EN

Product Information

Elan-tech ®

ADH 90.90

AS 90/AW 90

100:45 by weight

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ELANTAS

	Resin	Hardener	Mixing ratio by weight
Structural adhesive	**AS 90**	**AW 90**	**100:45**
			Mixing ratio by volume
Cartridges kit		**ADH 90.90**	**100:50**

Applications: Structural resilient bonding. Structural adhesive for nautical application. Assembly of composite materials, metals, sport components.

Processing: Spatula application with mixing/dispensing devices. Room temperature or hot curing. Available also in cartridges of 400 ml.

Description: Two components modified, thixotropic epoxy system. Easy mixing ratio 2:1 by volume. Solvent free. Sag resistance till 10 mm. Good thermal resistance. High toughness. The system cured also at lower temperature than 20°C.

TYPICAL SYSTEM CHARACTERISTICS

Resin					
Resin Colour				Milky	
Viscosity at: 25°C		IO-10-50 (EN13702-2)	mPas	350.000	450.000
50°C			mPas	180.000	300.000
Density at: 25°C		IO-10-51 (ASTM D 1475)	g/ml	1,16	1,20
Hardener					
Hardener Colour				Neutral	
Viscosity at: 25°C		IO-10-50 (EN13702-2)	mPas	100.000	150.000
Density at: 25°C		IO-10-51 (ASTM D 1475)	g/ml	0,96	1,00
Processing Data					
Mixing ratio by weight		for 100 g resin	g	100:45	
Mixing ratio by volume		for 100 ml resin	ml	100:50	
Pot life	25°C (40mm;100ml)	IO-10-53 (*)	min	10	14
Exothermic peak	25°C (40mm;100ml)	IO-10-53 (*)	°C	135	150
Initial mixture viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	75.000	115.000
Gelation time	25°C (1mm)	IO-10-88 (ASTM D5895-03)	h	1	2
Setting time	25°C 0,1 mm	(*)	h	2	3
Suggested curing cycles		(**)		5 h 70°C	

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TYPICAL CURED SYSTEM PROPERTIES

Properties determined on specimens cured: 5 h 70°C (except different specifications)

Colour				Pale yellow	
Density 25°C		IO-10-54 (ASTM D 792)	g/ml	1,08	1,12
Hardness 25°C		IO-10-58 (ASTM D 2240)	Shore D/15	73	77
Glass transition (Tg)	15h 15°C	IO-10-69 (ASTM D 3418)	°C	27	33
	24h RT		°C	39	45
	7days RT		°C	49	55
	5h 70°C		°C	65	75
Max recommended operating temperature		(***)	°C	60 - 70	
Shear strength by tension:					
- Inox steel AISI 316 cured 5hRT (tested RT)		IO-10-80 (ASTM D 1002)	MPa	3,0	4,0
- Inox steel AISI 316 cured 15h15°C (tested RT)			MPa	13,5	16,5
- Inox steel AISI 316 cured 24hRT (tested RT)			MPa	17,0	21,0
- Inox steel AISI 316 cured 7days RT (tested RT)			MPa	21,5	26,0
- Inox steel AISI 316 cured 5h70°C (tested RT)			MPa	25,5	31,0
- Inox steel AISI 316 cured 5h70°C (tested 60°C)			MPa	7,0	9,0
- Inox steel AISI 316 cured 5h70°C (tested 80°C)			MPa	3,5	4,0
- Aluminium cured 5h70°C (tested RT)			MPa	23	28
Flexural strength		IO-10-66 (ASTM D 790)	MN/m²	60	70
Strain at break		IO-10-66 (ASTM D 790)	%	4,5	7,5
Flexural elastic modulus		IO-10-66 (ASTM D 790)	MN/m²	1.900	2.300
Tensile strength		IO-10-63 (ASTM D 638)	MN/m²	30	40
Elongation at break		IO-10-63 (ASTM D 638)	%	2,5	4,0

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: The surfaces must be clean and dry. Generally a mechanical abrasion or a sanding followed by solvent degreasing with solvent (ex. acetone) is sufficient. Add the proper quantity of the hardener to the resin, mix carefully. The final cleaning of the equipment can be carried on with normal solvent as acetone, nitro, etc.

Curing Post-curing: The post curing, always advisable for RT curing systems in order to stabilize the component and to reach the best properties, is necessary when the component works at high temperature.

Storage: Epoxy resins and their hardeners can be stored one year in the original sealed container stored in a cool and dry place. The hardeners are moisture sensitive therefore it is a 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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