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EPO 121

(previously CTS 121)

TWO-PART THIXOTROPIC EPOXY ADHESIVE

AREAS OF USE

- Structural adhesion of concrete elements.
- Reinforcement of structures with concrete-steel plating technique, stuck on like “beton plaqu e”.
- Smoothing and filling of cracks.
- Bonding of injection nipples, marble, stone, dowels.
- General assembly, repairs and bonding.

PROPERTIES

EPO 121 is a two-part epoxy adhesive with rapid reactivity

- It has excellent mechanical properties.
- Fast-setting for ambient temperatures from 5 C to 30 C.
- Excellent adherence on dry and humid concrete.
- Pre-measured packs, ready to use on work sites.
- Easy application.

PREPARATION OF THE SUBSTRATE

- The substrate must be clean, sound, without friable areas.
- For a good adhesion, the surface should be rough if possible.
- The most suitable treatment is sandblasting, especially on iron. If this is not possible, it must be at least bush-hammered, milled or brushed.
- The presence of water has a negative effect on adhesion. Wet foundations must be dried as much as possible with air, or preferably with a gas flame.
- For works of structural reinforcement, it is recommended to control the adhesive capacity with the help of a tear device.

PREPARATION

The epoxy system **EPO 121** is supplied in two parts, composed of the epoxy resin **EPO 121** and the hardener **K 122**. The two components should be combined in the following ratio:

Epoxy resin EPO 121	100 g
Hardener K 122	20 g

- Pour the hardener **K 122** into the **EPO 121** resin and mix for at least 5 minutes by hand or with a mechanical stirrer on low speed (electric drill). Be careful to also remove any material along the sides and in corners.
- Distribute the material with an American or toothed spatula, with a trowel or other tool in a thickness of 2-4 mm, depending on the case.
- Respect the time of use.
- Bring the two elements to be joined together as quickly as possible.
- Apply moderate pressure to the elements, until a small amount of adhesive comes out from the sides.
- Keep the elements under pressure until the adhesive has set.

CLEANING OF TOOLS AND PERSONAL HYGENE PRECAUTIONS

- To clean tools, use solvents such as acetone, alcohol, toluene, trichloroethylene, or others.
- Epoxy resins and hardeners may cause irritations. Therefore, all contact with skin, and the eyes in particular, should be avoided.
- The use of gloves and protective work clothes are advised. For those whom must work with epoxy resins for long periods of time, the application of a protective cream is recommended.



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- In the case of contamination with epoxy resin or mortar, wash immediately with water and soap, or preferably with the suitable paste. Do not wash with solvents.
- If contact with eyes occurs, they must be immediately rinsed with running water for 10-15 minutes, then consult a doctor.
- Do not re-use empty resin or hardener containers to store foodstuffs.

WORKING TIME

As soon as they are mixed, the reaction between the two components begins. The working time is therefore limited and dependent on temperature.

temperature	time
15 °C	90 min.
25 °C	40 min.
35 °C	15 min.

The minimum temperature for hardening is 10 °C.

TECHNICAL PROPERTIES

EPO 121 RESIN

• Composition	mixture based on modified epoxy resins, solvent free
• Appearance	dense white paste
• Viscosity	ca. 30.000 cps
• Solids content	100%
• Specific weight	ca. 1.70

K 122 HARDENER

• Composition	mixture based on aliphatic amine adduct, solvent free
• Appearance	dense white paste
• Viscosity	ca. 20.000 cps
• Solids content	100%
• Specific weight	ca. 1.30

Information contained in this data sheet is based on our state of knowledge and on laboratory testing at the above-specified date. The User should determine, by preliminary tests, the suitability of the product for his intended purpose, and should observe the laws and regulations regarding health and safety.

C.T.S. S.r.l. guarantees the constant quality of the product but is not accountable for any damages caused by the incorrect use of a material. The product is intended for **professional use only**. In addition, the components and packaging can change at any time, without any obligation of prior notice.

EPO 121 Resin + K 122 Hardener
mixture before hardening

• Ratio of use	CTS-121=100 CTS-122=20 (parts in weight)
• Pot-life at +20 °C	30 min. ca.
• Appearance	dense white paste
• Viscosity	ca. 26.000 cps
• Solids content	100%
• Specific gravity	ca. 1.50

EPO 121 Resin + K 122 Hardener
(after 7 days at + 20 °C)

• Appearance	hard mass, compact, slightly tacky on surface
• Solids content	100%
• Resistance to compression	> 100 N/mm ²
• Flexing resistance	> 40 N/mm ²
• Coefficient of elasticity	ca. 7000 N/mm ²
• Elongation at break	< 2%
• Glass transition temperature	60 °C (calorimetric method)
• Adhesion to dry concrete	> 4 N/mm ²
• Adhesion to humid concrete	> 3 N/mm ²
• Adhesion to steel	> 20 N/mm ²

PACK SIZES

EPO 121 1 – 5 kg
K 122 200 g – 1 kg

MEDIUM CONSUMPTION FOR 2mm IN THICKNESS

About 3 kg/m²

STORAGE

The product will remain unaltered for at least one year in its original containers, sealed air-tight, and kept at a temperature of 10-30 °C.



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SINCERT



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Listed in the following table are some **references** gathered on “**E P O**” line:

Name of the monument / work of art / site	Town - Country
Tavola lignea “Discesa di Cristo al limbo” del Bronzino	Firenze - Italy
I “Dodici Mesi “ in arenaria a Villa Sciarra	Roma - Italy
Campanile della Badia Fiorentina	Firenze - Italy
Castello Cinquecentesco	L'Aquila - Italy
Palazzo Budini Gattai, Palazzo Pitti e Giardini di Boboli	Firenze - Italy
Palazzo Poli	Roma - Italy
Fontana del Nettuno	Napoli - Italy
Fontana di Montegrimano	Pesaro Urbino - Italy
Ermita de San José del Censal	Castellón - Spain
Iglesia de San Roque	Zaragoza - Spain
La Alhambra de Granada	Granada - Spain
Palazzo Barnocchi a Verchiano	Foligno - Italy
Ayuntamiento de Canet Lo Roig	Valencia - Spain
Fattoria di Torregalli	Scandicci - Italy
Fundacion Santa Maria de Albarracin	Teruel - Spain
Iglesia de San Pablo	Palencia - Spain
Museo de Arqueologia	Valencia - Spain
Museo de Sorolla	Toledo - Spain
Diputación Foral de Alava	Alava - Spain
Iglesia de San Lorenzo a Toro	Zamora - Spain
Chiesa S. Antonio Abate a Montemaggio	S. Leo - Italy
Resti fossili di Hippopotamus antiquus	Ortona - Italy
Igreja de Sao Pedro	Cantanhede - Portugal
Conjunto Arqueologico Madinat Al-Zahra	Cordoba - Spain
Murallas y Catedral de Tarragona	Tarragona - Spain
Igraja de Santa Cruz	Coimbra - Portugal
Chiesa dei Gesuiti	Venezia - Italy
Palazzo Chigi a S.Quirico d'Orcia	Siena - Italy
Chiesa S.Domenico	Prato - Italy
Trasporto soffitto di Lucio Fontana	Procchio - Italy
Ricostruzioni elementi del David del Verrocchio	Firenze - Italy
Palazzo San Demetrio e Palazzo dell'Università	Catania - Italy
Ossa di Hippopotamus antiquus di Ortona	Ortona - Italy
Cattedrale	Palencia - Spain
Porta principale della Cattedrale	Malaga - Spain
Arco romano dell'antico villaggio di Medinaceli	Soria - Spain
Riadesione della Mano del “Biancone”	Firenze - Italy
Altare Maggiore della Chiesa di San Lorenzo	Segovia - Spain
Palazzo delle Prefettura	Ortigia - Italy
Ex Chiesa di S. Stefano	Farra di Soligo - Italy
Mezquita-Cattedrale	Cordoba - Spain
Ricostruzione di pezzi del David del Verrocchio	Firenze - Italy
Bacco del Giardino di Boboli	Firenze - Italy
Sculture in terracotta di Pietro Giuseppe Tito	Venezia - Italy
Villa Bellini	Catania - Italy
Duomo di Siracusa	Siracusa - Italy
Ex-Convento di S.Domenico	Augusta - Italy
Chiesa di S.Francesco	Milazzo - Italy
Palazzo Ducale	Venezia - Italy
Chiesa di S.Michele Arcangelo	Longara - Italy



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Name of the monument / work of art / site	Town - Country
Cupola del Duomo	Siena - Italy
Duomo	Modena - Italy
Obelisco di Piazza dell'Unità Italiana*	Firenze - Italy
Basilica Palladiana e Palazzo Cordellina	Vicenza - Italy
Rinforzo statue in terracotta policroma del <i>Compianto sul Cristo morto</i> , Michele da Firenze (prima metà '400)	Modena - Italy
Campanile di Santo Spirito	Firenze - Italy
Villa Myllius	Sesto San Giovanni - Italy
Cappella della Sindone	Torino - Italy
Torre campanaria della Chiesa di S.Maria Assunta	Avio - Trento - Italy
Fontana del Tritone in Piazza Dante	Bergamo - Italy
Ospedale di Santa Maria Nuova	Firenze - Italy
Duomo di Cortona	Cortona - Italy
Monumento a Roca I Pi	Badalona - Barcelona - Spain
Chiesa di San Gabriel	Loja - Granada - Spain
Università di Coimbra – Torre de Cabra	Coimbra - Portugal
Facciata principale dell'antico Comune di Baeza	Baeza - Jaen - Spain
Retablo della Chiesa del Monastero di Poblet	Poblet - Tarragona - Spain
Cappella Guariniana	Torino - Italy
Capitelli del portale romanico della Chiesa di Sant'Apollinare	Trento - Italy
Mura di Coria	Coria-Caceres - Spain
Excavacion arqueologica "La Encarnacion"	Sevilla - Spain
Jardines Romanticos De Monforte	Valencia - Spain
Museo de Santa Fe	Toledo - Spain
Museo Arqueologico Nacional	Madrid - Spain
Excavacion arqueologica "Complutum"	Alcala de Henares - Spain
Valle dei Templi	Agrigento - Italy
Chiesa Batia S.Agata	Catania - Italy
Teatro Politeama	Palermo - Italy
Basilica di San Leone	Assoro - Enna - Italy
Chiesa di Santa Croce	Arezzo - Italy
"Ago, filo e nodo" di Claes Oldenburg	Milano - Italy
Fachada principal de la Iglesia de la Asuncion	Cordoba - Spain
Iglesia de la Trinidad	Ubeda - Jaen - Spain

* The survey conducted by the CNR-ICVBC on the performance of **Epo 150** (Camaiti M. et al.; "*Obelisco di Piazza dell'Unità Italiana (Firenze): progettazione di un intervento di restauro*"), was published in the Proceedings of the Congress IGIIIC "Lo stato dell'arte 6", Spoleto, 2-4 Ottobre 2008 published by Il Prato, Padua