

EN Technical Data Sheet

## Elan-tech<sup>®</sup> EC 152/W 152 XXLR

## 100:28

2K unfilled epoxy system for Pipe Relining

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## **Product description**

- 2K unfilled epoxy system
- Neutral colour
- Extra-slow reactivity hardener
- Hot curing process
- Very low shrinkage

## **Areas of application**

Repair and renovation of sewage pipes. Large size Pipe Relining.

#### **Processing methods**

Impregnation on site, with the aid of vaccum, of glass fiber and felt liner used in the repair and renovation of the piper. Cured in Place Pipe Process (CIPP) at minimum 80  $^{\circ}$ C for 4 hours with hot water or steam.

#### **Curing/Post-curing**

Post-curing is not required if the CIPP is performed at the recommended temperatures and times.

#### 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.



## **Sales specifications**

## EC 152

Properties	Conditions	Test Method	Value	M/U
Viscosity	25 °C	IO-10-50 (ISO 3219)	1200 ÷ 1800	mPa∙s

## W 152 XXLR

Properties	Conditions	Test Method	Value	M/U
Viscosity	25 ℃	IO-10-50 (ISO 3219)	10 ÷ 30	mPa∙s

## **Typical product properties**

#### EC 152

Properties	Conditions	Test Method	Value	M/U
Colour			Pale Yellow	
Viscosity	25 °C	IO-10-50 (ISO 3219)	1200 ÷ 1800	mPa∙s
Density	25 °C	IO-10-51 (ASTM D 1475)	1,13 ÷ 1,15	g/ml

## W 152 XXLR

Properties	Conditions	Test Method	Value	M/U
Colour			Pale yellow	
Viscosity	25 ℃	IO-10-50 (ISO 3219)	10 ÷ 30	mPa∙s
Density	25 ℃	IO-10-51 (ASTM D 1475)	0,96 ÷ 1,00	g/ml

## **Typical system properties**

Properties	Conditions	Test Method	Value	M/U
Mix Ratio by weight			100 : 28	g
Mix Ratio by volume			100 : 33	ml
Initial mixture viscosity	25 °C	IO-10-50 (ISO 3219)	700 ÷ 1100	mPa∙s
Exothermic peak	25 °C - 80 mm - 500 ml	IO-10-53 (*)	165 ÷ 185	°C
Pot life	25 °C - 80 mm - 500 ml	IO-10-53 (*)	130 ÷ 190	min
Gel time	25 °C - 100 ml	IO-10-52a	nd	min
Gel time	25 °C - 3 mm	IO-10-88 (ASTM D 5895-03)	13 ÷ 15	min
Gel time (Tack Start/End)	25 °C - 3 mm - Tack Start	IO-10-88 (ASTM D 5895-03)	na	hrs
Suggested curing cycles		(**)	4 h 90 °C	

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## **Typical cured system properties**

Properties	Conditions	Test Method	Value	M/U
Specimens curing cycle			4 h 90 °C	
Density (solid)	25 ℃	IO-10-54 (ASTM D 792)	1,12 ÷ 1,16	g/ml
Hardness	25 ℃	IO-10-58 (ASTM D 2240)	83 ÷ 87	Shore D/15
Class Transition (Tr)	4 h 80 °C	IO 10 60 (ASTM D 2418)	65 ÷ 71	°C
Glass Transition (Tg)	4 h 90 °C	10-10-69 (ASTM D 3418)	72 ÷ 78	°C
Maximum Tg	4 h 120 °C	IO-10-69 (ASTM D 3418)	84 ÷ 90	°C
Water absorption (24 h RT)		IO-10-70 (ASTM D 570)	0,1 ÷ 0,2	%
Water absorption (2 h 100 °C)		IO-10-70 (ASTM D 570)	0,3 ÷ 0,4	%
Linear thermal exp. (Tg -10 °C)		IO-10-71 (ASTM E 831)	78 ÷ 84	ppm/°C
Linear thermal exp. (Tg +10 °C)		IO-10-71 (ASTM E 831)	200 ÷ 220	ppm/°C
Max recommended operating temperature		(***)	70	°C

## Mechanical properties in cured condition

Properties	Conditions	Test Method	Value	M/U
Specimens curing cycle			4 h 90 °C	
Flexural strength	°C	IO-10-66 (ASTM D 790)	100 ÷ 115	MN/m²
Strain at maximum stress	25 ℃	IO-10-66 (ASTM D 790)	4,5 ÷ 6,5	%
Strain at break	25 ℃	IO-10-66 (ASTM D 790)	8,0 ÷ 12,0	%
Flexural elastic modulus	25 ℃	IO-10-66 (ASTM D 790)	2700 ÷ 3300	MN/m²
Tensile strength	25 ℃	IO-10-63 (ASTM D 638)	72 ÷ 82	MN/m²
Nominal strain at break	25 ℃	IO-10-63 (ASTM D 638)	4,0 ÷ 6,0	%
Compressive strength	25 ℃	IO-10-72 (ASTM D 695)	75 ÷ 85	MN/m²

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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