



# ELASTORAPID VK 300

**HYBRID POLYUREA FORMULATED WITH AROMATIC ISOCYANATES AND DIFFERENT MOLECULAR WEIGHT DIAMINES**

IN COMPLIANCE WITH THE REQUIREMENTS OF THE 1504-2 EUROPEAN STANDARD:

Product for humidity control 2.2, physical resistance 5.1, chemical resistance 6.1, resistivity increase 8.2

## Features

- Fluid product to make 3 mm thick coatings.
- Very high hardening speed and rapid reaching of the final mechanical characteristics.
- High resistance to hydrolysis, punching, abrasion.
- Application temperature from 0°C (without condensation).
- Operating temperature from -30°C to +85°C.

## Field of use

- Waterproofing product for slabs of road and rail bridges, viaducts, underground structures, tunnels.
- Protection and waterproofing of hydraulic constructions, channels, containment tanks.
- Waterproofing for roofs of civil and industrial buildings.
- Protection and encapsulation of fibre cement.

## Application

### Substrate preparation

Substrate preparation is fundamental, thus the surface to be treated must be free of any pollutant, dry, coherent and must have a bond strength of at least 1,5 MPa. In any case it is necessary, depending on the type of surface, to make a preparation of the flooring by milling, shot peening, smoothing or sanding.

Free and stagnant water coming from the foundation, from previous washing processes or from meteorological events must be removed or dried.

On porous substrates the reactivity of the material is such that the resulting heat development may lead to the formation of through holes in the coating because of the heating of the air trapped in the surface. Therefore after application of the primer it is advisable to make sure that the surface is actually closed (saturated).

### Primer

Depending on the surface to be treated the preparations are different:

- *Concrete surfaces:* carry out the shot-peening, then smooth with **RESINA 700** or **530** loaded with quartz 0,1-0,3. In case of very porous surfaces make a double smoothing.  
On the wet resin broadcast quartz sand to improve the adhesion. On surfaces affected by humidity or counterthrust apply **EPOXCEMENT TIXO** or **EPOXCEMENT HB RAPIDO** until a dry surface is obtained, then apply another layer and broadcast quartz.

On highly wrinkled areas it is possible to smooth the surface using **EPOXCEMENT TIXO** or **EPOXCEMENT HB RAPIDO** adding quartz 0,1-0,3 or 0,1-0,5 to control the thickness and the texture of the product.

- **Metal surfaces:** sandblast in compliance with SSPC-SP10 to the Sa2<sup>1/2</sup> grade and apply immediately **ELASTORAPID VK 300**.

### Product preparation

Two-component product, applicable with high-pressure bimixer airless spray guns, better if implemented with a programmable logic controller (PLC) for quantity and mass flow rate, equipped with a suitable mixing gun for polyureic systems (reaction within the gun).

The best results are obtained by spraying the product at a temperature of 70-80°C and a pressure of 180-200 bar.

The equipment must have line heaters, tanks and heated hoses.

The components of **ELASTORAPID VK 300** must not be polluted with any chemical agent (solvents, oils, water, or anything else) because the characteristics of the product would be seriously compromised.

**ELASTORAPID VK 300** exposed to UV rays can show variations in colour and slight chalking, but the mechanical characteristics will not be affected. To avoid these changes, it is necessary to protect it with an aliphatic polyurethane coating like **ITALPAINT 10**.

### Warning

If the application will take place on roofs with the presence of insulation or other compressible surfaces, especially in the winter months, it is necessary to wait about 6-8 hours until the product is completely cured before it can be walked on. Failure to comply with what is indicated could create micro-lesions that are not immediately visible, but which in the following months could lead to the development of pass-through lesions.

### Tools cleaning

The cured product can be removed from the tools by immersion in *N*-methylpyrrolidone, dimethylformamide or, less efficiently, **DILUENTE PU1**.

### Technical data

|                                |                             |               |
|--------------------------------|-----------------------------|---------------|
| Colour                         | Neutral or grey, red, green | -             |
| Density                        |                             |               |
| <i>Component A</i>             | 1,13 ± 0,05 kg/l            | EN ISO 2811-1 |
| <i>Component B</i>             | 1,09 ± 0,05 kg/l            |               |
| Viscosity at 20°C              |                             |               |
| <i>Component A</i>             | 2000 ± 400 mPa · s          | EN ISO 2555   |
| <i>Component B</i>             | 1200 ± 250 mPa · s          |               |
| Pot life at 22°C               | 6-7 seconds                 | EN ISO 9514   |
| Mixing ratio                   |                             |               |
| <i>By volume and by weight</i> | 1:1                         | -             |
| Theoretical consumption        | 3,3 kg/m <sup>2</sup>       | -             |
| Theoretical thickness          | about 3 mm                  | -             |

|                                                                       |                                                                                                                                             |                                                   |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Non-volatile-matter content                                           | about 100 %                                                                                                                                 | EN ISO 3251                                       |
| Bond strength by pull-off                                             | > 3,0 MPa                                                                                                                                   | EN 1542                                           |
| Adhesion on metal                                                     | > 7,0 MPa                                                                                                                                   | EN 13144                                          |
| Bond strength by pull-off on fibre cement                             | > 1,4 MPa                                                                                                                                   | EN 1542                                           |
| Resistance to temperature shock                                       | > 2,2 MPa                                                                                                                                   | EN 13687-5                                        |
| Impact resistance                                                     | 20 N · m                                                                                                                                    | EN ISO 6272                                       |
| Abrasion resistance (Taber)                                           | < 40 mg                                                                                                                                     | EN ISO 5470-1<br>Wheel H22<br>1000 g, 1000 cycles |
| Tensile strength                                                      | > 14 MPa                                                                                                                                    | EN 12311-2                                        |
| Tear resistance                                                       | 70 kN/m                                                                                                                                     | EN 12310-2                                        |
| Elongation at break                                                   | > 600 %                                                                                                                                     | EN 12311-2                                        |
| Tensile strength, -20°C                                               | 16.47 MPa                                                                                                                                   | EN 12311-2                                        |
| Tear resistance, -20°C                                                | 109,68 kN/m                                                                                                                                 | EN 12310-2                                        |
| Elongation at break, -20°C                                            | 203 %                                                                                                                                       | EN 12311-2                                        |
| Shore A hardness                                                      | > 70                                                                                                                                        | EN ISO 868                                        |
| Crack bridging<br><i>Method A, static</i><br><i>Method B, dynamic</i> | A5 (23°C)<br>> B4.1 (23°C)                                                                                                                  | UNI EN 1062-7                                     |
| CO <sub>2</sub> permeability                                          | s <sub>D</sub> > 50 m                                                                                                                       | EN 1062-6                                         |
| Water vapour permeability                                             | s <sub>D</sub> < 5 m                                                                                                                        | UNI EN ISO 7783-1                                 |
| Liquid water permeability                                             | w < 0,1 kg/m <sup>2</sup> x h <sup>0.5</sup>                                                                                                | EN 1062-3                                         |
| Resistance to severe chemical attack                                  | Sulphuric acid 20 %      Class II<br>Sodium hydroxide 20 %      Class II<br>Sodium chloride 20 %      Class II<br>Surfactants      Class II | EN 13529                                          |

### Curing

|                                                                      |                                    |
|----------------------------------------------------------------------|------------------------------------|
| At 22°C, 50 % R.H.<br>- Touch dry<br>- Walkable<br>- Complete curing | 8 minutes<br>25 minutes<br>2 hours |
|----------------------------------------------------------------------|------------------------------------|

### Storage

The product in the original sealed packaging, stored in a dry and sheltered place at a temperature comprised between +5°C and +35°C, is preserved for 12 months.

Do not store the product at temperatures lower than 6°C.

**Safety**

In the application of this product it is advisable to use goggles, rubber gloves and all the PPE required by the laws on the use of chemical substances.

For all the additional information consult the material safety data sheet of the product.

|  |                                                                       |                |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------|----------------|
| <b>PERFORMANCES IN COMPLIANCE WITH CERTIFICATION CE EN 1504-2</b>                 |                                                                       |                |
| <b>Product type 1708</b>                                                          |                                                                       | <b>DoP 102</b> |
| Characteristics                                                                   | Product performance                                                   | Test Method    |
| CO <sub>2</sub> permeability                                                      | $s_D > 50 \text{ m}$                                                  | EN 1062-6      |
| Water vapour permeability                                                         | Class I                                                               | EN ISO 7783-2  |
| Liquid water permeability                                                         | $w < 0,1 \text{ kg/m}^2 \times \text{h}^{0,5}$                        | EN ISO 1062-3  |
| Bond strength by pull-off                                                         | $> 2,0 \text{ N/mm}^2$                                                | EN 1542        |
| Crack bridging                                                                    | A5 (23°C)<br>> B4.1 (23°C)                                            | EN 1062-7      |
| Impact resistance                                                                 | Class III                                                             | EN ISO 6272-1  |
| Temperature shock                                                                 | $> 2,0 \text{ N/mm}^2$                                                | EN 13687-5     |
| Abrasion resistance                                                               | $< 3000 \text{ mg}$                                                   | EN ISO 5470-1  |
| Resistance to severe chemical attack                                              | CR10 (Class II), CR11 (Class II),<br>CR12 (Class II), CR14 (Class II) | EN 13529       |
| Hazardous substances                                                              | The hardened product does not release hazardous substances            |                |
| Reaction to fire                                                                  | F                                                                     | EN 13501-1     |

CR10: Sulphuric acid at 20 %  
 CR11: Sodium hydroxide at 20 %  
 CR12: Sodium chloride at 20 %  
 CR14: Surfactants

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