

EN

Product Information

Elan-tech®

AS 90/AW 90

100:45

Cartridges kit ADH 90.90

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

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

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

Description: Two component, modified, thixotropic epoxy system. Easy mixing ratio 2:1 by volume. Solvent free. The product can be applied on a vertical thickness of 3-4mm. Good thermal resistance. High toughness. The system cured also at lower temperature than 20°C.

SYSTEM SPECIFICATIONS

Resin

Viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	350.000	450.000
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Hardener

Viscosity at:	25°C	IO-10-50 (EN13702-2)	mPas	90.000	140.000
Pot life	25°C (40mm;100ml)	IO-10-53 (*)	min	9	13

TYPICAL SYSTEM CHARACTERISTICS

Processing Data

Resin Colour				Milky
Hardener Colour				Neutral
Mixing ratio by weight		for 100 g resin	g	100:45
Mixing ratio by volume		for 100 ml resin	ml	100:50
Density	25°C Resin	IO-10-51 (ASTM D 1475)	g/ml	1,16 1,2
Density	25°C Hardener	IO-10-51 (ASTM D 1475)	g/ml	0,96 1,00
Exothermic peak	25°C (40mm;100ml)	IO-10-53 (*)	°C	150 170
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 (unless otherwise specified)

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
- Aluminium cured 5h70°C (tested -40°C)			MPa	19 23
Flexural strength		IO-10-66 (ASTM D 790)	MN/m ²	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/m ²	1.900 2.300
Tensile strength		IO-10-63 (ASTM D 638)	MN/m ²	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.

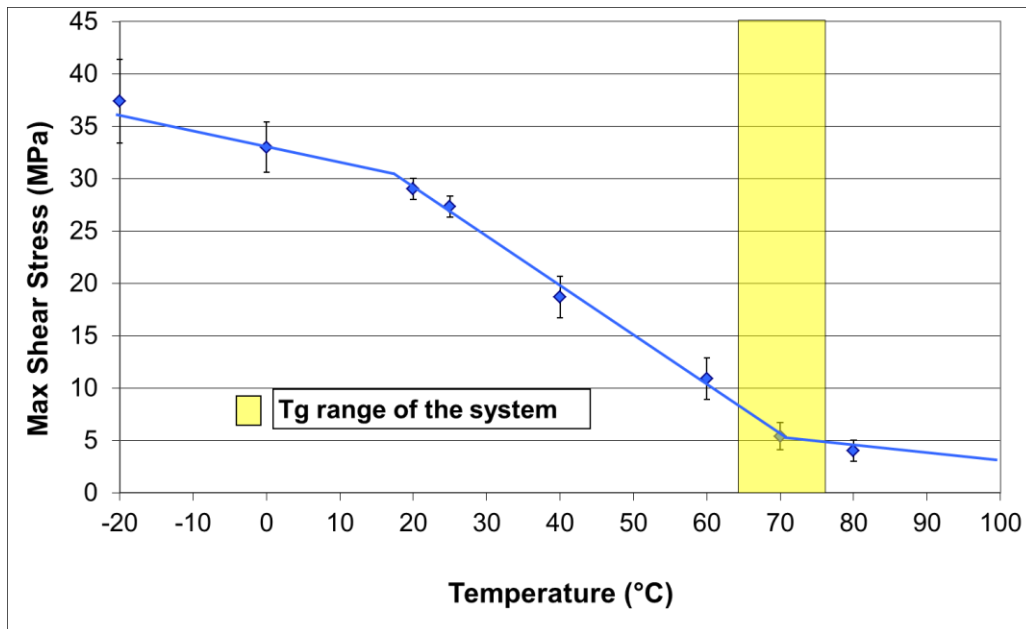
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- Instructions:** The surfaces must be clean and dry. Generally a mechanical abrasion or sanding followed by degreasing with solvent (ex. acetone) is sufficient. Add the appropriate quantity of hardener to the resin, mix carefully. The final cleaning of the equipment can be carried out with normal solvent such as acetone, nitro, etc.
- 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.
- Storage:** Epoxy resins and their hardeners can be stored for two years in the original sealed containers stored in a cool, dry place. The hardeners are moisture sensitive therefore it is good practice to close the container 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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revision n° 00

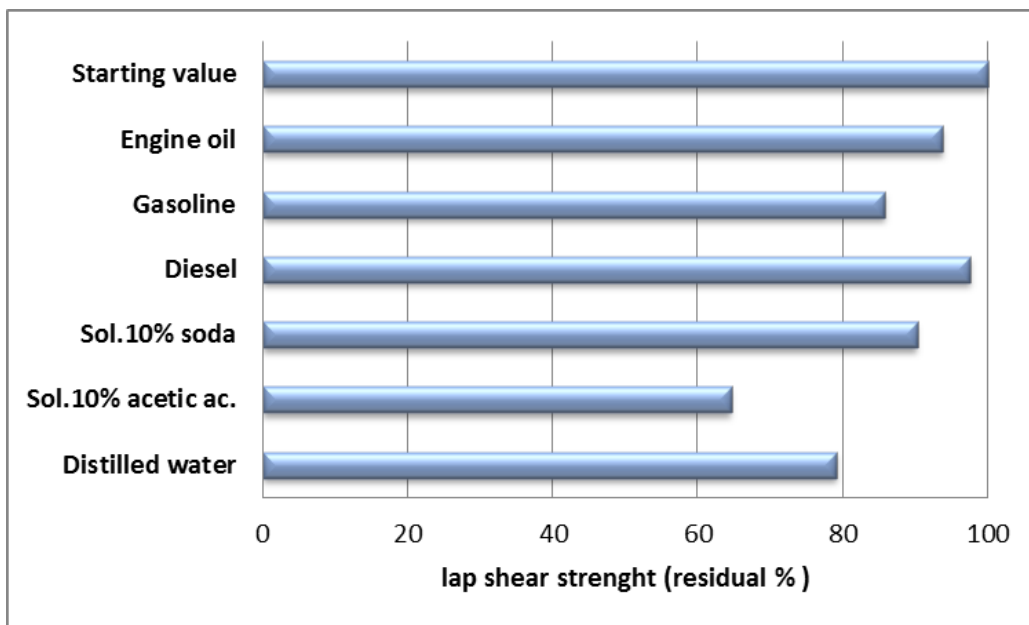
The information given in this publication is based on the present state of our technical knowledge but buyers and users should make their own assessments of our products under their own application conditions.

Dependence from temperature of the lap shear strength
(ASTM D1002)



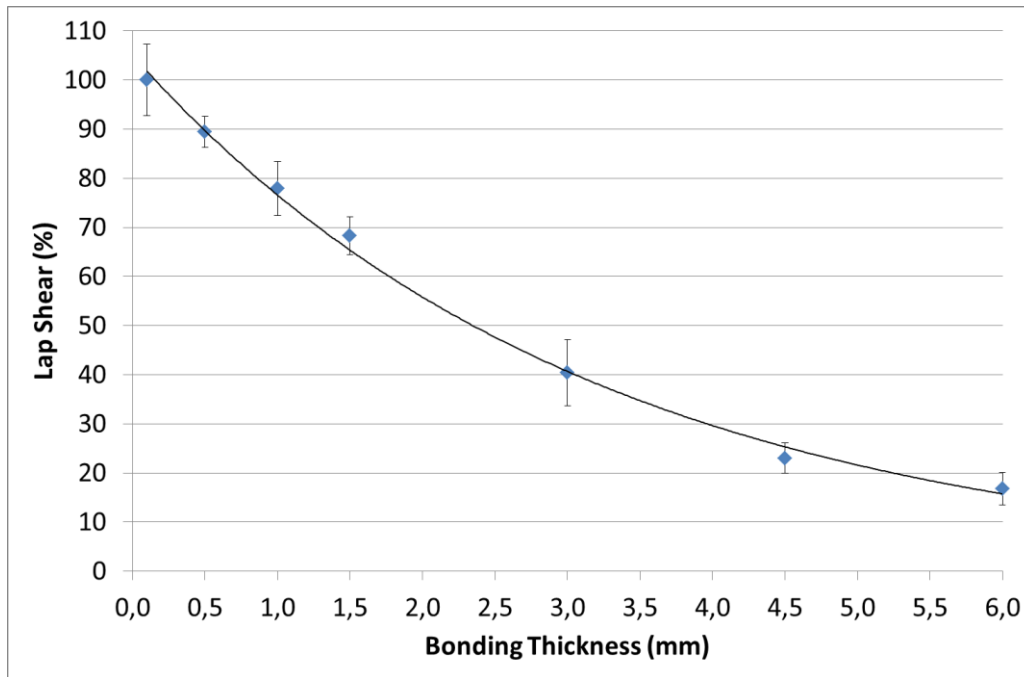
Support: stainless steel
Curing cycle: 5hrs at 70°C

Lap shear strength after immersion in different media
(ASTM D1002)



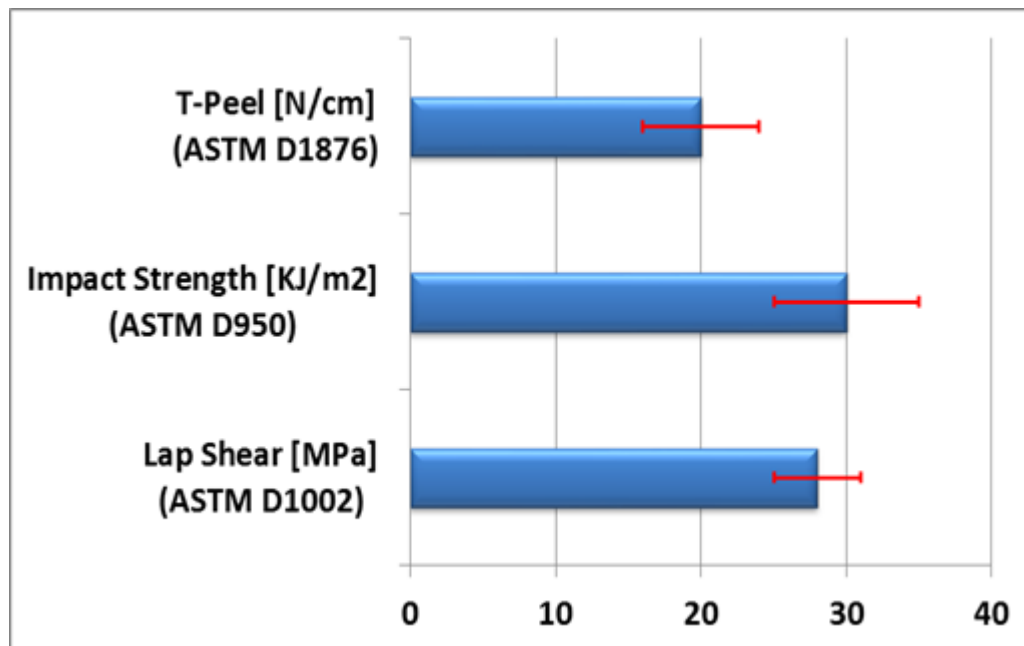
Support: stainless steel
Curing cycle: 5hrs at 70°C
The lap shear strength was determined after immersion for 30 days at 23±2 °C.

Influence of the bonding thickness on the adhesion shear (ASTM D1002)



Support: stainless steel
Curing cycle: 5hrs at 70°C

Adhesion properties of the system



Support: stainless steel
Curing cycle: 5hrs at 70°C