

EN

Preliminary Technical Data Sheet

Elan-tech®**AS 90/AW 92 NF**

100:45

2K unfilled epoxy adhesive

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Product description

- User friendly (no free BPA, no CMR)
- Easy application
- Very good ageing resistance
- Excellent peeling resistant
- Stiffened product with optimal elongation and resilience
- Good temperature resistance

Areas of application

Carbon composite, hybrid joints with different materials like metal inserts and epoxy composite parts, in automotive, sport items, other. For plastic bonding we recommend to check the specific material properties.

Processing methods

Application by hand or dispensing machine. Convenient mix ratio 2:1. To be applied on dry and clean substrate. Curing at room temperature (better not below 25 °C) or directly at 60-80 °C. Pretreatment of the surface might further improve the adhesion result.

Curing/Post-curing

Post-curing is always advisable for Room Temperature 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 and stability

Epoxy resin and its amine based hardener can be stored for two years in the original sealed containers stored in a cool, dry place.

Handling precautions

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

Typical product properties

AS 90

Properties	Conditions	Test Method	Value	M/U
Colour		--	Milky	
Viscosity	25 °C	IO-10-95 (ISO 3219)	350000 ÷ 450000	mPa·s
Density	25 °C	IO-10-51 (ASTMD 1475)	1,16 ÷ 1,20	g/ml

AW 92 NF

Properties	Conditions	Test Method	Value	M/U
Colour		--	Blue	
Viscosity	25 °C	IO-10-95 (ISO 3219)	70.000 ÷ 130.000	mPa·s
Density	25 °C	IO-10-51 (ASTMD 1475)	0,93 ÷ 0,97	g/ml

Typical system properties

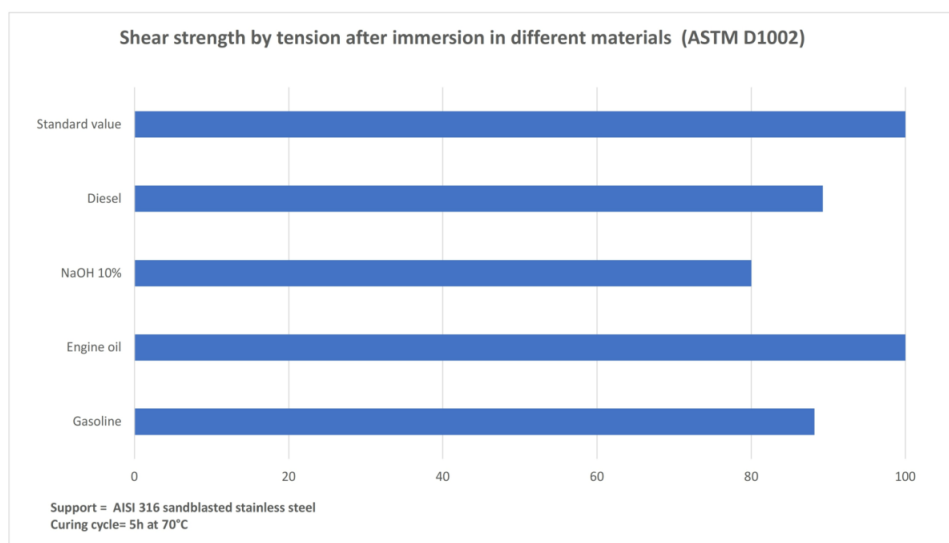
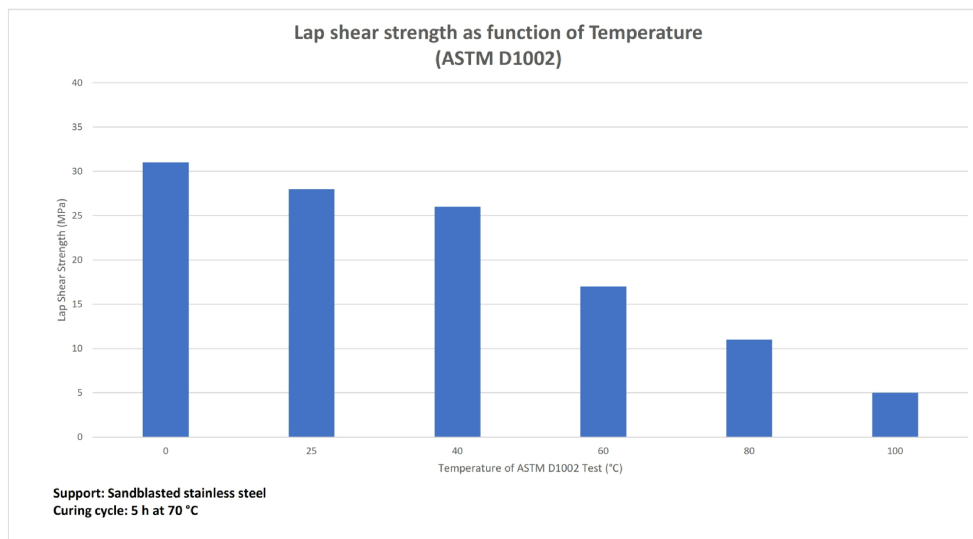
Properties	Conditions	Test Method	Value	M/U
Mix Ratio by weight		--	100:45	g
Mix Ratio by volume		--	100:55	ml
Initial mixture viscosity	25 °C	IO-10-95 (ISO 3219)	90.000 ÷ 135.000	mPa·s
Exothermic peak	25 °C - 40 mm - 100 ml	IO-10-53 (*)	40 ÷ 50	°C
Pot life	25 °C - 40 mm - 100 ml	IO-10-53	55 ÷ 65	min
Gel time (Tack Start/End)	25 °C - 1 mm	IO-10-88 (ASTM D 5895-03)	8 ÷ 9	hrs
Setting time	25 °C - 0,1 mm	(*)	10 ÷ 12	hrs
Suggested curing cycles		(**)	5 h at 70°C	

Typical cured system properties

Properties	Conditions	Test Method	Value	M/U
Specimens curing cycle		--	5 h at 70 °C	
Colour		--	Blue	
Density (solid)	25 °C	IO-10-54 (ASTM D 792)	1,10 ÷ 1,14	g/ml
Hardness	25 °C	IO-10-58 (ASTM D 2240)	80 ÷ 84	Shore D/15
Glass Transition (Tg)	4 days at 15 °C	IO-10-69 (ASTM D 3418)	37 ÷ 45	°C
	48 hours at RT		42 ÷ 50	°C
	7 days at RT		54 ÷ 62	°C
	5 h at 70 °C		78 ÷ 86	°C
Maximum Tg	5 h at 80 °C	IO-10-69 (ASTM D 3418)	84 ÷ 92	°C
Water absorption (24 h RT)		IO-10-70 (ASTM D 570)	0,20 ÷ 0,28	%
Water absorption (2 h 100 °C)		IO-10-70 (ASTM D 570)	0,50 ÷ 0,70	%
Linear thermal exp. (Tg -10 °C)		IO-10-71 (ASTM E 831)	70 ÷ 80	ppm/°C
Linear thermal exp. (Tg +10 °C)		IO-10-71 (ASTM E 831)	145 ÷ 165	ppm/°C

Typical mechanical properties in cured condition

Properties	Conditions	Test Method	Value	M/U
Specimens curing cycle		--	5 h at 70 °C	
Flexural strength	25 °C	IO-10-66 (ASTM D 790)	82 ÷ 92	MN/m ²
Strain at maximum stress	25 °C	IO-10-66 (ASTM D 790)	4,5 ÷ 6,5	%
Strain at break	25 °C	IO-10-66 (ASTM D 790)	4,6 ÷ 6,6	%
Flexural elastic modulus	25 °C	IO-10-66 (ASTM D 790)	2000 ÷ 3000	MN/m ²
Tensile strength	25 °C	IO-10-63 (ASTM D 638)	58 ÷ 68	MN/m ²
Elongation at break	25 °C	IO-10-63 (ASTM D 638)	3,5 ÷ 5,0	%
Compressive strength	25 °C	IO-10-72 (ASTM D 695)	63 ÷ 73	MN/m ²
Lap Shear Strength (LSS)	Inox Steel AISI 316 - 4 days at 15 °C	IO-10-80 (ASTM D 1002)	15 ÷ 23	MPa
	Inox Steel AISI 316 - 48 h at RT		22 ÷ 30	MPa
	Inox Steel AISI 316 - 5 h at 70 °C		24 ÷ 32	MPa
	Aluminum - 4 days at 15 °C		13 ÷ 21	MPa
	Aluminum - 48 h at RT		15 ÷ 23	MPa
	Aluminum - 5 h at 70 °C		16 ÷ 24	MPa



IO-00-00 = Elantas Europe internal 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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