

Elastomeric Polyurea Membrane

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Product Description

ShieldPoly F-15(za) is a polyurea elastomeric membrane with the following properties:

- ✓ Protection and waterproofing of steel, concrete, and wood surfaces.
- ✓ Continuous coating of high flexibility.
- ✓ High crack bridging capability.
- ✓ Instant drying
- ✓ Fast commissioning over a wide range of temperatures.
- ✓ 100% solids
- ✓ Excellent resistance to immersion in water and in a wide variety of chemical products.
- ✓ Excellent resistance to the development of fungi and algae.
- ✓ Excellent abrasion resistance.
- ✓ Excellent impermeability to chlorides, complies the specification LNEC E468.
- ✓ Could be used for vertical and horizontal surfaces.
- ✓ It has EOTA certification according to ETAG 005 for waterproofing flat and sloping roofs, terraces, and balconies (ETA 20/0160) for an estimated durability of over 25 years.
- ✓ CE Marking product according ETAG 005, EN 13813 and EN 1504-2.

Main Applications

ShieldPoly F-15(za) was specially developed for waterproofing roofs, terraces and balconies, protection of steel, concrete, and wood structures, inserted in mechanical and chemically aggressive environments.

Is recommended to protect concrete pipelines on industrial and domestic wastewater, industrial plant and refinery covers, retention basins, dams, bridges, buried concrete tanks, silos, industrial floors, waterproofing in parking areas and terraces.

It can also be applied inside and outside of swimming pools and to protect equipment bases exposed to vibration.

Properties

Finish	Medium Gloss
Color	Grey 7N05; Blue 5N15; Other colours: under request.
Components	2
Mixing Ratio (by weight)	Resin 7P-931 1 part Cure 7P-932 1 part
Volume Solids	100 %
Specific Gravity	Mix 1.098 g/mL (for colour 7N05) Resin 1.072 g/mL (for colour 7N05) Cure 1.125 g/mL
Dry Film Thickness	0.8 to 3.0 mm per coat It is recommended a minimum total thickness of 1.4 mm. According to SSPC Paint 45 specification, for immersion conditions the minimum thickness should be 2 mm.
Number of Coats	1 to 2

Application Method	Thermal spray gun with mixing of two components in the nozzle. The parameterization of the equipment must be adjusted to the type of application and projection conditions
Theoretical Coverage	1.0 m ² /L at 1mm Consider losses caused by application, surface irregularities, etc.
Drying time	At 23 °C of room temperature, 50 % relative humidity, 75 to 80 °C of application temperature and 200 bar of application pressure: Set to touch 5 seconds Dry hard 5 minutes Fully cured 24 hours For immersion 72 hours

Recoating times between primers and polyurea:

Primers	Recoating at 10 °C	Recoating at 23 °C	Recoating at 30 °C
Cingard Primer FD	8 - 24 hours	3 - 16 hours	1 - 6 hours
Cingard Bond Primer	4 - 48 hours	2 - 24 hours	1 - 16 hours
C-Floor PU310 SL	24 - 72 hours	16 - 72 hours	4 - 36 hours
C-Floor Sealer E140	36 - 48 hours	16 - 24 hours	8 - 16 hours
C-Floor Primer E150 DP	36 - 48 hours	16 - 24 hours	4 - 12 hours
C-Floor Primer E135 AP	16 - 48 hours	4 - 16 hours	1 - 6 hours
C-Pox ST170 FD	36 - 48 hours	16 - 24 hours	4 - 12 hours

Recoating times between primers and mortars:

Mortars	Recoating at 10 °C	Recoating at 20 °C	Recoating at 30 °C
CIN-CS Fast Repair 100	5 hours - unlimited	2 hours - unlimited	1 hour - unlimited
Cromodrol Sealer Argamassa Estanque CIN-CS Moisture Barrier 2000 CIN-CS SL60	72 hours - unlimited	48 hours - unlimited	48 hours - unlimited

Recoating times between topcoats and polyurea:

Topcoats	Recoating	
	Minimum	Maximum
With the product itself	-	2 hours
Polyurethanes or Polyaspartics	30 minutes	6 hours

Surface Preparation

New Concrete

The concrete should be allowed to have a minimum 28 days to harden, a minimal tensile strength of 1.5 MPa and a minimum compression resistance of 25 N/mm². The surface should be firm, dry, and completely cured before application of the coating. The concrete surface should be properly levelled.

Old Concrete

Damaged areas should be removed until a firm, well compacted surface is found. The concrete cohesion value should be at least 1.5 MPa.

If, after removing the damaged concrete, the surface is irregular and with holes, it is advisable to apply an epoxy mortar, prepared with ShieldPrime CA, silica, silica powder and thickener additive or with the fast-setting cementitious mortar. The uneven floors and horizontal concrete surfaces could be levelled with the cementitious mortar **CIN-CS SL5** or **CIN-CS SL60**. Such cementitious mortars must be primed before the application of ShieldPoly F-15(za).

Concrete laitance, loose particles, as well as other impurities and traces of contaminants that could damage the good adhesion of the coating system, will be removed preferably by sandblasting (slight sweep). Once this operation is over, removes dust and material loose by vacuum or sweep.

Steel

Abrasive blast cleaning to Sa 2½ according to EN ISO 8501-1, with a roughness profile Rz between 80 and 100 µm. If it is not technically possible to spray abrasives, mechanically prepare the surface up to the grade St 3 according to EN ISO 8501-1.

Ceramic

Wash and degrease the surface. To ensure better adhesion of the coating mechanical preparation is recommended multipurpose machine with diamond grinding wheel.

New galvanized surfaces, aluminium, light alloys, lacquered panels

Eliminate oils and fats with the cleaning thinner. Afterwards perform a light blasting with a fine abrasive. In galvanizing exposed to the weather for 6 months or more, eliminate the products of zinc corrosion by mechanical tools. Eliminate oils and fats with the cleaning thinner.

Asphaltic roofing sheets

The surface must be well adhered, clean, dry, and free of oils, grease, dust, and contamination. Wash the surface with neutral detergents followed by rinsing with high pressure clean water.

PVC and PU membranes

The surface must be well adhered, clean, dry, and free of oils, grease, dust, and contamination. Degrease with 7Q-280.0000.

Wood

New wood - sand it, following the direction of the fibres with a medium grade sandpaper. Previously coating/varnished woods - If there is degradation of the previous coating or varnish, sand it. If no visible degradation is present, make a careful sanding to ensure good adhesion.

Polyurethane foam

The surface must be well adhered, clean, dry, and free of oils, grease, dust, and contamination.

Application

Stir previously the component Resin with mechanical mixer, at low revolutions, for 5 minutes. It is recommended to maintain agitation of the component Resin during application. The equipment must be placed in recirculation mode and the components must be heated to the recommended temperature. In closed areas it should be created good ventilation conditions during the application and drying.

Ambient Application Conditions:

- Air Temperature : -10 to 50°C
- Relative humidity : less than 85%
- Minimum surface temp. : 3°C above dew point
- Substrate humidity : Concrete: less than 4 %;
With C-Floor Primer E150: less than 5 %, according to ASTM F2659, measured with "Tramex" equipment type.
C-Floor Primer E150 DP, Cromodrol Sealer, CIN-CS Moisture Barrier 2000, CIN-CS SL5, CIN-CS SL60, CINCS Fast Repair 100 and Waterproof Mortar: the superficial humidity measured with "Protimeter" equipment type should be less than 15 %.

Application Equipment:

- Mixing in the nozzle
Pump with heating Ex: Reactor Graco E-XP2 or H-XP3
- Gun Ex: Fusion MP, GX-7 DI, GX-7 400 or GX-8
- Fluid pressure 150 - 200 bar
- Air pressure 5 - 7 bar
- Resin Temperature 65 - 70 °C
- Cure Temperature 75 - 80 °C
- Hose Temperature 70 - 80 °C
- Pump filter 30 Mesh (0.595 mm)
- Gun filter 60 Mesh (0.250 mm)

Cleaner Thinner:

52-510 Dil. Industrial Cel

Approvals & Certificates

Waterproofing of roofs, terraces, and balconies

This product complies with the requirements of ETAG 005, Part 1 and 6 and has ETA 20/0160, issued by IETcc (Institute of Construction Sciences Eduardo Torroja). See ETA for consultation of allowed primers and finishes.

Resistance to cracking bridging - method A

ShieldPoly F-15(za) has a class A5 at 23 °C according to EN 1504-2 and EN 1062-7.

Resistance to cracking bridging - method B

ShieldPoly F-15(za) has a class B 4.2 (a 23 °C e - 20 °C) according to EN 1504-2 and EN 1062-7.

Fire Reaction

ShieldPoly F-15(za) is certified with the classification E and E_i according to EN 13501-1.

CE Marking

CE Marking is the evidence given by ShieldCrete® International that this product is subject to the provisions of Community Directives of the Construction Products that are applicable with European Regulation n° 305/2011 on March 9.

This product complies with the requirements of Annex ZA of the standard EN 13813 "Screed material and floor sounds - Sound material - Properties and requirements" in line with system of conformity 3 (Table ZA.2).

This product also complies with the requirements refereed in the Annex ZA of the European Standard EN 1504-2 "Products and Systems for the protection and repair of concrete structures. Definitions, requirements, quality control and conformity assessment. Part 2: Surface protection systems for concrete", according to the principles 1 (protection against the ingress), 2 (humidity control) and 8 (increased resistivity), in line with a compliance system 4 and 3 (Table ZA.3d).

The waterproofing system with this product complies the requirements of ETAG 005 "Guideline for European Technical Approval Of Liquid Applied Roof Waterproofing Kits", Part 1 "General" and 6 "Specific Stipulations for Kits Based on polyurethane", according to the compliance system 3.

Its main features can be found in the declaration of performance

Performance

Tensile strength (DIN 53504) - initial without finishing	21 ± 3 MPa (1.5 mm thickness)
Tear strength (ISO 34-1) - initial without finishing	24 ± 3 N/mm (1.5 mm thickness)
Elongation at break (DIN 53504) - initial without finishing	380 % ± 30 % (1.5 mm thickness)
Hardness (EN ISO 868)	40 Shore D (1.5 mm thickness)
Abrasion Taber (H18 /1000 g/1000 cycles)	149 mg
Thermal resistance	- 35 °C a 150 °C

Chemical Resistance

Spilled Product	Resistance after 12 months exposure ASTM D6943 - Method A
Methanol	Doesn't resist.
Gasoline	Slight surface change, no hardness loss.
Gasoil	No visible damage.
Toluene	Doesn't resist.
MTBE	Slight surface change.
MTBE/Gasoline 5 %	Slight surface change.
Motor Oil	Slight surface change, no hardness loss.
Fluid Hydraulic	Slight surface change, no hardness loss.
2 - methyl butane	No visible damage.
Water, 82 °C during 14 days	No visible damage.
Sugar water 10 %	No visible damage.
Sulphuric acid 20% and 3 % at 50 °C, during 14 days	No visible damage, in any case.
Hydrochloric acid 10 % 37 %	No visible damage. Doesn't resist.
Phosphoric acid 10 %	No visible damage.
Formic acid 85 %	Doesn't resist.
Hydroxide Ammonium 20%	No visible damage.
Sodium Hydroxide 20 % 50 % and 1 % and 50 °C during 14 days	No visible damage. Slight surface change, no hardness loss. Slight surface change, no hardness loss.
Potassium Hydroxide 10 % 20 %	No visible damage. Slight surface discoloration, no hardness loss.
Acetic acid 10 %	No visible damage.

Notes & Observations

- If the overcoating time is exceeded, it is recommended to apply one coat of ShieldPrime IC before the application of a new layer of ShieldPoly F-15(za). The maximum recoating times are drastically reduced to temperatures above 23 °C.
- Before applying any primer or sealer it must be checked if the depth and surface moisture of the substrate and mortar is within the limits. If **C-Floor Primer E150 DP** is applied over mortars, the minimum overcoating time can be reduced.
- It may be necessary to apply more than one coat of primer layer to eliminate any porosity of the support. For specific recommendations on application methods please see the technical data sheet of each primer. The existence of pores in the support may cause blistering of the coating. Do not use the **Cingard Primer FD** over the **CIN-CS Moisture Barrier 2000**.
- This product should be applied only by specialized and trained applicators.
- To ensure that there are no differences in shade on the floor, it is recommended to apply a single batch of product in the same area of application.
- The product must not be frozen. The product should not be stored at low temperatures as it may cause crystallization. The product should not be stored at temperatures above 50 °C because it may cause the formation of insoluble solids and increase in their viscosity.

Additional Information

Drying Mechanism – Chemical reaction between components

Volatile Organic Compounds (VOC)

EU limit for this product (cat. A/j): 500 g/L

This product contain max VOC::

- Resin : less than 12 g/L
- Liquid : 0 g/L
- Cleaner Thinner : less than 865 g/L
- Mixture : less than 6 g/L*

* The VOC value shown above refers to a ready for use product, as tinted, thinned, etc in accordance with our recommendations. We are not responsible for products obtained by mixing products with are different from those we have recommended and we must draw attention to the responsibility of anyone involved within the supply chain not to infringe Directive 2004/42/CE.

Flashpoint (EN 426)

- Resin : 141°C
- Cure : 175°C
- Cleaner Thinner : less than 0°C

Supply Form

- Resin : 20 and 200 L
- Cure : 20 and 200 L

Shelf-life

Resin: 2 years, shipped and stored in the original containers, indoors, between 5 and 35 °C.

Cure: 1 year, shipped and stored in the original containers, indoors, between 5 and 35 °C.

Health, Safety, and the Environment

- ✓ Protect the eyes and skin from contact.
- ✓ Gloves, goggles, and appropriate clothing should be worn.
- ✓ Keep out of the reach of children.
- ✓ Use only in well ventilated areas.
- ✓ Do not empty into drains.
- ✓ Keep the container properly sealed and stored in the correct place.
- ✓ Take correct measures when transporting the product to avoid any accidents that could rupture the can or cause damage to the packaging.
- ✓ Ensure that the container is correctly stacked in a safe area.
- ✓ Do not store or use the product in extreme temperature conditions.
- ✓ Always take account of the appropriate legislation relating to the environment and Health and Safety at Work.

For more information it is essential to read the label on the container and the Material Safety Data Sheet of this product, its components and all complementary products referred on Technical Data Sheet.

DISCLAIMER

The information provided herein, especially recommendations for the usage and the application of our products, is based upon our knowledge and experience. Due to different materials and equipment used, as well as varying working conditions and environments beyond our control we strictly recommend carrying out intensive trials to test the suitability of our products regarding the required processes and applications. This data sheet is provided free of charge, and we do not accept any liability regarding the above information or regarding any verbal recommendation, except for cases where we are liable of gross negligence or false intention.