High performance resin with short, medium, long, extra long pot-life hardeners, for: small pieces wet-lay-up laminating at R.T medium and large surface vacuum bag laminating. Resina ad alte prestazioni con indurenti a breve, medio, lungo, extra lungo pot-life indicati per laminazione: di piccoli manufatti in ambiente di medie e ampie superfici con sacco a vuoto.
	W 152.1 HR Fast react	100:30	12-17 min. (200ml)	Room temperature 70°C	(70°C)	96	
	W 152.1 MR Medium react	100:30	35-45 min. (200ml)	Room temperature 70°C	(70°C)	96	
	W152.1MLR Slow react	100:30	90-110 min. (200ml)	Room temperature 70°C	(70°C)	96	
EC 255Tix Milky	W152.1HR Fast react	100:24	14-20 min	Room temperature	(70°C)	67	Thixotropic resin, fast or extra long gelification, for bonding PVC foam core in sandwich laminating structures. Resina tissotropica, rapido o extra lunga gelificazione per incollaggio anime in schiuma di PVC nelle strutture sandwich.
	W152XLR Extra slow react		125-160 min			77	
EC 170 Pale yellow	K 24 Medium react	100:14	15-20 min. (100ml)	Room temperature +50°C	(60°C)	87	Chemical resistant wet lay-up epoxy system, for chemical product tank laminating. Sistema chimicoresistente per laminazione a umido di layer di serbatoi nell'industria chimica.

### COLD TO HOT CURING

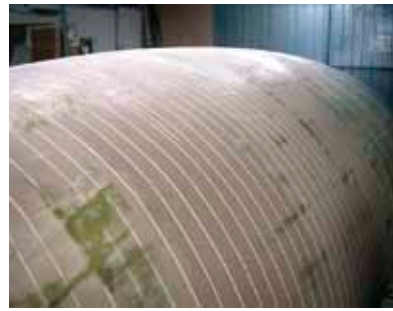
### PRESS MOULDING – RTM

EC 396 Pale yellow	W 153 Fast react	100: 32	6-8 min	Room temperature 15 min. 80°C	(80°C)	98	Fast or long pot-life systems with high reactivity, for hot press or RTM moulding (ex. helmets, fins, wakeboards, snowboards, bike and automotive parts, etc). Sistemi a rapido o lungo pot-life per stampaggio a pressa o RTM, con elevata reattività a caldo (es. per caschi, pinne, wakeboards, snowboards, parti di moto e autovetture, ecc).
EC 114 Pale yellow	W 152.1HR Fast react	100: 30	8-10 min	Room temperature 100°C	(80°C)	98	
	W 340 Medium react	100:27	80-100 min (8 min. 80°C)	-/ 100°C	100-130°C	150	
EC 157.1 Pale yellow	W 557 Fast react	100:18	20-30 min (100ml)	Room temperature 100°C	(120°C)	100	
EC 201	W 340 Medium react	100:32	320-360 min	-/ 30 min 100°C	100-170°C	198	

### COLD CURING + POST CURING

### INFUSION

EC 157.1 Pale yellow  Systems GL Approved	W152.1 HR accelerator Fast react	100:30	40-50 min. (200 ml)	Room temperature 50°C	(70°C)	85	Very low viscosity with several reactivity. Suitable for small and large infusion component (i.e. wind turbine blades and boats). Sistema a bassissima viscosità e diverse reattività. Specifico per l'infusione di parti di piccole e grandi dimensioni (es. pale eoliche, barche).
	W152.1MLR Slow react		80-100 min. (200ml)			85	
	W 152 XLR Extra slow react		120-150 min. (100ml)			85	



RESIN RESINA	HARDENER INDURENTE	MIXING RATIO (% weight) RAPPORTO MIX (% in peso)	POT-LIFE MIN 25°C TEMPO DI UTILIZZO 25°C	CURING TEMP. TEMP. POLIMER.	POST CURING POST INDURIMENTO	Tg °C Max	APPLICATIONS/PROPERTIES APPLICAZIONI/PROPRIETÀ
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#### COLD CURING

#### MAINTENANCE AND CASTING

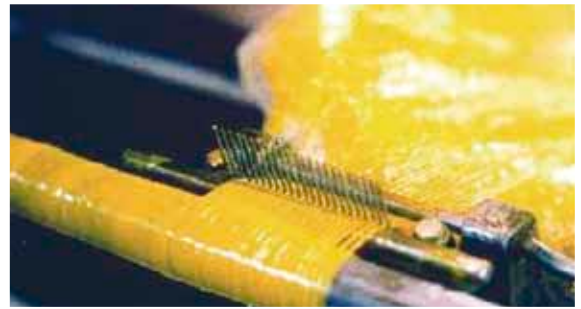
<b>EC 147</b> Pale yellow	W 147 Fast react	100:45 For putty add: EF 36 EF18T EF 31	12-20 min. (100 ml)	Room temperature	(50°C)	65	Room temperature fast curing system. Easy mixing ratio 2:1 in volume. EC398Tix/W147 is a light thixotropic system. <i>Rapido indurimento a T. ambiente. Facile rapporto di impiego 2:1 in volume. EC398Tix/W147 è leggermente tixotropico.</i>
<b>EC 398 Tix</b> Pale yellow tix						75	
<b>EC 360</b> Pale yellow	W 160	100:30	70-85 min.	Room temperature	(50°C)	80	Fast, medium or Long pot-life System developed in order to receive a higher amount of charges. <i>Sistema a medio o lungo pot-life sviluppato per ricevere una più alta quantità di cariche.</i>
	W 161HR Fast react	100: 25	10-20 min.			85	
	W 222 Extra slow react	100:45	180-300 min.			63	
<b>EC 251</b> Flexible	W 242NF Medium react	100:40	30-40 min. (100ml)	Room temperature +50°C	(60°C)	-8	U.V. protected low viscosity, transparent, flexible (EC 251) and low module (EC252) Systems. For glass slab coupling layer and agglomerated materials. <i>Sistema con protezione U.V., trasparente, flessibile (EC251) e basso modulo (EC252), per strati di collegamento su vetro e materiali agglomerati.</i>
<b>EC 252</b> Low module Transparent UV protecte			25-40 min. (500ml)			40	
<b>EC 141 NF</b> Transparent UV protected	W 242NF Medium react	100:45	35-45 min.	Room temperature	(50°C)	58	U.V. protected low viscosity, clear casting System. Different hardeners, for transparent and agglomerated piece and coating. <i>Sistema con protezione U.V., trasparente, a bassa viscosità, differenti indurenti per manufatti colati similvetro, agglomerati e finiture.</i>
	W 243 Slow react	100:40	40-60 min. (200ml)	Room temperature	(50°C)	70	
	W 241 Extra slow react	100:45	75-95 min.	Room temperature	(50°C)	65	
<b>EC 254LB</b> UV protected	W 254N Medium-fast react	100:50	15-25 min. (100ml)	Room temperature +50°C	(60°C)	87	U.V. protected low viscosity System, for carbon look composites coating and materials finishing. <i>Sistema per finitura trasparente di manufatti composti a vista di carbonio ed altri materiali.</i>
<b>AS 15</b> milky + Y 28 foaming Agent	W 242NF Medium react	100: 0,5-1,5: 45	5-15	Room temperature	(50°C)	70	Thixotropic casting resin, foaming up to 2-5 times for small or large light elements <i>Sistema da colata tixotropico, espandente da 2 a 5 volte per piccoli o grandi elementi leggeri.</i>
	W 241 Slow react		15-30			70	
<b>PC224 GLASS MR</b> Transparent aliphatic System PU, UV resistant	G124 transparent	100:65	25-35 min. (500ml)	Room temperature	(50°C)	83	U.V. resistant aliphatic PU System for solid casting maximum thickness 40 mm. <i>Sistema poliuretano alifatico, resistente U.V. per colate a spessore massimo 40 mm.</i>

#### COLD CURING + POST CURING

#### MASTER MODELS AND TOOLS FOR COMPOSITES

<b>EPIBLOCK EB 690</b>	GREEN	EPOXY BOARD d=650 * standard size : 1500x500x100/75/50mm. TAVOLA EPOSSIDICA d=650 *dimensione standard 1500x500x100/75/50 mm.				135	Master models and thermoresistant tools for epoxy pre-pregs tools and parts. <i>Modelli master e stampi termoresistenti per pre-pregs epossidici.</i>
<b>PURBLOCK RANGE</b>	Many density and colours	Polyurethane boards for modeling and tools				80-90	Refer to "Tooling Resins Overview"
<b>MS 655 A</b> <b>MS 657 A</b> <b>MS 658 A</b> Grey or brown	<b>MS 655 B</b> <b>MS 657 B</b> <b>MS 658 B</b> White	100:100	35 - 45 min. (500ml)	Room temperature	(60°C)	68 68 63	Machine applied several epoxy pastes (d=0,6-0,7-0,75) for CNC large model and mould. <i>Diverse paste epossidiche (d=0,6-0,7-0,75) estrudibile a macchina mix-dos per modelli e stampi di media e grande dimensione.</i>
<b>MC 1164</b> filled Alu	W 341 Fast react	100:9	25 - 35 min. (200ml)	Room temperature	100-130°C	133	Aluminium filled thermal conductive system for mould casting. <i>Sistemi caricati alluminio termoconduttivi per stampi colati.</i>
	W 340 Medium react	100:9	150 - 180 min. (200ml)	Room temperature	100-130°C	135	
<b>MG 536</b> brown	W 503 Fast react	100: 19	15 - 25 min. (100 ml)	Room temperature /40°C	130°C	150	Polishable gelcoat, fast or long pot-life, room temp. curing, for thermal resistant. moulds and tools. <i>Gelcoat lucidabile a corto o lungo pot-life, per stampi e attrezzi ad alta resistenza termica.</i>
	W 506 Slow react	100:33	182 min	Room temperature /40°C	160°C	190	
<b>EC 57</b> Pale yellow	W 61 Slow react	100:16	68- 82 min. (100ml)	Room temperature +50°C	120°C	140	Long pot-life System for thermoresistant tools, infusion processed. <i>Sistema a lungo pot-life per stampi termoresistenti realizzati per infusione.</i>
<b>EC 257</b> Pale yellow	W 61 Slow react	100:16	220 - 240 min (200 ml)	Room temperature +35°C	160°C	190	Long pot-life System for thermoresistant tools, infusion processed. <i>Sistema a lungo pot-life per stampi termoresistenti realizzati per infusione.</i>
<b>EC 180</b> Amber	W340 Medium-slow react	100:36	220 - 240 min (100 ml)	Room temperature + 35°C	160°C	185	Long pot-life, Room temp. curing System, for thermal resistant. moulds and tools. Wet lay-up processed. <i>Sistema a lungo pot-life per laminazione manuale, indurimento a T.A. per stampi e attrezzi alta resistenza termica.</i>





RESIN RESINA	HARDENER INDURENTE	ACCELERATOR CATALIZZATORE	MIXING RATIO (% weight) RAPPORTO MIX (% in peso)	POT LIFE at 25°C TEMPO UTILE a 25°C	HOT CURING INDURIMENTO A CALDO	Tg °C Max	APPLICATIONS/PROPERTIES APPLICAZIONI/PROPRIETÀ
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HOT CURING		PULTRUSION/FILAMENT WINDING CASTING (*)					
EC 114 Pale yellow	W 132 Amine slow react	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. <i>Sistema a lungo pot-life con indurimento a moderata temperatura. Avvolgimento filamentare di manufatti piccole e medie dimensioni.</i>
EC 01 Pale yellow	WH 850.1 Anidryde hardener	W 45 or W847 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. <i>Sistemi a lungo pot-life con indurimento solo a caldo, con reattività dipendente dalla % di catalizzatore. Processi F.W., pressatura a caldo.</i>
EC 361 Pale yellow	WH 850.1 Anidryde 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) <i>Come sopra ma specifico per Sistemi con indurimento a caldo, molto caricati (utensili abrasive per lapidei e ceramico).</i>
EC 14PT Milk, with release agent	WH 102 Anidryde hardener	W 45 or W847 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. <i>Sistema a lungo pot-life con Indurimento solo ad alta T, contenente cera distaccante per pultrusione ad alta velocità di parti in composito.</i>
	WH 113 Anidryde hardener accelerated	-	100:90				
MC 103 Light filled with release agent	WH113 Anidryde hardener accelerated	-	100:77	6-8 h	5-15 min 160-190°C + post-curing	120	
EC 327 Pale yellow	WH 102 Pale yellow	W 45 or W847 Pale yellow/brown	100:115:1,5-3	6-24 h	80°C+140°C +180°C	200	Very low viscosity and long pot-life system. High temperature curing only. Filament Winding and press moulding for high thermal resistant composite part. <i>Sistemi a bassissima viscosità, Lungo pot-life con indurimento solo ad alta T. Filament winding e stampaggio sotto pressa di parti in composito ad alta resistenza termica.</i>

(\*) Other Systems available for specific needs (i.e. different reactivity) – Altri Sistemi sono disponibili per specifiche necessità (es. differente reattività)

**U.V. CURE RESIN WITH SPECIAL LAMP AND ANCILLARY PRODUCTS  
CLEAR FINISH RETOUCH**

**RESINA INDURENTE CON LAMPADA U.V. E ACCESSORI  
RITOCO DI FINITURE TRASPARENTI**

<b>DYMAX SYSTEM SISTEMA DYMAX</b>			<p>UV cure system complete with lamp, protected resin cartridge DYMAX, ancillary products for fast retouch of transparent surfaces finish and carbon look composite. <i>Sistema completo composto da lampada U.V. e cartucce di resina protetta DYMAX per il ritocco rapido di superficie finitura trasparente quali i manufatti in materiale composito con fibra di carbonio a vista.</i></p>

ADD-UP2	For gelcoat or polyester/ vinylester resins	Transparent Trasparente	100:1,8-2,2	-	-	-	Special additive compatibilizer gelcoat or polyester/vinylester skin coat with epoxy resins. Please check TDS. <i>Speciale additivo compatibilizzante gelcoat e resine poliesteri/vinilesteri skin coat con resine epossidiche. Vedi procedura sul B.T.</i>
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# STRUCTURAL ADHESIVES

ADH version available in cartridges

## ADESIVI STRUTTURALI

ADH: versione disponibile in cartucce



FAST ↓ ↓ ↓ SLOW	ASPECT	MIX RATIO by WEIGHT MIX RATIO by VOLUME	GELIFICATION TIME (1 mm 25°C) minutes	SETTING TIME // RECOMMENDED CURING PROFILE (*)	Tg °C MAX	SHEAR STRENGTH (N/mm <sup>2</sup> )	APPLICATIONS/PROPERTIES
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### 2-COMPONENT SYSTEMS - COLD OR MODERATE TEMPERATURE CURING

EPOXY	AS52/AW13 (ADH52.13)	Fluid Transparent Lightly yellow	100:100 100:100	3	7 m. RT // 2h 25°C or more	45	11-13 Alum 11-13 Inox	Aluminium, steel, plastic, composite fast repairing and bonding. <i>Riparazioni e incollaggi rapidi di alluminio, acciaio, compositi, plastici.</i>
	AS46/AW46 (ADH 46.46)	Lightly thixo Amber	100:80 100:100	330	7 h RT // 7 days RT or 16h 40°C	57	21-26 Alum 21-26 Inox	Universal adhesives with different viscosity for plastics, aluminium, steel, carbon composite and FRP part, wood, glass, ceramic, and tooling board. <i>Adesivi universali a diversa viscosità per incollaggi strutturali di alluminio, acciaio, legno, materiali compositi, vetro, ceramici, plastici, tavole lavorabili.</i>
AS90/AW42 (ADH90.42)	Heavy thixo Milky	100:80 100:100	210	7 h RT // 7 days RT or 6h 60±80°C	70	30-37 Alum 17-21 Inox	Black, fatigue resistant structural Adhesive for carbon/aluminium/steel composite parts (car, bike, sporting goods). High thermal and chemical resistance. <i>Incollaggio strutturale resistente alla fatica, di parti in composito carbonio/alluminio/acciaio, (auto, bici, moto, articoli sportivi). Elevata resistenza termica e chimica.</i>	
AS89.1/AW89.2 (ADH891.892)	Thixo Black Contrasting colours	100:45 100:50	135	4 h. RT // 2 h 80°C or 5 h 50°C	80	27-33 Alum 27-33 Inox 32-39 Carbon fiber laminated	Fatigue resistant structural Adhesives whit different reactivities for Wind blade, aircraft, boat hull, train part assembling (aluminium/ FRP/ honeycomb/ steel/ ceramic/ glass). High chemical resistance. <i>Adesivi strutturali resistenti alla fatica con differenti reattività per assemblaggio di pale eoliche, ultraleggeri, scafi (metalli/ FRP/ honeycomb/ ceramica /vetro). Elevata resistenza chimica.</i>	
AS90/AW90 (ADH90.90)	Heavy Thixo Lightly contr. colours No sag till 10mm GI Approved Systems	100:45 100:50	90	2,5 h RT	7 days RT or 5h70°C	75	25-30 Alum 26-31 Inox	Elevata resistenza chimica.
AS90/AW91 (ADH90.91)			330	7 h RT				
AS90/AW92			540	14 h RT				
AS90/AW93			840	24 h RT				
AS94/AW94	Black or grey castable	100:30	180 / 3 - 100 C°	1,5 h 60°C or 30 m 80°C or 15 m 100°C	67	18-22 Alum 22-26 Inox 4-6 ABS	Black or Grey structural epoxy adhesive for ski and Winter sports composites articles. <i>Adesivo strutturale per sci e articoli sportivi. Disponibile nel colore Nero e Grigio</i>	
AS95/AW95 (ADH95.95)	Thixo Transparent	100:45 100:50	5	20 m RT// 24 h RT or 3h 50°C or more	98	11-13 Alum 15,5-18,5 Inox	Clear epoxy-acrylate Adhesive for quick repairing and bonding for aluminium, steel, plastic, composite and tooling board. <i>Adesivo epossidico-acrilato per riparazioni e incollaggi rapidi di alluminio, acciaio, compositi, plastici e tavole lavorabili</i>	
AS96/AW96 (ADH96.96)	Filled Thixo Black Contrasting colours	100:100 100:100	7	35 m RT// 24 h RT or 3 h 50°C or more	84	15,5-18,5 Alum 16-20 Inox	Epoxy-acrylate adhesives with different reactivities for repairing and bonding aluminium, steel, plastic, composite. <i>Adesivi epossidico-acrilato per riparazioni e incollaggi rapidi di alluminio, acciaio, compositi, plastici e tavole lavorabili</i>	
AS97/AW96 (ADH97.96)	Filled Thixo Black Contrasting colours	100:100 100:100	70	1,5 h RT// 24 h RT or 3 h 50°C or more	86	15,5-18,5 Alum 20-24,5 Inox		
AS98/AW98 (ADH98.98)	Filled Thixo Beige	100:100 100:100	90	4 h RT// 24 h RT or 3 h 50°C or more	78	18-22 Alum 24-28 Inox		
AS15/AW15 + EF18T	Thixotropic Milky, filled with EF18T green	100:15:20	110	3,5 h RT/ 24 h RT + 12 h 60°C or more	103	8-10 Alum	Thixotropic adhesive with separated filler for epoxy board bonding and sealing. <i>Adesivo tissotropico con carica a parte, per Incollaggio e stuccatura di tavole epossidiche</i>	
AS50/AW50 (ADH50.50)	Filled Heavy thixo Dark grey Contrasting colours	100:50 100:50	60	2 h RT// 7 days RT or 6h 60±80°C	105	14-18 Alum 18-22 Inox	Structural Adhesives for pultruded part, metal, ceramic and glass. Low thermal expansion coefficient, good thermal conductivity. High chemical and thermal resistance. AS60/AW60 withstand 150°C. <i>Incollaggi strutturali di elementi pultrusi, SMC, metalli, ceramica e vetro. Basso coefficiente di dilatazione, buona conducibilità termica, elevata resistenza termica e chimica. AS60/AW60 può operare fino a T. di 150°C.</i>	
AS60/AW60	Filled Heavy thixo Dark grey Contrasting colours	100:50 100:50	90	2,5 40 C°// 15hRT + 3h 130°C	135	14-18 Alum 15-19 Inox		
POLYURETHANE	PC200/G8 PC200DT/G200	Filled PU liquid Neutral milky Thixotropic	100:25 100:25	240 90	6 h RT// 1-2 days RT 3 h RT// 1-2 days RT	n.a. n.a.	13,5-16,5 Alum 6,5-7,5 Inox 3,5-4,5 ABS 5-7 PVC	Filled adhesives PU for Aluminium and phenolic laminate sheet of honeycomb panels, thermoplastic, FRP, tooling board bonding. Fluid and thixotropic type. <i>Adesivi PU caricati, versione fluida e tissotropica (DT), per incollaggi di alluminio e laminati fenolici di pannelli honeycomb, termoplastici, vetroresina, tavole lavorabili compatte.</i>
	ADH PU 3005 flexible translucent ADH PU 6005 low module translucent	Unfilled PU very tixotropic	100:100	6	15 m. RT // 8 h RT	-10	6-8 PVC 6-8 PA	Three type of sealant adhesives PU, flexible ShoreA85, low module Shore D60, rigid Shore D85 for fast repairing and bonding thermoplastic, FRP and many other materials (available in cartridge with static mixer and manual dispenser for 50 ml, 200 ml, 400 ml) <i>Tre tipi di adesivi sigillanti PU, flessibile Shore A85, basso modulo Shore D60, rigido Shore D85, adatti per riparazioni rapide e incollaggi strutturali di termoplastici, vetroresina e molti altri materiali (disponibili in cartucce da 50 ml, 200 ml, 400 ml con mixer statico e erogatore manuale).</i>
	50					10-12 Alum 7-8 ABS 8-10 SMC		
ADH PU 8505 rigid black						55	11-14 Alum 10-12 Inox 13-15 FRP	

(\*) The recommended curing profile refers to the maximum adhesive properties. For different curing cycles refers to data sheets.



## **ELANTAS Europe s.r.l.**

Strada Antolini, 1  
Fraz. Lemignano  
43044 Collecchio (PR) - Italy

Tel. +39 0521 304777  
Fax +39 0521 804410

EEMEurope.elantas@altana.com  
info.elantas.europe@altana.com  
www.elantas.com

Selling organisation  
Application laboratories  
Production plant  
R&D centre of competence