



XPS URETHANE X

**TWO-COMPONENT POLYURETHANE PROTECTIVE COATING
WITH SATIN/GLOSSY FINISH FOR OUTDOOR USES**



DESCRIPTION

XPS URETHANE X is a two-component coating based on flexible, transparent, or colored, air-cured synthetic aliphatic polyurethane resins. Once cured provides a protective and decorative coating with highly resistance to weathering and UV rays, with long-term color stability and suitable for protection of concrete and masonry surfaces. It is available in two versions: gloss or satin finish. Meets the requirements of European Standard EN 1504-2; Surface protection systems for concrete.

APPLICATION FIELDS

- Decorative and protective coating against abrasion suitable on concrete floors, tiles and ceramic pavements in sport centers, industrial facilities, warehouses, underground car parks, terraces, balconies, etc.
- Anti-corrosion protection with decorative finish in metal structures, bridges, sewage treatment plants, harbors, tanks, etc.
- Protective coating against UV ray for epoxy or polyurethane resins in outdoor areas.
- Protective coating for architectural concrete and facades against weathering and





- aggressive environment such as acid rain, freeze/thaw cycles, marine environment, etc....
- Multilayer systems for wet processing areas, stairs, ramps, loading docks, cold storage, maintenance areas, etc.
 - Protective coating on drainage boxes, retaining tanks or areas exposed to spillages and splattering of chemical compounds and UV rays: petrol, diesel, fuel oil, lubricating oils, diluted chemicals, etc.
 - Protection and finish suitable for outdoor areas on support of wood, metal, and ceramic tiles in general, epoxy and polyurethane systems.
 - Protection of drinking water tanks and food industry.
 - Chemical protective coating of concrete structures in cooling towers, industrial plants, warehouses, etc.

ADVANTAGES

- Resistant to UV rays, providing durability and color stability.
- Long lasting. Withstands a wide temperature range and weathering.
- Excellent abrasion resistance against road traffic and machinery.
- Very good chemical resistance to water, seawater, wastewater, grease and oils, de-icing salts, salt solutions, diluted alkali, and acid solutions.
- Excellent adhesion on concrete and cement mortars. No special primer/bonding agent is required.
- Provides a compact, continuous, uniform surface with anti-dust finish for easy cleaning and maintenance of the surface coated.
- Quick drying.
- Can be applied as a non-slip floor finish by dusting of aggregates on top.
- Easy and ready to use product: applied manually by brush, roller, or mechanically by air-less spray equipment.

APPLICATION INSTRUCTION

Surface preparation

Surface must be structurally sound, firm, without cement laitance and as uniform as possible, and preferably with a slight roughness, i.e., open textured surface. It must be clean and free of paints, coatings, efflorescence, loose particles, grease, oils, curing agents, form release agents, dust, gypsum plasters, organic growth or any other contaminants that may affect to adhesion. Surface moisture content should not exceed 5%. Do not apply on substrates subject to rising damp or negative water pressure.

Concrete and mortars:

Provide a mechanical texturing by abrasive disc, dry sandblasting, scarification, or other abrasive method to achieve at least a slightly textured surface, not being desirable aggressive mechanical or chemicals means. Finally, vacuum the dust and loose particles.

All small voids, holes, honeycombs, cavities, once opened must be patched with an epoxy-cement mortar or with an epoxy-based mortar. Static cracks without movement, once opened and routed to a minimum depth of 0.8 in (2,0 cm).

Rebars should be cleaned, while non-structural and surface iron elements must be cut to a depth of at least 0.8 in (2,0 cm) and then covered with **XPS URETHANE X**.

Expansion joints and fissures/cracks subject to movements, once opened must be sealed with a suitable sealant.

Steel surfaces:

Metal surfaces should be cleaned to remove all traces of corrosion, and must be degreased, dry and free of dust. Use sand or shot blasting to grade Sa 2½ of Swedish Standards.

Mixing

XPS URETHANE X is supplied as a pre-weighed two-component set.

Premix the components separately, and then the hardener component B, is poured into the resin component A, ensuring is fully added.

Mixing manually or preferably using a low speed drill (300-400 rpm. maximum), fitted with a mixer suitable for liquids, for about 2-3 minutes until achieving a homogeneous product in color and appearance.

Application

Apply by using a brush or roller resistant to solvents. If using an air-less spray equipment, dilute with the minimum amount of solvent that allows its spray application.

Priming on concrete or porous substrate:

Apply a first coat of **XPS URETHANE X** diluted with 10-15% of solvent with a consumption of 0.04 lb/gal (0,20 kg/m²), depending on substrate porosity.





Priming on low or non-porous substrates:

On low porosity substrates such as marble, natural stone, porcelain, tile, vitrified elements, terrazzo, granite, polished concrete, and metal, apply a primer with a consumption of 0.02-0.03 gal/ft² (0,10-0,15 l/m²).

Once primer is dry, i.e., from 4 to 6 h for **XPS URETHANE X** is diluted with a solvent and within 1 hour, the surface is ready for the following coat.

Coating with smooth surface finish):

Once primer is dry, apply one or two pure coats of **XPS URETHANE X** with a consumption from 0.04 to 0.05 lb/ft² (0,20 to 0,25 kg/m²) per coat, depending on porosity substrate, and allow a drying time between coats of 4 to 6 hours at 68°F (20°C).

Additional coats can be applied following the same interval time between coats. If this time does elapse before the following coat is applied or the surface has been in contact with water or other liquids, then lightly sand the surface before proceeding with next coat. Total recommended consumption for this application is of 0.08-0.1 lb/ft² (0,40-0,50 kg/m²).

Coating with non-slip surface finish (Slip/skid resistance value, Rd=3):

Once primer is dry, apply one pure coat of **XPS URETHANE X** with a consumption of 0.04-0.05 lb/ft² (0,20-0,25 kg/m²) per coat, depending on porosity substrate.

While this coat is still fresh, dust dry and clean silica sand **XPS URETHANE X**, 0.01 to 0.03 in (0,2 to 0,4 mm size) with a consumption from 0.2 to 0.3 lb/ft² (1,0 to 1,5 kg/m²). Once it is dry, i.e., at least 4-6 hours, depending on environmental and ventilation conditions, sweep and vacuum surface to remove unbounded and excess sand. Finally, apply a second coat of pure **XPS URETHANE X** with a consumption of 0.08 lb/ft² (0,40 kg/m²). Total recommended consumption for this application varies from 0.12 – 0.14 lb/ft² (0,60 to 0,70 kg/m²).

Application conditions

Do not apply when rain, water contact, condensation, dampness, or dew is expected within 72 h after application.

Do not apply with substrate and/or ambient temperature is at or below 50°F (10°C), or when are expected to fall below 50°F (10°C) within 24 h

after application. Do not apply to frozen or frost-covered surfaces.

Ambient and surface temperature must be at least 37.4°F (3°C) higher than dew point. Check the relative humidity and dew point before applying in proximities to marine environment.

Curing

Allow **XPS URETHANE X** to cure for at least 3 days at 68°F (20°C) and 50% R.H. before water immersion, flooding test or heavy traffic. Applications at lower temperatures, high humidity and/or poor ventilation require longer drying and curing times.

Cleaning

All mixing and application tools must be cleaned immediately with solvent, after use. Once product cures, this can only be removed by mechanical means.

CONSUMPTION

Estimated consumption of **XPS URETHANE X** is 0.04 lb/ft² (0,20 kg/m²) as primer, and 0.04-0.05 lb/ft² (0,20 to 0,25 kg/m²) per successive coats for smooth finish.

These figures are for guidance only and may vary depending on porosity, texture, substrate conditions and application method. Perform a preliminary test on-site to ascertain the total consumption exactly.

IMPORTANT INDICATIONS

- Do not apply on substrates subject to rising damp or negative water pressure.
- Surface moisture content must be below 5%. Allow substrate to dry enough after rain, water contact, damp, dew, condensation, etc., as well as after washing of surface. If moisture is trapped behind the coating, a white film may be developed.
- Allow new concrete and cement mortars to cure 28 days before coating.
- Do not add solvents, thinners, or other non-specified compounds, and not exceed the recommended mixing ratio when **XPS URETHANE X**.
- Observe the recommended consumptions per coat.
- For other uses not specified on this Technical Bulletin or further information, consult the Technical Department.





PACKAGING

XPS URETHANE X is supplied in pre-weighed two-component sets of 11 lb and 55.1 lb (5,0 kg and 25 kg). It is available in gloss or satin finish, with the following colors: grey, red, green, dark blue, light blue and transparent. Other colors are available upon special request.

STORAGE

Twelve months component A and Twelve months component B, in its unopened original packaging. Store in a cool, dry, and covered place, protected from moisture, frost and direct sunlight, with temperatures between 41°F and 86°F (5°C and 30°C). Storage at higher temperatures may result in an increase of viscosity.

SAFETY AND HEALTH

XPS URETHANE X is a flammable product so all storage, transport and handling precautions

must be observed for this kind of product. Do not smoke in working areas and provide adequate ventilation. Keep away packaging from heat and ignition sources.

Skin and eye contact must be avoided. Safety rubber goggles and protective gloves should be used when handling, mixing, and applying the product. In case of contact with skin, wash affected area with soap and water. In case of eye contact, rinse immediately thoroughly with clean water but do not rub. If irritation persists, seek medical assistance.

Consult the Material Safety Data Sheet for **XPSURETHANEX**.

Disposal of the product and its packaging must be carried out according to the current official regulations and it is the responsibility of the final user of the product.





TECHNICAL DATA

Product characteristics	
<i>CE Marking, EN 1504-2</i>	
Description. Polyurethane coating for protection of concrete. Coating (C). Principles / Methods. Protection against ingress with coating (Principle 1-PI / 1.3) and Moisture control with coating (Principle 2-MC / 2.2)	
A: B mixing ratio	4:1
Density at 20°C, lb/gal (g/cm ³)	10.8 (1,29±0,05)
Application and curing conditions	
Minimum application temperature °F (°C)	>50 (>10)
Waiting time between coats at 68°F (20°C), hours	4-6
Total curing time at 68°F (20°C) & 50% R.H., days - Permanent immersion, flooding test, heavy traffic	3
Cured product characteristics	
Permeability to water vapor, EN ISO 7783-1/-2. - Classification, S _D , ft (m)	Class I: Permeable to water vapor <16.4 (<5)
Permeability to water and capillary absorption, EN 1062-3. w (kg/m ² ·h ^{0,5})	< 0,33
Permeability to CO ₂ , EN 1062-6. S _D , ft (m)	>164 (>50)
Adhesion on concrete at 28 days, EN 1542, Psi (MPa)	≥ 143.9 (>1,0)
Adhesion on metal / concrete, ASTM D-4541, Psi (MPa)	394.4 (2,74) / 539.8 (3,75)
Abrasion resistance (Taber Index), ASTM D-4060. Wearing index (Abrading wheel: CS-10 & Load: 1.10 lb (0,5 kg))	500 Cycles
	1.000 Cycles
	0,024
	0,025
Resistance to severe chemical attack, EN 13529 (Reduction in Shore hardness)	Class I: G-1 (2%), G-9 (3%), G-10 (4%), G-11 (3%) Class II: G-1 (3%), G-9 (5%), G-10 (6%), G-11 (4%)
Chemical resistance. - Salt spray cycling (1500 hours) - Industrial detergent - Sea water	No changes No changes No changes
Slip/skid resistance value, UNE-ENV 12633	Class 3
Suitability for contact with potable water: RD 140/2003	Approved
Suitability for contact with water-based foods: European Directive 2000/72/CE	Approved
Consumption*	
Primer coat, lb/ft ² (kg/m ²)	0.04 (0,20)
Successive coats, lb/ft ² (kg/m ²)	0.04-0.05 (0,20-0,25)
	0.08 (0,4) anti-slippery

* These figures are for guidance only and may vary depending on porosity, texture, substrate conditions and application method. Perform a preliminary test on-site to ascertain the total consumption exactly.

