EN

Technical Data Sheet

# Elan-tech®

## 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 °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 °C | 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 °C | IO-10-50 (ISO 3219) | 10 ÷ 30 | mPa·s |
| Density | 25 °C | 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 | |

## Typical cured system properties

| Properties | Conditions | Test Method | Value | M/U |
|---|---|---|---|---|
| Specimens curing cycle | | -- | 4 h 90 °C | |
| Density (solid) | 25 °C | IO-10-54 (ASTM D 792) | 1,12 ÷ 1,16 | g/ml |
| Hardness | 25 °C | IO-10-58 (ASTM D 2240) | 83 ÷ 87 | Shore D/15 |
| Glass Transition (Tg) | 4 h 80 °C | IO-10-69 (ASTM D 3418) | 65 ÷ 71 | °C |
| | 4 h 90 °C | | 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 °C | IO-10-66 (ASTM D 790) | 4,5 ÷ 6,5 | % |
| Strain at break | 25 °C | IO-10-66 (ASTM D 790) | 8,0 ÷ 12,0 | % |
| Flexural elastic modulus | 25 °C | IO-10-66 (ASTM D 790) | 2700 ÷ 3300 | MN/m² |
| Tensile strength | 25 °C | IO-10-63 (ASTM D 638) | 72 ÷ 82 | MN/m² |
| Nominal strain at break | 25 °C | IO-10-63 (ASTM D 638) | 4,0 ÷ 6,0 | % |
| Compressive strength | 25 °C | 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.