EN

Product Information

Elan-tech®
EC 130LV/W 152 XLR 100:30

Epoxy system for large dimensions composites

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Resin	Hardener	Mixing ratio by weight
EC 130LV	**W 152 XLR**	**100:30**

Application: High performance composite parts of large size. Filament winding. Manufacturing of structural parts for boats, model aircrafts, racing vehicles, sport components.

Processing: Under vacuum impregnation, manual at atmospheric pressure, under vacuum bag for wood or by infusion or under vacuum infusion (SCRIMP) for glass, carbon, kevlar fabrics. Room temperature curing. Compared to traditional systems, this one also presents a high capability to post-cure with a moderate heat transfer.

Description: Un-filled, slow epoxy system with high elastic modulus. Long pot life. Post-curing at a moderate temperature is suggested to obtain the best performance for the system.

SYSTEM SPECIFICATIONS

Resin					
Viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	1.200	1.600
Hardener					
FTIR spectrum (correlation factor)		IO-10-75		0,990	1,000

TYPICAL SYSTEM CHARACTERISTICS

Processing Data					
Resin Colour				Violet	
Hardener Colour				Pale/yellow	
Mixing ratio by weight		for 100 g resin	g	100:30	
Mixing ratio by volume		for 100 ml resin	ml	100:37	
Viscosity at: 25°C	Hardener	IO-10-50 (EN13702-2)	mPas	10	30
Density 25°C	Resin	IO-10-51 (ASTM D 1475)	g/ml	1,14	1,16
Density 25°C	Hardener	IO-10-51 (ASTM D 1475)	g/ml	0,90	0,95
Pot life	25°C (40mm;100ml)	IO-10-53 (*)	min	180	200
Exothermic peak	25°C (40mm;100ml)	IO-10-53 (*)	°C	70	80
Initial mixture viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	500	800
Gelation time	25°C (15ml;6mm)	IO-10-73 (*)	h	6	8
	25°C (2mm)		h	8	10
Demoulding time	25°C (15ml;6mm)	(*)	h	22	26
Post-curing	60°C	(**)	h	(15)	
Maximum recommended thickness			mm	5 - 10	

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TYPICAL CURED SYSTEM PROPERTIES

Properties determined on specimens cured: 24 h TA + 15 h 60°C

Colour				Pale yellow	
Machinability				Excellent	
Hardness		IO-10-58 (ASTM D 2240)	Shore D/15	86	88
Glass transition (Tg)	7gg TA	IO-10-69 (ASTM D 3418)	°C	57	63
	48h TA		°C	50	56
	15h 40°C		°C	59	65
	15h 50°C		°C	78	84
	15h 60°C		°C	82	87
Maximum Tg	8 h 90°C	IO-10-69 (ASTM D 3418)	°C	97	103
Water absorption (24h RT)		IO-10-70 (ASTM D 570)	%	0,10	0,20
Water absorption (2h 100°C)		IO-10-70 (ASTM D 570)	%	0,90	1,00
Flexural strength		IO-10-66 (ASTM D 790)	MN/m²	104	110
Maximum strain		IO-10-66 (ASTM D 790)	%	5,5	6,0
Strain at break		IO-10-66 (ASTM D 790)	%	6,7	7,2
Flexural elastic modulus		IO-10-66 (ASTM D 790)	MN/m²	2.900	3.100
Tensile strength		IO-10-63 (ASTM D 638)	MN/m²	65	75
Elongation at break		IO-10-63 (ASTM D 638)	%	5	6
Compressive strength		IO-10-72 (ASTM D 695)	MN/m²	100	105

IO-00-00 = Elantas Italia's test method. The correspondent international method is indicated whenever possible.
nd = not determined na = not applicable RT = TA = laboratory room temperature (23±2°C)
Conversion units: 1 mPas = 1 cPs 1MN/m2 = 10 kg/cm2 = 1 MPa

(*) for larger quantities pot life is shorter and exothermic peak increases
(**) the brackets mean optionality
(***) The maximum operating temperature is given on the basis of laboratory information available being it function of the curing conditions used and of the type of coupled materials. For further possible information see post-curing paragraph.

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Instructions: Add the appropriate quantity of hardener to the resin, mix carefully. Avoid air trapping. For the surface preparation (mould or model) refer to the release agents data sheet.

Curing / Post-curing: Post curing is always advisable for RT curing systems in order to stabilize the component and to reach the best properties. It is necessary when the component works at a high temperature. Post cure the tool as stated in the table, increasing gradually 10°C/hour. The rate of heating and the indicated post-curing time are referred to standard specimen size. Users should evaluate the best conditions of curing or post-curing depending on the component size and shape. For big size components decrease the thermal gradient and increase the post-curing time. In the case of thin layer applications and composites post cure on the jig.

Storage: Epoxy resins and their hardeners can be stored for two years in the original sealed containers stored in a cool, dry place. he hardeners are moisture sensitive therefore it is good practice to close the vessel immediately after each use.

Handling precautions: Refer to the safety data sheet and comply with regulations relating to industrial health and waste disposal.

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