



**Advanced
Pavement
Systems**

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Certified Quality System since **FEBRUARY 1993**

RAPI-tec® pva/pav - FIB-energy® ST-HS

**ULTRA FAST HARDENING REPAIR MORTAR
WITH EXCELLENT WEAR AND IMPACT RESISTANCE AND VOLUMETRIC
STABILITY**

**CE approved – Certificate n. 1305 - CPD - 0808
EN 1504-3 Class R4**

type MC4: "mortar made of a special pozzolanic binder, pre-mixed, fast-curing even at low temperatures, fiber-reinforced with rigid metal (steel) fibres characterized from length 30 mm, diameter 0.38 mm, tensile strength > 2300

MPa with a very high ductility " responsive to the HIGHWAY SPECIFICATIONS FOR ITALY "mortars castable type MC4" (with the addition of aggregates can become pre-qualified as **class B4**)

B4 type: "grout based on a special pozzolanic binder, fast curing, even at low temperatures, fiber-reinforced with rigid metal (steel) fibres characterized from length 30 mm, diameter 0.38 mm, tensile strength > 2300 MPa with a very high ductility, obtained by adding to the mortar in the previous point MC4 selected aggregates " responsive to the HIGHWAY SPECIFICATIONS FOR ITALY "structural micro-concrete type B4"



Description RAPI-tec® pva/pav - FIB-energy® ST-HS is an ultra fast hardening repair mortar for structural special and particularly stressed applications and for repairs of pavements. With the special fibres used (tensile strength $\geq 2.800 \text{ N/mm}^2$) high fracture energy and very high mechanical strengths and resilience are obtained (shock resistance).

Advantages RAPI-tec® pva/pav - FIB-energy® ST-HS combines a sufficient workability time (about 20 minutes) with a very rapid hardening response (30 MPa in 3 hours), shrinkage zero, exceptional deformation with no cracks, very high mechanical resistance, a flexural strength $\geq 20 \text{ MPa}$, optimal durability, resistance to sulphate attacks.

Application Applications which need to be trafficked very fast, for the fast repair of pavements in general like in airports, roads infrastructure, for the installation and fixation of street manholes and for particularly dynamically and statically stressed structures. Production of prefabricated elements, allowing fast demoulding and transportation.

- Method of use**
- The substrate must be prepared by mechanical scarified or hydro-scarified for a depth not inferior to 1 cm. In case of local repair, cut with flexible grinding wheel the borders at right angle.
 - No traces of fat, grease, oils, or detergents
 - The tensile strength of the support must be $\geq 1,5 \text{ N/mm}^2$; in case of lower strengths use the primer **TECNOEPO 400** or, in extreme cases, prepare proper pre-sealed steel bars and mesh.
 - The substrate must be clean, rough, and without friable parts, dust, and should be saturated with water thoroughly prior to starting the application. Saturate the substrate with water before application and eliminate any excess of water on the surface. In case of use of the primer **TECNOEPO 400** the substrate must be dry ($\text{H}_2\text{O} \leq 4\%$)
 - Temperature of application between +5 and +35°C
 - Use a mixer with vertical axes or horizontal mixer with double heliotrope mixing arms
 - Mix the powder with potable water till a homogeneous mix is obtained. Mixing time: about 2 minutes.
 - Add FIB-energy® fibres slowly. The mixing continues till the fibres are completely uniformly dispersed in the mortar. Mixing time: about 2 minutes.
 - In case of high volumes (like for repair of man-holes) use a vibrating needle or tap intensively for compaction. To level larger areas, vibrating rules can be used.
 - The surface, after application, needs protected by a polyethylene sheet or curing compound (UR19, in case no other protective of aesthetical treatment is foreseen)
 - Cut the joints after 24 hours

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Packaging of 26,125 Kg.

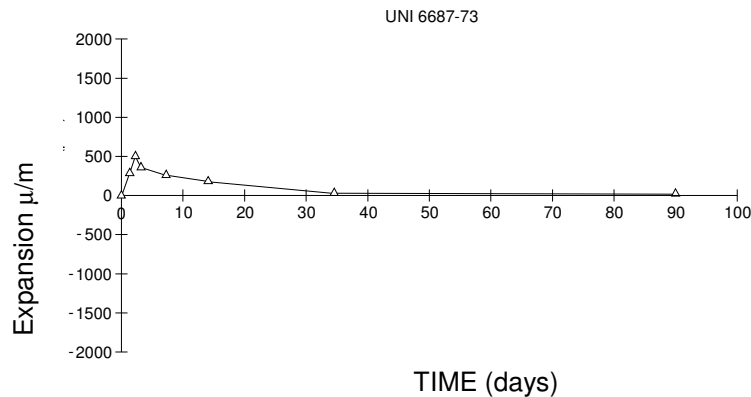
to be mixed with 2,7÷3 lt of water

| | | |
|-------------------------|--|-------------------|
| comp. A | POWDER in bag | 25 Kg |
| comp. B | fiber FIB-energy® ST-HS in small bag | 1,125 Kg. |
| Tot. packaging = | | 26,125 Kg. |

Technical characteristics (typical values)

- Max size quartz 3 mm
- Initial setting time at 20°C 25 minutes
- Final setting time at 20°C 30 minutes
- Consumption 2,2 Kg/mm/m²
- Compressive strength 3 hours 30 MPa
- Compressive strength 28 days 80 MPa
- Flexural strength 28 days 20 MPa
- Elasticity modulus 28 days 39,0 GPa
- Fracture Energy 28 days ~ 1.500 N/m
- Adhesion to support (concrete) ≥ 2 N/mm²
- Resistance to freezing and thawing in presence of chloride salts (Swiss Highways SIA 162 Standard : after 28 cycles ≤ 600 gr/m² → high resistance to freezing and thawing in presence of salts) ≤ 120 gr/m²
- Linear expansion at T=20°C R.H.= 50% + 450 µ/m 24 hours
(UNI EN 12617-4 / UNI 6687-73) + 20 µ/m 90 days

SHRINKAGE ZERO



Remark Information according to 2003/53/CE :
Storage: product can be kept for 6 months if stored in dry and protected conditions in the original packaging, at a temperature between +5°C and +35°C. Do not use the content of opened bags if there are lumps. Avoid freezing of the liquid component.

Remarks Read carefully the instructions on the packaging and eventually ask us the safety data sheet of the product.

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