



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 D'UTILIZ. 25 °C	CURING TEMP. TEMP. POLIMER.	POST CURING POST INDURIMENTO	Tg °C MAX	APPLICATIONS/PROPERTIES APPLICAZIONI/PROPRIETA'
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COLD TO HOT CURING

WET-LAYUP

EC 130LV Light violet	W 341 Neutral	100:30	8 - 15 min. (100 ml)	Room tem. / 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. <i>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.</i>
EC 130LV Light violet	W 342 Neutral	100:30	22 - 27 min. (100 ml)	Room tem. / 70 °C	(120 °C)	118	
EC 130LV Light violet	W 340 Neutral	100:30	50 - 70 min. (100 ml)	Room tem. / 70 °C	(120 °C)	135	
EC 130LV Light violet	W 152 XLR Neutral	100:30	180 - 200 min. (100 ml)	Room tem. / 70 °C	(80 °C)	103	
EC 130LV Light violet	W 132 Neutral	100:38	240 - 280 min. (100 ml)	Room tem. / 70 °C	(80 °C)	100	
EC 152 Neutral	W 152 HR Neutral	100:30	12 - 17 min. (200 ml)	Room tem. / 70 °C	(70 °C)	80	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 <i>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</i>
EC 152 Neutral	W 152 MR Neutral	100:30	35 - 45 min. (200 ml)	Room tem. / 70 °C	(70 °C)	107	
EC 152 Neutral	W 152 LR Neutral	100:30	90 - 110 min. (200 ml)	Room tem. / 70 °C	(70 °C)	104	
EC 152 Neutral	W 152 XLR Neutral	100:30	100 - 120 min. (200 ml)	Room tem. / 70 °C	(70 °C)	97	
EC 155 Neutral	W 155 Neutral	100:35	9 - 13 min. (100 ml)	Room tem. / 50 °C	(60 °C)	87	
EC 155 Neutral	W 558 Neutral	100:35 For putty add: - EF18T or - EF 23 or - EF 232	7 - 10 min. (100 ml)	Room temperature	(60 °C)	85	<i>Resina abbinata a indurenti molto reattivi per produzione su larga scala di articoli sportivi. W155 per laminazione. W 558 come base per stucchi.</i>

COLD TO HOT CURING

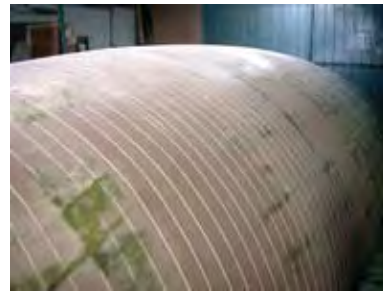
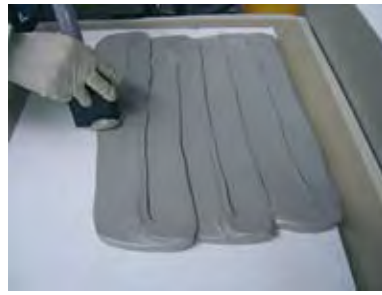
PRESS MOULDING - RTM

EC 577 Neutral	W 342 Neutral	100:30	15 - 25 min. (100 ml)	60 °C	(120 °C)	120	Fast curing system for high temperature press mould (wakeboards, surf, windsurf, snowboards).
EC 131LV Light violet	W 342 Neutral	100:25	22 - 32 min. (100 ml)	Room tem. / 50 °C	(120 °C)	92	<i>Sistema a rapido indurimento per stampi pressa a caldo (wake boards, windsurf, snowboards).</i>
EC 157 Neutral	W 557 Neutral	100:18	20 - 30 min. (100 ml)	Room tem. / 100 °C	(120 °C)	100	Fast curing low viscosity system for high temperature mould. Small RTM component. <i>Sistema a bassa viscosità e rapido indurimento per stampi a caldo. Stampaggio RTM di piccoli manufatti.</i>

COLD CURING + POST CURING

INFUSION

EC 157 Neutral	W 152 MR Neutral	100:30	40 - 50 min. (200 ml)	Room tem. / 50 °C	(70 °C)	102	Very low viscosity and medium - long pot-life system. Suitable for medium and large infusion component (i.e. wind turbine blades and boats).
EC 157 Neutral	W 152 LR Neutral	100:30	110 - 130 min. (200 ml)	Room tem. / 50 °C	(70 °C)	98	<i>Sistema a bassissima viscosità e medio e lungo pot-life. Specifico per l'infusione di parti di medie e grandi dimensioni (es.pale eoliche, barche).</i>
EC 157 Neutral	W 152 XLR Neutral	100:30	120 - 150 min. (100 ml)	Room tem. / 50 °C	(70 °C)	90	



RESIN RESINA	HARDENER INDURENTE	MIXING RATIO (% weight) RAPPORTO MIX (% in peso)	POT LIFE MIN 25 °C TEMPO D'UTILIZ. 25 °C	CURING TEMP. TEMP. POLIMER.	POST CURING POST INDURIMENTO	Tg °C MAX	APPLICATIONS/PROPERTIES APPLICAZIONI/PROPRIETA'
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COLD CURING

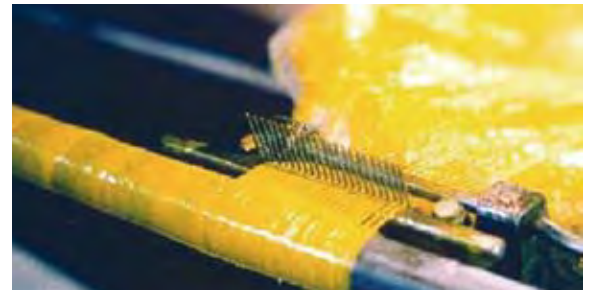
BOATS MAINTENANCE

EC 148 Neutral	W 147 Neutral	100:45	15 - 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 contrasting colour system to check the proper mixing. For antiosmosis barrier, wet-layup laminating and putty.
EC 398 Tix Yellow	W 147 Red	For putties add: - EF 18T or - EF 23 or - EF 232	12 - 20 min. (100 ml)				
EC 360 Neutral	W 222 Neutral	100:45:40 (filler EF18T)	180 - 300 min. 90 - 150 min. with EF 18T (100 ml)	Room temperature	(50 °C)	63	Long pot-life system to be filled with hollow microspheres for light and large surface casting. <i>Sistema lungo pot-life da caricare con microsfere cave per colate leggere e di grandi superfici.</i>
EC 141 NF Neutral	W 242 Neutral	100:45	35 - 45 min.	Room temperature	(50 °C)	58	Transparent systems for small and large casting (W242=10mm, W243=25mm, W241=50mm). Good UV resistance.
EC 141 NF Neutral	W 243 Neutral	100:40	40 - 60 min. (200 ml)	Room temperature	(50 °C)	70	<i>Sistemi trasparenti per colate di piccole e grandi dimensioni (W242=10mm, W243=25mm, W241=50mm).</i>
EC 141 NF Neutral	W 241 Neutral	100:45	75 - 95 min.	Room temperature	(50 °C)	65	<i>Buona resistenza agli UV.</i>

COLD CURING + POST CURING

MASTER MODELS AND TOOLS COMPOSITES

MS 656 A Grey	MS 656 B White	100:50	35 - 45 min. (500 ml)	Room temperature	(50 °C)	55	Epoxy extruding paste by meter-mix-dispense for CNC and Style models or medium and large mould. <i>Pasta epossidica estrudibile a macchina mix-dos per modelli CNC e di stile e per stampi di media e grande dimensione</i>
MC 1164 Filled Alu	W 341 Neutral	100:9	25 - 35 min. (200 ml)	Room temperature	100-130 °C	133	Aluminium filled thermal conductive system for gelcoat and casting mould.
MC 1164 Filled Alu	W 340 Neutral	100:9	150 - 180 min. (200 ml)	Room temperature	100-130 °C	135	<i>Sistemi caricati alluminio termoconduttivi per gelcoat e stampi colati.</i>
EC 130LV Light violet	W 340 Neutral	100:30	50 - 70 min. (100 ml)	Room temperature	100-120 °C	135	Medium pot-life wet-lay up systems for thermoresistant tools up to 135 and 150°C.
EC 138 Neutral	W 340 Neutral	100:30	75 - 85 min. (100 ml)	Room temperature	120-140 °C	150	<i>Sistemi a medio pot-life per laminazione di stampi termoresistenti fino a 135°C e 150°C.</i>
EPIBLOCK EB 690	EPOXY BOARD d=700 *standard size: 1500x500x100/75/50 mm TAVOLA EPOSSIDICA d=700 *dimensione standard: 1500x500x100/75/50 mm					135	Master models and thermoresistant tools for epoxy pre-pregs tools and parts. <i>Modelli master e stampi termoreisistenti per pre-pregs epossidici</i>



RESIN RESINA	HARDENER INDURENTE	ACCELERATOR CATALIZZATORE	MIXING RATIO (% weight) RAPPORTO MIX (% in peso)	POT LIFE at 25 °C TEMPO D'UTILIZ. 25 °C	POST CURING POST INDURIMENTO	Tg °C MAX	APPLICATIONS/PROPERTIES APPLICAZIONI/PROPRIETA'
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HOT CURING			PULTRUSION/FILAMENT WINDING (*)				
EC 01 Neutral	IG 850 Neutral	K 45 Neutral	100:90:1,5÷3	6-24 h	80 °C+120 °C	130	Long pot-life system. High temperature curing only. Filament winding or pultrusion process item. <i>Sistemi a lungo pot-life con indurimento solo a caldo. Per manufatti compositi realizzati con tecnica filament winding o pultrusione.</i>
EC 01 Neutral	WH 102 Neutral	IG 847 Amber	100:90:1,5÷3	6-24 h	80 °C+120 °C	150	<i>Sistemi a medio-lungo pot-life con indurimento a temperatura moderata. Filament winding di compositi di piccole/medie dimensioni.</i>
EC 14 Neutral	W 222 Neutral	-	100:42	440 - 680 min. (100 ml)	50 °C+80 °C	83	Medium-long pot-life system. Moderate temperature curing. Filament winding for small-medium dimension composite parts.
EC 14 Neutral	W 282 Neutral	-	100:32	330 - 370 min. (100 ml)	50 °C+80 °C	83	<i>Sistemi a medio-lungo pot-life con indurimento a temperatura moderata. Filament winding di compositi di piccole/medie dimensioni.</i>
MC 102 Light Filled	WH 102 Neutral	K 75 Amber	100:82:2	6-8 h	5-15 min 160 °C-190 °C	155	Long pot life system. Very high temperature curing only. Containing wax. High speed pultrusion for glass, carbon fibre profiles, pipes and tubes.
MC 103 Light Filled	WH 102 Pale Amber	-	100:77	6-8 h	+ post-curing	120	<i>Sistemi a lungo pot-life con Indurimento solo ad alta T, contenente distaccante interno. Profili, tubi, condotte in fibra di vetro o carbonio, realizzati con alta velocità di poltrusione.</i>
R 327 Neutral	WH 102 Neutral	K 45 Neutral	100:115:1,5-3	6-24 h	80 °C+140 °C +180 °C	200	Very low viscosity and long pot-life system. Very high temperature curing only. Filament Winding and press moulding for high thermal resistant composite part.
R 328 Neutral	WH 102 Neutral	K 45 Neutral	100:115:1-2	6-24 h		210	<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 (ie. different reactivity)
Altri sistemi sono disponibili per specifiche necessità (es. differente reattività)

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	POT LIFE (100ml, RT) minutes	RECOMMENDED CURING CYCLE (*)	Tg C MAX	SHEAR STRENGTH (N/mm ²)	APPLICATIONS/PROPERTIES
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2-COMPONENT SYSTEMS - COLD OR MODERATE TEMPERATURE CURING

E P O X Y	AS52/AW12 (ADH52.12)	Fluid Transparent Light yellow	100:100 100:100	5-6	2h 25 °C or more	50	11-13 Alum 11-13 Inox	Aluminium, steel, plastic, composite fast repairing and bonding. AS88 is recommended for bonding vertical surfaces.
	AS53/AW11	Fluid Transparent Colourless	100:100 100:100	2-3	2h 25 °C or more	50	9-13 Alum 11-13 Inox	Riparazioni e incollaggi rapidi di alluminio, acciaio, compositi, plastici. AS88 è consigliato per incollaggi sopra testa o in verticale.
	AS53/AW11 (ADH88.11)	Thixotropic Milky	100:100 100:100	2-3	2h 25 °C or more	50	11-13 Alum 15-17 Inox	
	AS44/AW09	Light thixo Amber	100:80 100:100	40-50	7 days at RT or 6 h at 60±80 °C	70	21-26 Alum 21-26 Inox	Universal adhesives with different viscosity and sag resistance in vertical. Aluminium, steel, carbon composite and FRP part, wood, glass, ceramic, plastic and machinable board structural bonding.
	AS89/AW09 (ADH89.09)	Thixotropic Amber	100:80 100:100	25-40	7 days at RT or 6 h at 60±80 °C	70	27-33 Alum 27-33 Inox 32-39 Carbon	Adesivi universali a diversa viscosità e resistenza alla tenuta in verticale. Incollaggi strutturali di alluminio, acciaio, legno, materiali compositi, vetro, ceramici, plastici, tavole lavorabili
	AS90/AW42 (ADH90.42)	Heavy thixo Milky	100:80 100:100	30-45	7 days at RT or 6 h at 60±80 °C	70	30-37 Alum 17-21 Inox	
	AS89/AW89 (ADH89.89)	Thixotropic Black Contrasting colours	100:45 100:50	20-30	2h at 80 °C or 5h at 50 °C	90	27-33 Alum 27-33 Inox 32-39 Carbon fiber laminated	Composite part fatigue resistant structural bonding (car, bike, sporting goods) and different nature material bonding (aluminium, steel, FRP, glass, ceramic). High thermal and chemical resistance. Incollaggio strutturale di parti in composito resistenti alla fatica (auto, bici, moto, articoli sportivi) e per materiali di natura diversa (alluminio, acciaio, FRP, ceramica). Elevata resistenza termica e chimica.
	AS90/AW90 (ADH90.90)	Thixotropic Light contrasting colours No sag till 10 mm	100:45 100:50	10-15	7 days at RT or 5h at 70 °C	75	25-30 Alum 26-31 Inox	Wind turbine blade, aircraft, boat hull, train part fatigue resistant structural bonding and different nature material bonding (aluminium / FRP / honeycomb / steel / ceramic / glass). High chemical resistance. Incollaggi strutturali resistenti alla fatica di pale eoliche, ultraleggeri, scafi, parti di treni e materiali di natura diversa (metalli/ FRP/ honeycomb/ ceramica /vetro). Elevata resistenza chimica.
	AS90/AW91 (ADH90.91)			35-45		80		
	AS90/AW92			65-80		80		
	AS7/AW6	Filled Thixotropic Beige/Grey	100:100 100:100	25-35(**)	3-7 days at RT	60	11-15 Alum 16-20 Inox	Natural stone structural bonding and different nature material bonding. Smoothing, sealing and fastening in civil engineering. Incollaggio strutturale di materiali lapidei e di natura diversa. Rasature, sigillature e ancoraggi nell'ingegneria civile.
	AS7/AW16			10-16(**)			7-9 Alum 16-18 Inox	
	AS7/AW8			10-16(**)			7-9 Alum 16-18 Inox	
AS15/AW15+ EF18T	Thixotropic Milky filled with EF 18T green	100:15:20	10-18	24h at RT or 2h at 70-75 °C	103	8-10 Alum	Thixotropic adhesive with separated filler for epoxy board bonding and putty. Adesivo tissotropico con carica a parte, per incollaggio e stuccatura di tavole epossidiche.	
AS45/AW45	Filled Thixotropic Dark grey Contrasting colours	100:40±50 100:43±53	20-30	7 days at RT or 6h at 60±80 °C	100	8-11 Alum 17-20 Inox	Pultruded part, SMC, ferrite, metal, ceramic and glass structural bonding. Low thermal expansion coefficient, good thermal conductivity. High chemical and thermal resistance. Incollaggi strutturali di elementi poltrusi, SMC, ferriti, ceramica e vetro. Basso coefficiente di dilatazione, buona conducibilità termica, elevata resistenza termica e chimica.	
AS50/AW50 (ADH50.50)	Filled Heavy thixo Dark grey Contrasting colours	100:50 100:50	15-25(**)	7 days at RT or 6h at 60±80 °C	105	14-18 Alum 18-22 Inox		
P PC36L/G30	Filled PU Thixotropic Yellow	100:25 100:30	4-8	1-2 days at RT	45	7-9 Alum 6-8 Inox	Termoplastic, FRP and polyurethane machinable boards semirigid bonding. Incollaggi semirigidi di materiali termoplastici e vetroresina, tavole lavorabili poliuretatiche compatte.	

(*) Suggested curing cycle is recommended in order to achieve the best properties. For other curing cycles refer to data sheets, (**) Pot-life 200ml, RT

1-COMPONENT SYSTEMS - HOT CURING

E P O X Y	ASM 030 (ADH030)	Thixotropic Milky No sag at higt T	1-COMP	4 month 25 °C or 12 month 0 °C	2h at 120 °C	135	14-16 Alum 17-20 Inox	Metal, ceramic, ferrite and composite structural bonding high thermal resistant. Incollaggi strutturali di metalli, materiali ceramici, ferriti e compositi resistenti ad alta temperatura.
	ASM 105	Filled Heavy thixo Blue	1-COMP	4 month 25 °C or 12 month 0 °C	2h at 120 °C	90	16-20 Alum 20-24 Inox	One-component lamellar abrasive disk manufacturing. Monocomponente per realizzare dischi abrasivi lamellari.



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