



**VHDRS®**  
Very  
High  
Durability  
Repair & Prevention  
Systems




Certified Quality System since **FEBRUARY 1993**

## From Project to Jobsite

### Structural adhesives and sealants





## Tecnoepo IN 03

EPOXY RESIN WITH VERY LOW VISCOSITY FOR THE STRUCTURAL INJECTIONS IN CONCRETE MICRO – CRACKS WITH STRESS TRANSMISSION

 approved – Certificato n. 1305 - CPD - 0808

**EN 1504-5 prospetto ZA.1a**

*“Products and systems for the protection and repair of concrete structures. Definitions, requirements, quality control and evaluation of conformity. Part 5: Concrete injection”*

<i>description</i>		Two-components epoxy-amino-amino based product, solvent free, not charged, formulated as performing structural adhesive and sealant, which cures at room temperatures.
<i>characteristics</i>		Low viscosity Medium reactivity. High adhesion.
<i>use</i>		For the rigid sealing of cracks and joints in structural concrete or steel / iron elements. For the sealing of joints in floors and masonry roofs. Suitable for: structural elements – pillars, beams - prefabricated elements, silos, bridges, dams, etc.
<i>application</i>		The substrate must be dry (humidity < 4%) <i>Tools:</i> equipment for pressure and suction. <i>Temperature of application:</i> 10 ÷ 35 °C and relative humidity max 60 %. <i>Wash tools with :</i> MEK or acetone or diluents for epoxy

### METHOD OF USE

#### PREPARATION OF THE SUBSTRATE

Prior to proceeding with the application of the adhesive, it is necessary to verify the condition of the cementitious substrate: verifying if clean and absent of oil traces, greases, delaminating particles, free from cracks and discontinuities. Continue with the preparation of the substrate choosing the best suited procedure accordingly:

- elimination with proper equipment of the superficial dust when the substrate seems in good condition; recommended are vacuum aspiration and/or cleaning with water pressure;
- sandblasting or grinding in case of un-cohesive parts.

Avoid the application on substrates contaminated with oil and/or greases.

#### APPLICATION

Make sure the room is well ventilated and follow the recommendations stated in the Material Safety Data Sheet on the use of PPE (Personal Protective Equipment).

Proceed with the application of **Tecnoepo IN 03** as follows:

Pour component B into component A and mix for 2-3 minutes or until complete homogenization of the mixture with a suitable drill mounted mixer at low speed.



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### **INJECTION METHOD**

- ❑ Superficial “V” opening cracks and discontinuities.
- ❑ Vacuuming and de – dusting of the desegregated substrate.
- ❑ Injection nipples fixing every 30 ÷ 70 cm, depending on the crack width.
- ❑ Superficial discontinuities plastering with the epoxy filler Tecnoepo R.
- ❑ Test for checking the sealing.
- ❑ Injection of the fluid resin from the bottom upwards for the treatment of discontinuities in vertical walls, with closure of the lower nipples when the resin comes out of the nipple above and resumption of the injection from this last one, climbing up with the same procedure.
- ❑ Leave a puddle of resin in such a way that it can join the volume of resin that gradually flows inside of the crack by gravity.

### **POURING METHOD**

- ❑ Vacuuming and de – dusting of the desegregated substrate.
- ❑ Pouring of the fluid resin allowing air to escape from the crack.

### **APPLICATIVE CONDITIONS**

Substrate temperature	:+ 10°C / + 35 °C
Substrate humidity	≤ 3%
Ambient temperature	:+10 °C / + 35 °C
Relative humidity	:max 60%
Dew point	:the substrate and the product shall be at a temperature minimum 3°C higher than the dew point to avoid the risk of condensation.

### **PACKAGING**

☒ *packaging - kg*

<i>component</i>	<i>a</i>	<i>b</i>	<i>a+b</i>
pails	2.14	0,86	3
on request	10,7	4,3	15

### **STORAGE**

In the original unopened packaging, between + 5°C e + 35°C: 12 months from the production date.



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### TECHNICAL CHARACTERISTICS

APPLICATIVE CHARACTERISTICS at 20 ± 2°C	TEST METHOD	UNITE OF MEASUREMENT	TYPICAL VALUES	
Mixing ratio in weight	-	A : B	2,14 : 0,86 10,7 : 4,3	
Total solid content in weight	-	%	~ 100	
Specific weight	EN ISO 2811-1	kg/l	~ 1,07	
Brookfield viscosity LV	EN ISO 3219	mPa.s	400 ± 100	
Pot life	EN ISO 9514	hours	4 ÷ 5	
Workability time of the mixture	EN ISO 9514	hours	~ 2	
Complete hardening	-			
PERFORMANCE CHARACTERISTICS	TEST METHOD	UNITE OF MEASUREMENT	TYPICAL VALUES	LIMIT VALUES according to EN 1504-5
Glass transition temperature	EN 12614	°C	46,4	> 40
Volumetric shrinkage	EN 12617-2	%	2,9	≤ 3
Adhesion by tensile bond strength	EN 12618-2	-	Failure in substrate	Failure in substrate
Adhesion by slant shear strength on dry substrate	EN 12618-3	-	Monolithic failure	Monolithic failure
Injectability	EN 1771	min	~ 5	< 8 x 0,2 ÷ 0,3 mm
Splitting test	EN 12618-2	N/mm <sup>2</sup>	9	> 7
% filling of cracks	EN 12618-2	%	100	> 90
Determination of tensile strength development for polymers	EN 1543	h	at 10°C ~ 71 at 21°C ~ 33 at 35°C ~ 26	< 72
Durability – Adhesion by tensile strength after thermal and wet-drying cycles	EN 12618-2	-	Failure in substrate	Failure in substrate

### OTHER TECHNICAL CHARACTERISTICS

TEST	UNITE OF MEASUREMENT	TYPICAL VALUES
Shrinkage	%	~ 2,25 x 10 <sup>-2</sup>
Coefficient of the linear thermal dilatation	°C <sup>-1</sup>	8,5 ± 0,2 x 10 <sup>-5</sup>
Unit load at compressive rupture	N/mm <sup>2</sup>	≥ 75
Unit load at flexural rupture	N/mm <sup>2</sup>	≥ 70
Flexural elasticity modulus	N/mm <sup>2</sup>	≥ 2300
Unit load at tensile strength rupture	N/mm <sup>2</sup>	≥ 40
Elongation to tensile strength rupture	%	≥ 8

The above information is based on our best experiences and lab results and on results of the application of the product in various fields. Tecnochem Italiana is not responsible for negative performances due to not proper use of the product or for defects due to elements not connected with the quality of the product included wrong storage.

Technical characteristic in this technical data sheet are up-to-dated periodically. Revision date of this technical data sheet is indicated below. Changes of this data sheet can be found in our web-site [www.tecnochem.it](http://www.tecnochem.it) where you can find the same technical data sheet updated in real time.

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