

**Urespray
P-500****Isocianato
5332****DESCRIPTION**

Urespray P-500 is a pure polyurea elastomer system formed by the reaction of two fast-drying liquid components applied by mechanical spraying.

CHARACTERISTICS

Urespray P-500 is a **highly flexible**, comprehensive elastic coating, without joins or overlaps, suitable for waterproofing. Because it dries in less than 5 seconds, it can be moved within a few hours of application, depending on the environmental conditions.

The fully cured **Urespray P-500** system has waterproofing properties and excellent mechanical properties such as resistance to abrasion, shrinkage and tearing. It also behaves very well at low temperatures and is highly resistant to most chemicals.

APPLICATIONS

Urespray P-500 is primarily used for construction and industrial applications. It is mainly used to waterproof and protect:

- Landscaped roofs and facades
- Pitched or flat roofs
- Flat, trafficable roofs; balconies; terraces; parking areas; other roof types and concrete structures
- Roofs and pavements exposed to vehicular traffic
- Pools
- Reservoirs and irrigation channels
- Anti-slip applications
- Retaining walls and foundations
- Elastomeric coating of polyurethane and expanded polystyrene foams
- Waste water facilities.

Spray application means that irregular surfaces, or areas with complicated geometries, can be covered, forming a uniform film.

METHOD OF APPLICATION

The practical method of application is to use thermal spraying equipment, with the following characteristics:

- Pressure of components: 150–200 bar
- Pre-heater temperature: 70–80°C
- Hose temperature: 70–80°C

In cold environments, the temperature of the component pre-heaters should be adjusted to equalise pressures and ensure good mixing.

**Urespray
P-500**
**Isocianato
5332**
APPLICATION PROCESS

Every surface to be coated should be clean of dust and grease and completely dry. According to tests carried out during the ETA (European Technical Assessment) process, the product can be applied within a broad range of temperatures between -20°C and 90°C . However, from our experience, we recommend applying polyurea at above 5°C and when the relative humidity is below 75%.

The properties of **Urespray P-500** mean it will adhere to any surface. However, its adhesion and the need for **primers** should be tested before application. According to the ETA, the minimum thickness of the dry applied product should be 1,6 mm, although the recommended thickness is 2 mm. The product should be applied in thin layers using a criss-cross pattern, allowing each layer to dry before applying the next. To ensure sound waterproofing, the surface should be free of moisture, as this can cause pores or bubbles. A very fine first pass is recommended to detect the presence of moisture if bubbles or air pockets appear.

For roofs with sections that have deteriorated due to lifting of the waterproof layer, clean the deteriorated area by removing the entire waterproof layer. Then re-apply the product in the cleaned area, making sure to overlap the new layers by at least 3 cm with the non-deteriorated areas.

Syntox-FA primer is recommended for porous and non-porous substrates (metallic surfaces), and Syntpur PO-84 for porous substrates (industrial flooring, concrete and wood).

After applying Urespray P-500, we recommend using the aliphatic acrylic varnish, Alisyn-FA, which is UV-resistant to prevent colour degradation. For surfaces exposed to wheel traffic, we recommend using the aliphatic varnish Alisyn-AS. If more than 24 hours have passed after application of Urespray P-500, before applying Alisyn-FA, the epoxy primer Syntox-FA must be used.

Urespray P-500 can be pigmented in different colours by the onsite addition of inorganic pigments to Component A. Component A tends to separate over time. Therefore, it should be stirred until completely homogenised, especially if pigmentation is being added.

The **Urespray P-500** pure polyurea system can be applied to multiple surfaces. The procedure will differ depending on their nature and condition. We have summarised the preparation, methods and recommendations for application on the most common surfaces below.

Substrate	Preparation	Action	Recommendations
Polyurethane	Clean the surface	Brushing, sweeping or sanding	Always
	Apply a primer	Syntox FA primer	For substrates applied for more than 24 hours
Metal	Clean the surface	Solvent recommended	Remove any grease and/or silicone
	Improve adhesion	Sandblasting under pressure	
	Apply a primer	Syntox FA primer	Respect times recommended in TDS

**Urespray
P-500**
**Isocianato
5332**

Concrete	Homogenise the surface	Mill or sand	Ensure surface is dry before application
	Apply a primer	Syntpur PO 84/Syntox FA	Porous/non-porous substrates
	Remove depressions/cracks	Fill and seal	Repair with polyurethane resins
Mortar	Homogenise the surface	Use a miller	Ensure surface is dry before application
	Apply a primer	Syntpur PO 84 primer	Respect times recommended in TDS
	Remove depressions/cracks	Fill and seal	Repair with polyurethane resins
Ceramics	Remove broken pieces and hollows	Fill and seal	Repair with polyurethane resins
	Clean the surface	Pressurized water or dry pressure	Ensure surface is dry before application
	Apply a primer	Syntox FA primer	Respect times recommended in TDS

Note: For more information, contact our technical department.

MAINTENANCE AND REPAIR

a. ROOF RENOVATION. If the polyurea needs repair, proceed as follows:

- ✓ Trim and remove the affected area.
- ✓ Clean the affected area by sanding or milling. Expand the area to ensure a good grip.
- ✓ Use blowing or suction to remove any waste (if washing, apply ketone-based solvent and avoid water).
- ✓ Apply primer.
- ✓ Apply the same type of polyurea as that being repaired.
- ✓ Apply an aliphatic finish, if applicable.

b. REPAIR OF DAMAGED OR DETERIORATED AREAS. If the polyurea needs repair, proceed as follows:

- ✓ Trim and remove the affected area.
- ✓ Clean the affected area by sanding or milling. Expand the area to ensure a good grip.
- ✓ Use blowing or suction to remove any waste (if washing, apply ketone-based solvent and avoid water).
- ✓ Apply primer.
- ✓ Apply the same type of polyurea, overlapping at least 3 cm.
- ✓ Apply an aliphatic finish, if applicable.

c. RECOATING If the recoating time (48 hours) has been exceeded, proceed as follows:

- ✓ Sand or mill a longitudinal overlap strip about 30 cm wide.

**Urespray
P-500**
**Isocianato
5332**

- ✓ Use blowing or suction to remove any waste (if washing, apply ketone-based solvent and avoid water).
 - ✓ Apply primer.
- Clean these products with neutral detergents, avoiding mechanical abrasion.

COMPONENTS

- COMPONENT A:** **Urespray P-500**
 A polyetheramines mixture
- COMPONENT B:** **Isocianato 5332**
 Modified MDI (Methylene diphenyl diisocyanate)

COMPONENT CHARACTERISTICS

Characteristics	Units	Isocianato 5332	Urespray P-500
Specific weight 20°C	g/cm ³	1,11	1,12
Viscosity	cPs	640 - 890 (25°C)	400 - 700 (22°C)
Free NCO content	%	14,4 - 15,4	-

SYSTEM SPECIFICATIONS

Measured in a test vessel at 22°C in the mixing ratio specified by the in-house standard (MAN-S01).
 A/B mixture ratio: 100/100 by weight

Specifications	Units	Urespray P-500
Gel time	s	3 - 5
Set-to-touch time	s	6 - 10
Free density	g/L	900 - 1000

**Urespray
P-500**
**Isocianato
5332**
CHARACTERISTICS

Characteristics of the membrane:

Characteristics	Standard	Units	Urespray P-500
Apparent density	DIN 53420	Kg/m ³	1100
Tensile strength	UNE EN ISO 527	MPa	>22
Elongation		%	>350
Tear strength	ISO 34-1:2011	N/mm	>55
Taber abrasion	ISO 5470-1:2016	mg	110
Shore hardness	UNE EN ISO 868	Sh D	55 see curing time chart*
Resistance to strong chemical attacks	EN 13529:2005		see chemical resistance chart**
Water vapour diffusion resistance (μ)	EN 1931		3400
Consumption		Kg/m ²	1,5
Adhesion (concrete)		KPa	>50
Slip resistance (R _d)	UNE-ENV 12633:2003		49

*Curing time chart (result of test for 2-3 mm of thickness and 35-40% R.H.)

- Temperature 5°C:

Time	Shore D
15 min	30
30 min	40
45 min	45
1 h	50
2 h	52
5 h	55

**Urespray
P-500**
**Isocianato
5332**

- Temperature 23°C:

Time	Shore D
15 min	37
30 min	37
45 min	39
1 h	39
2 h	40
5 h	42
24 h	55

**Chemical Resistance chart (EN 13529:2005)

Substance	Conditions	Final Shore D (initial shore 55)
H ₂ SO ₄ (20%)	3 days, 70°C	49,5
NaCl (20%)	7 days, 70°C	54,45
NaOH (20%)	7 days, 70°C	49,5
Bleach	3 days, 40°C	50,6
Diesel	3 days, 70°C	50,05
Motor oil	7 days, 40°C	52,25
HCl (18%)	7 days, 70°C	50,6
Salt water	7 days, 70°C	53,35
Glycerin	7 days, 70°C	50,6
NH ₃ (25%)	7 days, 70°C	45,1

**Urespray
P-500**
**Isocianato
5332**

Classification according to ETA (16/0153):

Characteristics	Urespray P-500
Climatic zone	S (severe)
Surface temperature	from -20°C to 90°C
User load	on polyurethane: P3 (accessible for maintenance of plant and equipment and to pedestrian traffic) on other substrates: P4 (roof gardens, inverted and green roofs)
Slope of construction element	S1-S4 (<5% - >30%)
Working life of the system (EOTA)	W3 (25 years)

Other tests:

Properties	Result	Method
Reaction to fire	Class E	UNE-EN 13501-1
External fire performance	Classification B _{roof} (t1)	EN 13501-5
No migration of substances to drinking water (potable)*	SUITABLE	UNE-EN 12873-2/2005 RD-140/2003
French positive list used for the assessment of products intended to come into contact with drinking water (Attestation de conformité Sanitaire, ACS).	SUITABLE	CARSO- Laboratoire Santé Environnement Hygiène de Lyon (MCDE)
Contact with foodstuffs (simulant D1-ethanol 50%)*	SUITABLE	EN 1186-1:2002
Polish hygiene certificate (HK/W/0624/01/2016)	SUITABLE	
Slip resistance	Class 3	UNE-ENV 12633:2003

*Result of valid test for Urespray P-500 pigmented in grey

STORAGE RECOMMENDATIONS

Components A and B are sensitive to moisture and must be stored in airtight containers or tanks. The storage temperature should be between 15°C and 25°C.

Avoid lower temperatures that can cause crystallization in the isocyanate, as well as high temperatures that can cause alterations in the polyol.

Page 7 of 8

Argent 3 – 08755 Castellbisbal (Barcelona) Spain
 Tel. (34) 93 6821300 – Fax (34) 93 6820975
 www.synthesia.com / cservice@synthesia.com



This is the best information available, although not guaranteed, due to the complexity of the use of raw materials and equipment, which may alter the results.

**Urespray
P-500****Isocianato
5332**

With proper storage, the shelf lives are 12 months for Component A (polyol) and 9 months for Component B (isocyanate).

SAFETY RECOMMENDATIONS

There are no significant risks with the system if handled properly. Avoid contact with the eyes and skin. Preparation and handling must be in accordance with the product's safety data sheets.

AVAILABLE FORMATS

The materials are normally supplied in non-returnable, 25-, 50- and 220-litre metal drums (blue for Component A and black for Component B).