

ELASTORAPID VK 260 es

PURE POLYUREA FORMULATED WITH AROMATIC ISOCYANATES AND PARTICULAR DIAMINES WITH DIFFERENT MOLECULAR WEIGHTS

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

- Highly waterproof.
- Very high hardening speed and rapid reaching of the final mechanical characteristics.
- High resistance to hydrolysis, punching, abrasion, ageing, mechanical stress.
- Can withstand vehicle traffic.
- Support application temperature: from -10°C to +40°C, humidity < 4 % (Tramex meter), no counterthrust.
- Surroundings application temperature: from -10°C to +40°C, R.H. max 85 %, above the dew point by at least 3°C.
- Operating temperature from -40°C to +100°C in air.

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.
- Waterproofing of car parks even of significant dimensions.
- Protection and encapsulation of fibre cement (also asbestos).

Application

Support preparation

Support preparation is fundamental, thus the surface to be treated must be free of any pollutant, dry, coherent and must have a tear resistance 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 sand-blasting, 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 coat 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^{1/2} grade and apply immediately **ELASTORAPID VK 260 es**.

For protection against corrosion apply two 180 g/m² coats of **FLOORIFIX 44** thinned at 10 % with **DILUENTE EP1**. After at least 24 hours at 20°C apply **ELASTORAPID VK 260 es**.

To create anti-slippery surfaces, immediately after having applied the first coat of **ELASTORAPID VK 260 es**, rotate the spray-gun to make it parallel to the surface, with the nozzle aiming high make the arm oscillate to create a "rain" of **ELASTORAPID VK 260 es**.

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 spraying the product at a temperature of 75-80°C for component A and 70-75°C for component B, and a pressure of 170-190 bar.

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

The components of **ELASTORAPID VK 260 es** must not be polluted with any chemical agent (solvents, oils, water, or anything else) because the characteristics of the product would be seriously compromised.

System	Product	Consumption
Dry concrete surface	One or two coats of RESINA 530 loaded with 30 % quartz 0,1-0,3 mm Quartz 0,5-0,8 mm broadcast on the fresh resin One coat of ELASTORAPID VK 260 es	300-500 g/m ² per coat about 2000 g/m ² about 1100 g/m ²
	One or two coats of PRIMER 142 loaded with 30 % quartz 0,1-0,3 mm Quartz 0,5-0,8 mm broadcast on the fresh resin One coat of ELASTORAPID VK 260 es	200-400 g/m ² per coat about 2000 g/m ² about 1100 g/m ²

Lightly damp concrete surface, low temperatures ($\leq +5^{\circ}\text{C}$)	One or two coats of PRIMER CP loaded with 30 % quartz 0,1-0,3 mm Quartz 0,5-0,8 mm broadcast on the fresh resin One coat of ELASTORAPID VK 260 es	250-350 g/m ² per coat about 2000 g/m ² about 1100 g/m ²
Damp concrete surface or subject to counterthrust, low temperatures ($\leq +5^{\circ}\text{C}$ use only EPOXCEMENT HB RAPIDO)	Two coats of EPOXCEMENT TIXO or EPOXCEMENT HB RAPIDO loaded with 30 % quartz 0,1-0,3 mm, thinned with 10 % water Quartz 0,5-0,8 mm broadcast on the fresh resin One coat of ELASTORAPID VK 260 es	400-600 g/m ² per coat about 2000 g/m ² about 1100 g/m ²
Carbon steel	One or two coats of FLOORFIX 44 One coat of ELASTORAPID VK 260 es	150-180 g/m ² about 1100 g/m ²
The consumptions are indicative: consumption depends on many factors, among which the absorbing power and the roughness of the surface.		

Before overlaying ELASTORAPID VK 260 es on RESINA 530 and PRIMER 142 wait		
Support temperature	minimum	maximum
+15°C	30 hours	48 hours
+20°C	18 hours	48 hours
+30°C	14 hours	24 hours
+40°C	12 hours	24 hours

Before overlaying ELASTORAPID VK 260 es on PRIMER CP wait		
Support temperature	minimum	maximum
+5°C	48 hours	72 hours
+10°C	10 hours	24 hours
+20°C	12 hours	24 hours

Before overlaying ELASTORAPID VK 260 es on EPOXCEMENT HB RAPIDO wait		
Support temperature	minimum	maximum
+10°C	8 hours	24 hours
+15°C	6 hours	24 hours
+20°C	4 hours	24 hours

If the overlaying periods have been exceeded or in the case of unexpected meteoric precipitations, it is possible to resume the system applying one coat of **PRIMER 60** thinned properly with **DILUENTE PU1**. The application must be done on the fresh resin, when the solvent has evaporated and the product has just reached the touch-dry condition (about one hour at 20°C, R.H. 60 %). Do not apply on the hardened product.

Tools cleaning

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

Technical data

Colour	Neutral or RAL Colours	-
Density <i>Component A</i> <i>Component B</i>	1,09 ± 0,05 kg/l 1,09 ± 0,05 kg/l	EN ISO 2811-1
Viscosity at 25°C <i>Component A</i> <i>Component B</i>	1000 ± 200 mPa·s 1200 ± 250 mPa·s	EN ISO 2555
Mixing ratio <i>By volume and by weight</i>	1:1	-
Theoretical consumption	3,3 kg/m ²	-
Theoretical thickness	3 mm	-
Non-volatile-matter content	> 99,8 %	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	> 3,3 MPa	EN 13687-5
Impact resistance	20 N·m	EN ISO 6272
Abrasion resistance (Taber)	< 35 mg	EN ISO 5470-1 Wheel H22 1000 g, 1000 cycles
Tensile strength	> 19 MPa	EN 12311-2
Tear resistance	> 12 kN/m	EN 12310-2
Elongation at break	> 480 %	EN 12311-2
Tensile strength, -20°C	> 14,3 MPa	EN 12311-2
Tear resistance, -20°C	> 112 kN/m	EN 12310-2
Elongation at break, -20°C	> 114 %	EN 12311-2
Shore D hardness	> 42	EN ISO 868
Crack bridging <i>Method A, static</i> <i>Method B, dynamic</i>	A5 (23°C) > B4.1 (23°C)	EN 1062-7
Liquid water permeability	w < 0,1 kg/m ² x h ^{0.5}	EN 1062-3

Resistance to ozone	Excellent		EN 1844
Resistance to severe chemical attack	Hydrocarbon mixture	Class II	EN 13529
	Acetic acid 10 %	Class II	
	Sulphuric acid 20 %	Class II	
	Sodium hydroxide 20 %	Class II	
	Sodium chloride 20 %	Class II	

ELASTORAPID VK 260 es 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 EEP**, **ITALPAINT 136**, **ITALPAINT 67** o **ITALPAINT 10**.

Curing

At 22°C, 50 % R.H.	
- Gel time	10-15 seconds
- Touch dry	1-2 minutes
- Withstands traffic with caution (on non-crumbling supports)	30 minutes
- Light traffic	24 hours
- Complete curing	7 days

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.

		
PERFORMACES IN COMPLIANCE WITH CERTIFICATION CE EN 1504-2		
Product type 1702		DoP 103
Characteristics	Product performance	Test Method
CO ₂ permeability	s _D > 50 m	EN 1062-6
Water vapour permeability	Class I	EN ISO 7783-2
Liquid water permeability	< 0,1 kg/m ² x h ^{0.5}	EN ISO 1062-3
Bond strength by pull-off	> 2,0 N/mm ²	EN 1542
Crack bridging	A5 (23 ^o C) > B4.1 (23 ^o C)	EN 1062-7
Impact resistance	Class III	EN ISO 6272-1
Temperature shock	> 2,0 N/mm ²	EN 13687-5
Abrasion resistance	< 3000 mg	EN ISO 5470-1
Resistance to severe chemical attack	CR4 (Class II), CR9 (Class II), CR10 (Class II), CR11 (Class II), CR12 (Class II).	EN 13529
Hazardous substances	The hardened product does not release hazardous substances	
Reaction to fire	F	EN 13501-1
Linear shrinkage	NPD	EN 12617-1
Coefficient of thermal expansion	NPD	EN 1770
Cross-cut test	NPD	EN ISO 2409
Thermal compatibility	NPD	EN 13687-1
Resistance to liquids	NPD	EN ISO 2812-1
Slip/skid resistance	NPD	EN 13036-4
Exposition to artificial atmospheric agents	NPD	EN 1504-2
Electrical resistance	NPD	EN 1081
Compressive strength	NPD	EN 12190
Compatibility on wet concrete	NPD	EN 13578

CR4: 60 % toluene, 30 % xylene, 10 % methylnaphthalene

CR9: acetic acid at 10 %

CR10: sulphuric acid at 20 %

CR11: sodium hydroxide at 20 %

CR12: sodium chloride at 20 %

The information contained in this sheet are based on our knowledge and current experiences. They cannot in any case imply a guarantee by our side, nor responsibility for the use of our products, since the usage conditions are not under our control. Before using the product it is thus advisable to make practical tests to confirm the suitability for the intended use in the real operating conditions. ITALCHIMICA S.r.l. reserves the right to modify technical features, descriptions and illustrations in any moment. The company declines any civil liability for the non-compliant or inappropriate employment of the product compared to what is disclosed in the technical data sheet.