



Very  
High  
Durability  
Repair &  
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System



Certified Quality System since **FEBRUARY 1993**

**From Project to Jobsite**

## Structural adhesives

### Tecnoepo 400

#### ADHESIVE FOR STRUCTURAL BONDING



approved – Certificate n. 1305 - CPD - 0808  
EN 1504-4 table ZA.1a and ZA.1b

**Product for structural bonding of reinforced concrete  
with adhering mortar, with adhering concrete, with adhering plates.**

Description

Epoxy-poly-ammino based two-components product, charged with fillers and pigments, formulated as pourable structural adhesive, hardening at room temperature.

Characteristics

Medium reactivity.  
Optimal wetting of the substrate and application properties on cement based substrates, stone, tiles, and ferrous materials.  
Excellent adhesion on substrates with reduced humidity (humidity maximum 4 %).  
Very high mechanical resistance.  
Medium-high glass transition temperature.  
Good stability in time of the physico-chemical properties.

Use

As adhesive for :  
- bonding of new concrete on existing (casting on the wet resin).  
- assembling of concrete elements.  
- assembling prefab elements (segments).  
- grouting of bolts and studs.  
- reinforcement with steel bars or plates.

Application

**Tools:** by squeegee, blade or notched trowel  
**Temperature of application:** 10 ÷ 35 °C and relative humidity of max 80 %.  
**Clean tools with:** 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, fat, 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.

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### 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 400** 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.

**FOR THE CONCRETE BONDING:** apply with a rubber squeegee, paying attention to distribute the product uniformly over the total surface, at a minimum consumption of 1.5 kg/m<sup>2</sup> in order to obtain a layer of adhesive of about 1 mm thickness.

If the media is very irregular, the consumption can increase, but the product shall not be applied thicker than 3 mm. In that case priory shot blast the substrate as smooth as possible.

**WARNING:** make the castings not later than 3 hours since the application of the adhesive. At temperatures above 20°C, this time gradually decreases with increasing temperature, especially when working in direct sunlight.

**FOR STRUCTURAL BONDING:** apply the product by trowel or brush (for small areas) on the substrate as well on the reinforcement plate, at a ratio of 1 to 1.5 kg/m<sup>2</sup>. Shore up the plates until the hardening of the adhesive layer (at least 24 hours at 20°C). Consider that the product reaches 80% of its mechanical performance over 3 days.

**FOR GROUTING:** pour the product directly into the hole for at least 1/3 of the depth, than insert the element to be anchored, previously coated with or doped in the adhesive.

It is not possible to make grouting with slopes towards the operator.

**IMPORTANT:** If the ambient temperature and the support is below 15 °C is necessary to heat up separately the two components to a maximum temperature of 30 °C (e.g. in a water bath) in order to maintain a low viscosity and better applicability.

**Do not apply at temperatures below 10 °C.**

### APPLICATIVE CONDITIONS

Substrate temperature	: + 10°C / + 35 °C
Substrate humidity	: ≤ 4 %
Ambient temperature	: +10 °C / + 35 °C
Relative humidity	: max 80%
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

☒ supply - kg

Component	a	b	a+b
Pail	8,2	1,8	10
	2,46	0,54	3

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### STORAGE

Store the original and unopened packaging at a temperature between + 5°C and + 35°C. Product can be kept 12 months from the production date.

### TECHNICAL CHARACTERISTICS

APPLICATIVE CHARACTERISTICS at 20 ± 2°C	Test method	Unit of measurement	Typical values	
Mixing ratio in weight	-	A : B	8,2 : 1,8	
Solid content in weight	-	%	~ 100	
Consumption	-	Kg/m <sup>2</sup> /mm	~ 1,5	
Density	EN ISO 2811-1	kg/l	~ 1,47	
Viscosity Brookfield LV	EN ISO 3219	cP	13000 ± 3000	
Pot life	EN ISO 9514	minutes	180 ± 30	
Workability time of the mixture	EN ISO 9514	minutes	~ 90	
Open time	EN 12189	minutes	180	
PERFORMANCE CHARACTERISTICS	Test method	Unit of measurement	Typical values	Limit values according to EN 1504-4
Thermal expansion coefficient	EN 1770	per °C	31,66 x 10 <sup>-6</sup>	≤ 100 x 10 <sup>-6</sup>
Total shrinkage	EN 12617-1	%	0,02	≤ 0,1
TG – glass transition temperature	EN 12614	°C	46,6	≥ 40
Tear resistance	EN 12615	N/mm <sup>2</sup>	> 7	≥ 6
Shear strength, inclined, in compression	EN 12188	N/mm <sup>2</sup> at 50°	> 70	≥ 50
		N/mm <sup>2</sup> at 60°	> 70	≥ 60
		N/mm <sup>2</sup> at 70°	> 100	≥ 70
Adhesion by direct pull-off		N/mm <sup>2</sup>	> 25	≥ 14
Adhesion concrete on concrete	EN 12636	-	Concrete failure	Concrete failure
Flexural strength	EN 12190	N/mm <sup>2</sup>	> 40	-
Compression strength	EN 12190	N/mm <sup>2</sup>	> 80	≥ 30
Elasticity modulus in compression	EN 13412	N/mm <sup>2</sup>	5731	≥ 2000
Durability	EN 13733	-	Passes	Passes/Not passes

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

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