

## Main characteristics of epoxy resins:



**High Chemical Resistance**  
Resistance to chemical aggression



**Safe Handling**  
No CMR labelling, no free BPA



**Formulation suitable for potable water approvals**  
e.g. FDA, NSF



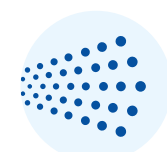
**Excellent Thermal Properties**  
A wide range of operating temperatures



**Anti static, Semi-conductive**  
Semi-conductive coating available, spray or spatula applied



**Diameter**  
Systems suitable for application from 100 to 2000 mm



**Spray Application**  
Thixotropic materials suitable for air and air-free spray applications

## Elan-tech® for Cured in Place Pipe

ELANTAS Europe is part of the ALTANA group, and is a leading manufacturer of insulating and protective materials as well as for specialty chemicals. As a specialist in formulating epoxy, polyurethane and silicone resins we are offering a broad assortment of high-performance products for a variety of composite application processes e.g. laminating wet lay-up, RTM & press molding, vacuum bag infusion, pultrusion and filament winding. In addition, our portfolio includes structural adhesives and sealants and a full range of resins for tools and models. For the repair and renovation of sewage, chemical and potable water pipelines we present a special product range with filled and unfilled epoxy resins, tailored to this specific application area.

## Elan-tech® for Cured in Place Pipe

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## Elan-tech® for Cured in Place Pipe

Broken pipes are repaired from inside by using special resins. This resin hardens and forms another pipe within the damaged pipe. The liners made of PU-PE-PP or PVC, supported by polyester felt or glass reinforcement, are impregnated with epoxy composite resins and extruded by pressure into the existing pipe. The benefits are on hand: This method is much more cost-effective and less disruptive compared to the method of digging and replacing pipes.

The requirements for materials to operate within higher temperature ranges or for softer materials with improved chemical and UV resistance are steadily increasing. Based on our deep chemical and technological understanding, we developed a range of epoxy composite resins which fully meet these requirements in a range of diameter, length, and quantity of material for the liner impregnation.

Our existing portfolio of Elan-tech® epoxy resins includes 2 component unfilled addition cure systems, 2 component filled addition cure epoxy as well as 2 component silicate system. We extended our portfolio by a 1 component UV curing resin, specially designed for our customers. A tailored formulation, following precisely the demands of the customer, is the major principle in the development of this product.

Our product range offers materials to cover a wide spectrum of application areas such as sewage, potable water, refinery and gas pipelines.



EUV 02, 1 component UV curing resin



Filament Winding on fiber-concrete pipes for an outstanding chemical and mechanical resistance



Epoxy spray coating resin

### Unfilled Epoxy Resin

Unfilled epoxy resins are 2 component systems containing no mineral powder inside. Generally used for fiberglass impregnation, when in need of a high wetting capability. All systems suitable for potable water approvals are matching specific positive lists of ingredients according to current standards.

Pipe diameters	System characteristics	Resin Code	Hardener Code	Colour of the mixture	Mix ratio in weight	POI-life [25°C]	Curing time and temperature		
							Air	Air + Steam	Hot Water
Patch Repair, Drainpipes Rehab, Pipes Derivation	Unfilled, light tix, high reactivity, room temperature curing	EC397TIX Neutral	W273NF Violet	Violet	100:30	11–15 mins	3 hrs @ 25°C	30 mins @ 80°C	1 hr @ 50°C
Downpipes, small pipes and connections up to 300 mm diameter	Unfilled, light tix, high reactivity, room temperature curing	EC397TIX Neutral	W276.1 Blue	Blue	100:30	30–40 mins	8 hrs @ 25°C	45 mins @ 80°C	1 h @ 50°C
Up to 400 mm diameter pipes	Unfilled, light tix, medium-high reactivity with moderate temperature	EC397TIX Neutral	W285 Blue	Blue	100:34	40–50 mins	–	1hr @ 80°C	2 hrs @ 60°C
Up to 400 mm diameter pipes	Unfilled, light tix, medium reactivity	EC397TIX Neutral	W398 Red	Red	100:45	60–80 mins	–	3 hrs @ 50°C 1,5 hrs @ 70°C	
Up to 600 mm diameter pipes	Unfilled, low viscosity, medium reactivity	EC 152 Neutral	W152XLR Neutral	Neutral	100:28	115–135 mins	–	2 hrs @ 90°C	3 hrs @ 70°C
Up to 600 mm diameter pipes	Unfilled, slightly tixotropic, slow reactivity. Suitable for high-pressure potable water pipes	EC 398TIX Neutral	W 222 Neutral	Neutral	100:45	115–135 mins	–	10 hrs @ 50°C 5 hrs @ 80°C	
Up to 1000 mm diameter pipes	Unfilled, light tix, slow reactivity	EC 397TIX Neutral	W 222 Neutral	Neutral	100:45	150–180 mins	–	10 hrs @ 50°C 5 hrs @ 80°C	
Up to 1200 mm diameter pipes	Unfilled, very slow reactivity, potable water also under pressure pipe	EC 399 Neutral	W 399 Neutral	Neutral	100:45	400–450 mins @ 10°C	–	5 hrs @ 90°C	
Up to 1200 mm diameter and over	Unfilled, light tix, latent system for ice refrigerated transportation	EC 397 TIX Neutra	W 396 Neutral	Neutral	100:4-6	60 hrs (4%) 30 hrs (6%)	–	–	8 hrs @ 70°C 4 hrs @ 90°C

### Filled Epoxy Resin

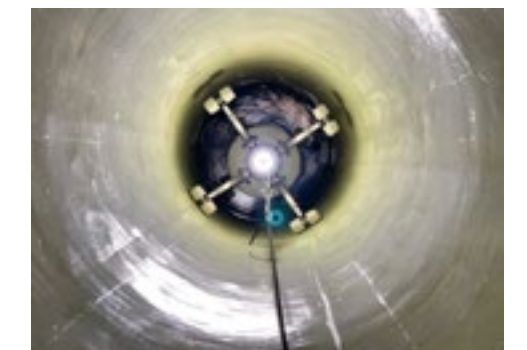
Filled epoxy resins are 2 component systems containing non abrasive mineral fillers. Fillers provide higher modulus and lower shrinkage. Before using the filled epoxy resins with automating dispensing machine, please contact our technical staff .

Pipe diameters	System characteristics	Resin Code	Hardener Code	Colour of the mixture	Mix ratio in weight	POI-life [25°C]	Curing time and temperature		
							Air	Air + Steam	Hot Water
Up to 400 mm diameter pipes	Filled, tix, medium reactivity, thermal resistance	MC 283 Yellow	W 132 Neutral	Yellow	100:23	50–60 mins			4 hrs @ 90°C or 6hrs @ 80°C
Downpipes, small pipes and connections up to diameter 400 mm	Filled, tix, high reactivity in moderate temperature, curing	MC 283 Yellow	W 285 Blue	Green	100:22	40–50 mins			1hr @ 60°C
Up to 600mm diameter pipes	Filled, tix, medium reactivity	MC 282N Yellow	W283MR 70 Blue	Green	100:22	80–100 mins			6 hrs @ 50°C 2 hrs @ 80°C
Up to 800 mm diameter pipes	Filled, tix, slow reactivity	MC 282N Yellow	W 282 W 282MR Red	Orange	100:22	3–4 hrs			10 hrs @ 5 0°C 5 hrs @ 80°C
Up to 1200mm diameter pipes	Filled, tix, extra slow reactivity	MC 283 Yellow	W 399 Neutral	Yellow	100:22	480 mins			5 hrs @ 80°C

### UV cure Epoxy Resins

Unfilled UV cure 1 component system, representing the ultimate solution and the future of pipe relining. UV lamp is used to cure the resin containing photo-initiators, activating at light exposure. The pipe relining UV cure material is an odorless, easy to use, low shrinkage resin. Curing is energy saving if compared to traditional steam processing.

Pipe diameters	System characteristics	Resin Code	Colour of the mixture
Up to 250 mm diameter pipes	Unfilled – One component UV cure Epoxy	EUV01	Transparent
Up to 250 mm diameter pipes	Unfilled – One component UV cure Epoxy	EUV02	Transparent



EUV02 1 component Epoxy lamp, optimally cured with proper intensity and wavelength