

## TWO-PACK, SELF-PRIMING POLYURETHANE

### DESCRIPTION

POLYURETHANE PL1 is a high performance, high-build, two-pack HDI cured polyurethane coating.

### RECOMMENDED FOR

Interior & exterior applications on concrete, metal structures, above ground and underwater tanks, high-traffic floors exposed to industrial or marine atmospheres, steel, blast cleaned steel or wheel-abraded steel, and wood.

### KEY FEATURES

- UV resistance
- Non-yellowing
- Resistant to water
- Resistant to highly aggressive external exposure
- Excellent anti-corrosive properties
- Self-priming
- Outstanding durability
- Resistant to splashes of mild chemical
- Resistant to acids
- Resistant to hot saline water (salty water)

### PHYSICAL PROPERTIES

<b>Solvent Type</b>	Moisture free PU thinner	
<b>Finish Type</b>	Full gloss finish	
<b>Solids (volume)</b>	64% as supplied 48% diluted with 25% thinner 45% diluted with 30% thinner	
<b>Solids (weight)</b>	73% as supplied	
<b>Spreading rate by Roller</b>	8m <sup>2</sup> /L. wet film thickness 125 microns with 25% dilution	
<b>Spreading rate by Spray</b>	6.6m <sup>2</sup> /L. wet film thickness 150 microns	
<b>Pot life</b>	1 hour at 20 °C	
<b>Average Dry Time</b>	Touch-dry in 1 hour - Full cure after 3 days	
<b>Recoat</b>	After 3 hours at 20 °C / After 2 hours at 30 °C	
<b>Dry Film Thickness</b>	60-70 microns depending on application method and surface porosity	
<b>Density (A + B)</b>	1.32 ±0.02 g/cm <sup>3</sup> for white base 1.17 ±0.02 g/cm <sup>3</sup> for W1 base 1.05 ±0.02 g/cm <sup>3</sup> for N base	
<b>Dilution</b>	25% with PU thinner for roller application / 30% with PU thinner for spray application	
<b>Abrasion</b>	CS17 wheels, 1000g weights, 500 cycles. Weight loss: 70mg	
<b>Hardness</b>	3H-4H	Based on ASTM D3363
<b>Adhesion</b>	>3.5MPa (concrete fracture)	Based on ASTM D4541
<b>Color</b>	White and Clear Bases	
<b>VOC</b>	355g/L as Per EPA Method 24	

# TWO-PACK, SELF-PRIMING POLYURETHANE

## CHEMICAL RESISTANCE / 24 HOUR OPEN SPOT TEST BASED ON ASTM D 1308-2

10% Hydrochloric Acid	No Effect
10% Sulfuric Acid	No Effect
10% NaOH	No Effect
Saturated Sugar Solution	No Effect
Saturated Salt Solution	No Effect
Ethanol	No effect
Motor Oil	No Effect
Gasoline	No Effect
Xylene	Minor spot
Isobutanol	No effect
Clorox	No Effect

## MPI STANDARDS COMPLIANCE

Complies with MPI #72 polyurethane, two component, pigmented, gloss

## SURFACE PREPARATION

All surfaces must be cured, clean, dry, and free from dirt, dust, rust, stains, grease, oil, mildew, wax, efflorescence, bond-breakers and other contaminants. Remove all loose, peeling, or chalky paint by sanding, scraping, or any other appropriate methods. Repair all cracks, holes, and other surface imperfections with a suitable patching material. Repaired surfaces should then be sanded smooth and dusted clean. Due to the high resin content, it is important to prime with a suitable primer.

New plaster or masonry surfaces must be allowed to cure (28 days) before applying base coat. Cured plaster should be hard, have a slight sheen and a maximum pH of 10. A soft, porous or powdery plaster indicates improper cure. Never sand a plaster surface; knife off any protrusions and prime plaster before and after applying patching compound. Poured or pre-cast concrete with a very smooth surface should be etched or abraded to promote adhesion, after removing all form release agents and curing compounds. Remove any powder or loose particles.

**CAUTION:** Scraping or sanding surfaces of older buildings may release dust containing lead or asbestos. **EXPOSURE TO LEAD OR ASBESTOS CAN BE VERY HAZARDOUS TO YOUR HEALTH.** Always wear appropriate personal protective equipment during surface preparation and finish cleanup of any residues by water-washing all surfaces.

## APPLICATION CONDITIONS

Do not apply at temperatures below 5 °C or when rain is expected.

## APPLICATION METHOD

Stir well Components & wait for 15 minutes before applying the product. Easy to apply by brush, roller or airless spray. Thinner should be added after mixing the components. Too much solvent results in lower sag resistance & slower cure. Applications should be in accordance with BS6150 & BS5493 standards.

For Roller application, dilute at 25%

For spraying use 2 bar pressure with a 1.4-1.7mm nozzle.

**DO NOT DIVIDE OR USE HALF OF THE PRODUCT. ONCE THE PACK HAS BEEN OPENED, IT SHOULD NOT BE CLOSED BACK. YOU SHOULD BE COMMITTED TO USING THE PRODUCT.**

## PACK SIZE

	White/WO	WI	N	Hardener
1 US Quart (kg)	1.22	0.91	0.74	0.15
1US Gallon (kg)	3.65	2.73	2.23	0.45

# TWO-PACK, SELF-PRIMING POLYURETHANE

---

## **SHELF LIFE**

- Hardener: 12 months from the date of production.
- Base: 24 months from the date of production.

## **STORAGE AND HANDLING**

Care should be taken to avoid spillage. Product should be stored in a dry area and protected from freezing. Extreme temperatures may cause paint to become unusable. For example: freezing and thawing may cause paint to gel, and high heat may cause solid skin to form.

## **SAFETY**

Use under well ventilated conditions. Do not breathe or inhale spray mist or sanding dust. Avoid skin contact; spillage on the skin should immediately be removed with suitable cleanser, soap and water. In case of eye contact, flush immediately with water for at least 15 minutes and seek medical attention immediately. If you have trouble breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical attention immediately.

## **CLEANING**

Remove as much leftover product as possible from the application equipment before cleaning. Clean equipment immediately after use with paint thinner. Do not empty product into drains or watercourses. Wash hands after use in warm soapy water.

## **DISCLAIMER**

Product batches are subject to stringent quality control checks in conformity with ISO 9001:2015, Certificate LB18/234269.

The information submitted in this manual is correct to the best of our knowledge & experience. No liability whatsoever can be accepted based on the information supplied herein.

Handwritten signature and notes in Arabic script.

# FILLWELL

## SOLVENT-FREE EPOXY FILLER

### DESCRIPTION

A specially designed three-part solvent-free epoxy filler.

### RECOMMENDED FOR

Designed to fill imperfections and irregularities in concrete walls prior to over coating with epoxy top coats. SX2 FILLWELL is suitable for interior and exterior areas under strict hygiene control by providing crack-resistant joints with low permeability to water and liquids.

### KEY FEATURES

- Hygienic properties
- High strength
- No shrinking
- Waterproof
- Excellent chemical resistance

### PHYSICAL PROPERTIES

<b>Solvent Type</b>	Solvent free
<b>Joint width</b>	2 to 20 mm
<b>Coverage</b>	Dependent on the size of tile, joint width and joint depth $Coverage = (L+B) \times W \times D \times 2.0 / (L \times B)$ L = length of tile W = width of tile B = breadth of tile D = depth of joint
<b>Pot life</b>	20 minutes
<b>Time to Traffic</b>	24 hours
<b>Full cure</b>	7 days
<b>Adhesion</b>	> 4 N/mm <sup>2</sup> based on ASTM D 4541 (concrete failure)
<b>Tensile Strength</b>	19.8 N/mm <sup>2</sup> based on ASTM C307-03
<b>Flexural Strength</b>	28.0 N/mm <sup>2</sup> based on ASTM C580-02
<b>Water Absorption</b>	0.01% ASTM C-413
<b>Bond Strength to Concrete</b>	30.0 MPa based on ASTM C-882
<b>Bond Strength to Steel</b>	26.0 MPa based on ASTM C-882
<b>Thermal Compatibility</b>	Passes
<b>Density</b>	Approx. 1.7 g/cm <sup>3</sup>
<b>Color</b>	Beige
<b>VOC</b>	< 100 g/l as Per EPA Method 24

# FILLWELL

## SOLVENT-FREE EPOXY FILLER

### SURFACE PREPARATION

Recommended surface preparation should follow the guidelines of the International Concrete Repair Institute (ICRI). Key to the guidelines is ICRI's Concrete Surface Profile (CSP) classifications, a system of ten distinct textures ranging from CSP1 (nearly flat) to CSP10 (extremely rough).

#### Most common conditions on site:

##### Laitance

Laitance is the weak, milky layer of cement and sand that rise to the concrete surface as a result of premature finish or troweling. If a coating is applied directly to the laitance layer, the floor traffic will cause disbanding of the coat.

##### Contaminations

Old concrete floors can be contaminated by oil, grease, chemicals etc. Check the surface for dark patches that indicate contamination. Spray water on it to see if it absorbs the water. If water stays on the surface, then it indicates contamination, and must be removed by concrete cleaner or degreaser.

##### Porous concrete

The common procedure is to sand and apply a primer that penetrates the substrate well. In cases where a high performance is needed, it is possible to shot-blast or scarify.

##### Polished concrete and non-porous construction materials

It is essential to apply proper primers. For high-performance systems such as those applied in hygienic areas, shot blasting, scarifying or grinding is necessary.

##### Well-attached old paint

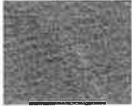

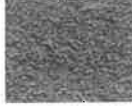
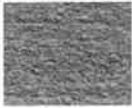
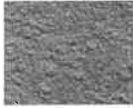



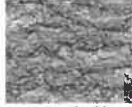
Should be sanded in order to ensure good adhesion.

##### Badly-attached old paint

Remains of badly-attached, old materials must be removed as these can cause detachment.

##### Damp

Surfaces that have problems with dampness require a system that permit vapor permeability. If they don't comply with these requirements, there will be an increased risk that the flooring will blister or detach. For a coating to bond properly, the concrete surface must be sound, clean and free from surface defects and dryness. The surface should be properly roughened to establish a good mechanical bond.

CONCRETE SURFACE PROFILE (CSP) CLASSIFICATIONS & RECOMMENDATIONS			<p>The CSP chart is used as a visual representation of desired concrete surface textures, roughness and general appearance. The guideline designates each CSP classification as a suitable base for specific coating types and thicknesses.</p> <p>It also describes the method(s) or equipment typically used to achieve the texture according to the CSP classification.</p>
<p>CSP-1 Acid Etched</p> 	<p>CSP-2 Grinding</p> 	<p>CSP-3 Light Abrasive Blast</p> 	
<p>CSP-4 Medium Blast</p> 	<p>CSP-5 Medium/Heavy Blast</p> 	<p>CSP-6 Heavy Blast</p> 	
<p>CSP-7 Heavy Shotblast</p> 	<p>CSP-8 Extreme Shotblast</p> 	<p>CSP-9 Extreme Shotblast</p> 	
0 to 75 microns			CSP1
100 to 300 microns			CSP2 – CSP3
1000 to 3000 microns			CSP3 – CSP4
Above 3000 microns			CSP3 – CSP4 – CSP5

# FILLWELL

## SOLVENT-FREE EPOXY FILLER

	CSP1 PROFILE	CSP2 PROFILE	CSP3-CSP7 PROFILES
Method	Acid etching	Grinding	Shot Blasting
<b>Notes</b>	Diluted hydrochloric acid is applied liberally onto the floor by a watering can or an acid-proof manual spray pump.  This method does not remove surface contaminants such as oil and grease, which must be removed before the etching process.	A diamond grinder uses horizontally-rotating discs to level, smooth and clean the concrete slab surface.  This method carries a low surface damage risk.	A dust-free technique that removes, cleans and achieves the desired profile of the surface in a single step. Thousands of steel shot particles are propelled onto the surface, removing the top layer and contaminants on the concrete surface  This method carries a low surface damage risk.

### APPLICATION CONDITIONS

Application can only proceed at temperatures above 10°C, and relative humidity below 75%. Drying data are given on the assumption that proper ventilation is provided. At higher temperatures epoxy will cure faster than normal.

### APPLICATION METHOD

#### Mixing

Mix by adding the hardener to the resin and then stir in the grout until a smooth, well-mixed paste is obtained. Mixing by use of a slow speed drill is preferred.

#### Grouting

Apply to the joints starting from the deepest part to avoid trapping air. It is advisable to tape joint sides to keep tiles free of grout and grout in one direction one day, completing the grout in the opposite direction the following day.

Note: After grouting, any surplus material should be removed before it sets by use of damp cloths, xylene or thinner.

#### PACK SIZE

- SX2 Base: 1 Kg
- SX2 Quartz: 3 Kg
- SX2 hardener: 0.61 Kg

#### SHELF LIFE

24 months from the date of production if stored in unopened containers according to manufacturer's instructions.

#### STORAGE AND HANDLING

Store under cover; clear of the ground, on pallets protected from rainfall. Avoid excessive compaction. Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging.

#### SAFETY

Use under well ventilated conditions. Do not breathe or inhale spray mist or sanding dust. Avoid skin contact; spillage on the skin should immediately be removed with suitable cleanser, soap and water. In case of eye contact, flush immediately with water for at least 15 minutes and seek medical attention immediately. If you experience difficulty breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical attention immediately.

#### CLEANING

Tools and equipment must be cleaned immediately after use with solvent.

# **SX2 FILLWELL**

## **SOLVENT-FREE EPOXY FILLER**

---

### **DISCLAIMER**

Product batches are subject to stringent quality control checks in conformity with ISO 9001:2008, Certificate CH12/1128.

The information submitted in this manual is correct to the best of our knowledge & experience. No liability whatsoever can be accepted on the basis of the information supplied herein.

APoxy اس اس شفاف

## PRIMEWELL

### CLEAR, SOLVENT BASED, CONCRETE EPOXY PRIMER

#### DESCRIPTION

SX0 Primewell is a transparent, two-component 2-pack, solvent-based, clear, epoxy primer designed to penetrate deeper into the concrete pores in order to achieve a better mechanical bond between the substrate and the epoxy coating.

#### RECOMMENDED FOR

Sealing and saturating well-cleaned, properly prepared porous concrete surfaces to insure the best possible adhesion and endurance of subsequent epoxy base coats.

#### KEY FEATURES

- Seals absorbent concrete substrates
- Improves adhesion of epoxy coats to concrete
- Reduces bubbles and pinholes formation
- Allows epoxy base coat to achieve a higher dry film thickness
- Allows epoxy base coat to achieve coating uniformity
- Convenient long pot-life
- No dilution needed

#### PHYSICAL PROPERTIES

<b>Solvent Type</b>	Solvent based
<b>Finish Type</b>	Glossy based on ASTM D523
<b>Dry Film Thickness</b>	Starting at 20 to 40 microns depending on application technique
<b>Spreading Rate</b>	10 - 12 sqm / Kg / Coat depending on surface condition and application technique
<b>Flash point</b>	Base 27°C, Hardener 27°C
<b>Pot Life</b>	180 minutes
<b>Recoat</b>	After 3 hours, before 24 hours
<b>Full Cure</b>	7 days
<b>Thinner</b>	None, clean with super thinner
<b>Adhesion</b>	> 8 N/mm <sup>2</sup> based on ASTM D 4541 (concrete failure)
<b>Flexibility</b>	No cracks at 1/8" conical mandrel ASTM D 522
<b>Density</b>	Approx. 1.0 g/cm <sup>3</sup>
<b>Solids</b>	Approx. 40% by volume
<b>Viscosity</b>	0 – 500 cP (Spindle 2/ Speed 100)
<b>Color</b>	Transparent
<b>VOC</b>	635 g/L as Per EPA Method 24



# PRIMEWELL

## CLEAR, SOLVENT BASED, CONCRETE EPOXY PRIMER

### SURFACE PREPARATION

Recommended surface preparation should follow the guidelines of the International Concrete Repair Institute (ICRI). Key to the guidelines is ICRI's Concrete Surface Profile (CSP) classifications, a system of ten distinct textures ranging from CSP1 (nearly flat) to CSP10 (extremely rough).

#### Most common conditions on site:

##### Laitance

Laitance is the weak, milky layer of cement and sand that rise to the concrete surface as a result of premature finish or troweling. If a coating is applied directly to the laitance layer, the floor traffic will cause disbanding of the coat.

##### Contaminations

Old concrete floors can be contaminated by oil, grease, chemicals etc. Check the surface for dark patches that indicate contamination. Spray water on it to see if it absorbs the water. If water stays on the surface, then it indicates contamination, and must be removed by concrete cleaner or degreaser.

##### Porous concrete

The common procedure is to sand and apply a primer that penetrates the substrate well. In cases where a high performance is needed, it is possible to shot-blast or scarify.

##### Polished concrete and non-porous construction materials

It is essential to apply proper primers. For high-performance systems such as those applied in hygienic areas, shot blasting, scarifying or grinding is necessary.

##### Well-attached old paint

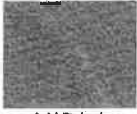
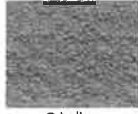
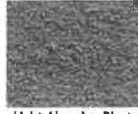
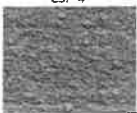
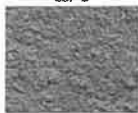

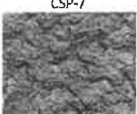
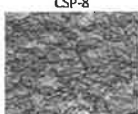

Should be sanded in order to ensure good adhesion.

##### Badly-attached old paint

Remains of badly-attached, old materials must be removed as these can cause detachment.

##### Damp

Surfaces that have problems with dampness require a system that permit vapor permeability. If they don't comply with these requirements, there will be an increased risk that the flooring will blister or detach. For a coating to bond properly, the concrete surface must be sound, clean and free from surface defects and dryness. The surface should be properly roughened to establish a good mechanical bond.

CONCRETE SURFACE PROFILE (CSP) CLASSIFICATIONS & RECOMMENDATIONS			<p>The CSP chart is used as a visual representation of desired concrete surface textures, roughness and general appearance. The guideline designates each CSP classification as a suitable base for specific coating types and thicknesses.</p> <p>It also describes the method(s) or equipment typically used to achieve the texture according to the CSP classification.</p>
<p>CSP-1 Acid Etched</p> 	<p>CSP-2 Grinding</p> 	<p>CSP-3 Light Abrasive Blast</p> 	
<p>CSP-4 Medium Blast</p> 	<p>CSP-5 Medium/Heavy Blast</p> 	<p>CSP-6 Heavy Blast</p> 	
<p>CSP-7 Heavy Shotblast</p> 	<p>CSP-8 Extreme Shotblast</p> 	<p>CSP-9 Extreme Shotblast</p> 	
0 to 75 microns	CSP1		
100 to 300 microns	CSP2 – CSP3		
1000 to 3000 microns	CSP3 – CSP4		
Above 3000 microns	CSP3 – CSP4 – CSP5		

# PRIMEWELL

## CLEAR, SOLVENT BASED, CONCRETE EPOXY PRIMER

	CSP1 PROFILE	CSP2 PROFILE	CSP3-CSP7 PROFILES
Method	Acid etching	Grinding	Shot Blasting
<b>Notes</b>	Diluted hydrochloric acid is applied liberally onto the floor by a watering can or an acid-proof manual spray pump.  This method does not remove surface contaminants such as oil and grease, which must be removed before the etching process.	A diamond grinder uses horizontally-rotating discs to level, smooth and clean the concrete slab surface.  This method carries a low surface damage risk.	A dust-free technique that removes, cleans and achieves the desired profile of the surface in a single step. Thousands of steel shot particles are propelled onto the surface, removing the top layer and contaminants on the concrete surface  This method carries a low surface damage risk.

### APPLICATION CONDITIONS

Application can only proceed at temperatures above 10°C, and relative humidity below 75%. Drying data are given on the assumption that proper ventilation is provided. At higher temperatures epoxy will cure faster than normal.

### APPLICATION METHOD

- Mix the SX0 PrimeWell resin component before adding the hardener.
- Add the hardener component into the resin and mix at slow speed for a few minutes. Mixing at slow speed reduces the chances of bubble formation in the epoxy. Only mix the amount of epoxy that can be used within the specific pot life.
- Stir well both components and apply with an epoxy roller.

Primer / Filler	Thinner	Notes
<b>SX2 FillWell if needed</b>	None	All areas should be divided accordingly to the intended consumption / thickness

### PACK SIZE

	Base	Hardener
<b>1 US Gallon (kg)</b>	3.0	0.75
<b>1 US Drum (kg)</b>	15	3.75

### SHELF LIFE

24 months from the date of production.

### STORAGE AND HANDLING

Care should be taken to avoid spillage. Product should be stored in a dry area and protected from freezing. Extreme temperatures may cause paint to become unusable. For example: freezing and thawing may cause paint to gel, and high heat may cause solid skin to form.

### SAFETY

Use under well ventilated conditions. Do not breathe or inhale spray mist or sanding dust. Avoid skin contact; spillage on the skin should immediately be removed with suitable cleanser, soap and water. In case of eye contact, flush immediately with water for at least 15 minutes and seek medical attention immediately. If you experience difficulty breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical attention immediately.

### CLEANING

Remove as much leftover product as possible from the application equipment before cleaning. Clean equipment immediately after use with mineral spirits or paint thinner. Do not empty product into drains or watercourses. Wash hands after use in warm soapy water.

# **PRIMEWELL**

## **CLEAR, SOLVENT BASED, CONCRETE EPOXY PRIMER**

---

### **DISCLAIMER**

Product batches are subject to stringent quality control checks in conformity with ISO 9001:2008, Certificate CH12/1128.

The information submitted in this manual is correct to the best of our knowledge & experience. No liability whatsoever can be accepted on the basis of the information supplied herein.

# LIGHT REFLECTIVE

## LIGHT REFLECTIVE ADDITIVE

زنگنه 8.4

### DESCRIPTION

Light reflective are solid, spherical glass beads for use with marking materials such as road marking paint.

### RECOMMENDED FOR

To be used as a drop agent on road marking paints to increase road safety in an economical manner. Thanks to the retro-reflective action at night, a vehicles headlight beam is returned to the driver's eye. The microspheres not only multiply the visibility of the markings at night, but also increase the markings durability in general.

### PHYSICAL PROPERTIES

<b>Grade</b>	800
<b>Hardness</b>	6-7 Moh Scale
<b>Specific Weight</b>	2.5g/cm <sup>3</sup>
<b>Bulk Density</b>	1.6 kg/Lt
<b>Free Silica</b>	None
<b>Shape</b>	80% Round
<b>Reflectivity</b>	Nd ≥ 1.5 for coated & un-coated

### APPLICATION CONDITIONS

Do not use or apply at temperatures below 5°C or when rain is expected.

### APPLICATION METHOD

Apply glass beads on wet coat of paint

### PACK SIZE

- 1.2 kg

### STORAGE AND HANDLING

Care should be taken to avoid spillage. Store in a dry area.

### DISCLAIMER

Product batches are subject to stringent quality control checks in conformity with ISO 9001:2008, Certificate CH12/1128.

The information submitted in this manual is correct to the best of our knowledge & experience. No liability whatsoever can be accepted on the basis of the information supplied herein.