

EN

Preliminary Technical Data Sheet

Elan-tech®

EC 147/W 147.1 NF

100:45

2K Unfilled epoxy system
Bisphenol A free

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Product description

- Low viscosity
- Suitable for curing at low temperature starting from 10 °C

Areas of application

Impregnation and treatment of concrete; anti-osmosis coating of wooden parts, Bisphenol A free.

Processing methods

Manual or machine mixing, application by brush or roll brush.

Curing/Post-curing

Post-curing is always advisable for Room Temperature curing system in order to stabilize the component and to reach the best properties. It is necessary when the component works at high temperature. Recommended post curing rump-up: 10°C/hour. Cool it down slowly. The rate of heating and the indicated post-curing time are referred to laboratory specimen size. Users should evaluate the best conditions of curing or post-curing depending on the component size and shape. For big size components it is advisable to decrease the thermal gradient and increase the post-curing time.

Storage and stability

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

Typical product properties

EC 147

Properties	Conditions	Test Method	Value	M/U
Colour		--	Pale Yellow	
Viscosity	25 °C	IO-10-50 (ISO 3219)	450 ÷ 650	mPa·s
Density	25 °C	IO-10-51 (ASTM D 1475)	1,13 ÷ 1,17	g/ml

W 147.1 NF

Properties	Conditions	Test Method	Value	M/U
Colour		--	Pale yellow	
Viscosity	25 °C	IO-10-50 (ISO 3219)	380 ÷ 570	mPa·s
Density	25 °C	IO-10-51 (ASTM D 1475)	1,00 ÷ 1,04	g/ml

Typical system properties

Properties	Conditions	Test Method	Value	M/U
Mix Ratio by weight		--	100 : 45	g
Mix Ratio by volume		--	100 : 50	ml
Initial mixture viscosity	25 °C	IO-10-50 (ISO 3219)	500 ÷ 650	mPa·s
Exothermic peak	25 °C - 40 mm - 100 ml	IO-10-53 (*)	165 ÷ 185	°C
Pot life	25 °C - 40 mm - 100 ml	IO-10-53	15 ÷ 25	min
Gel time	25 °C - 1 mm	IO-10-88 (ASTM D 5895-03)	3,5 ÷ 5,5	hrs
Suggested curing cycles		(**)	24 h RT + 15 h 60 °C	

Typical cured system properties

Properties	Conditions	Test Method	Value	M/U
Specimens curing cycle		--	24 h RT + 15 h 60 °C	
Density (solid)	25 °C	IO-10-54 (ASTM D 792)	1,08 ÷ 1,12	g/ml
Hardness	25 °C	IO-10-58 (ASTM D 2240)	80 ÷ 85	Shore D/15
Glass Transition (Tg)	24 h RT + 15 h 60 °C	IO-10-69 (ASTM D 3418)	55 ÷ 62	°C
Maximum Tg	5 h 120 °C	IO-10-69 (ASTM D 3418)	60 ÷ 65	°C
Water absorption (24 h RT)		IO-10-70 (ASTM D 570)	0,11 ÷ 0,17	%
Water absorption (2 h 100 °C)		IO-10-70 (ASTM D 570)	0,55 ÷ 0,65	%

Typical mechanical properties in cured condition

Properties	Conditions	Test Method	Value	M/U
Specimens curing cycle		--	24 h RT + 15 h 60 °C	
Flexural strength	25 °C	IO-10-66 (ASTM D 790)	80 ÷ 100	MN/m ²
Strain at maximum stress	25 °C	IO-10-66 (ASTM D 790)	4,0 ÷ 6,0	%
Strain at break	25 °C	IO-10-66 (ASTM D 790)	10 ÷ 15	%
Flexural elastic modulus	25 °C	IO-10-66 (ASTM D 790)	2500 ÷ 3100	MN/m ²
Tensile strength	25 °C	IO-10-63 (ASTM D 638)	55 ÷ 65	MN/m ²
Nominal strain at break	25 °C	IO-10-63 (ASTM D 638)	6,0 ÷ 8,0	%
Compressive strength	25 °C	IO-10-72 (ASTM D 695)	95 ÷ 115	MN/m ²

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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