



ShieldPatch™

POLEKOTE

Advanced Brush Grade Urethane – Pail Kit

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Product Description

Polekote is a slow gel time (~15 Minutes) two component, hand applied castor-based polyurethane ideal for patch repair of high-performance urethanes and polyurea, or coating steel or concrete poles, pipelines, and piles to protect them from in-ground corrosion. Its excellent electrical properties also make it a good option for repairing and restoring damaged cable sheathes. It has excellent adhesion, abrasion resistance, chemical resistance and high mechanical strength.

Technical/Performance Data

Hardness, ASTM D-2240	65 Shore D
Mix Ratio by Volume	100A:28B
Gel/Set Time	~15 min @30°C ambient
Tack-free Time	~45 min (temperature dependant)
Maximum Recoat Window	24 Hours
Taber Abrasion Resistance; C-17,1000cycles, 1kg	75 mg
Tensile Strength ASTM412-C	14 MPa
Elongation, ASTM412-C	65-70%
Tear, ASTM 624-86	55 kN/m
Service Temperature	-40°C to 90°C
Volume resistivity	8x10 ¹⁴ Ohm.cm
Dielectric Strength	>20 kV/mm

Benefits

Application

This product is supplied in small pails, which allow easy storage, minimal wastage, hand mixing and ease of application.

Electrical Properties

The excellent electrical properties of this product prevent debonding from impressed or stray currents and galvanic currents and insulate electrical hazards.

Toughness and Flexibility

The high tensile strength and good elongation of this product provides protection from mechanical damage, abrasion, and resistance to puncture and compression.

Increased Productivity and Economy

This product may be applied to thicknesses up to 1mm per coat when reinforcement is used and is rain insensitive once tack free.

Safety

This product contains no volatile or flammable solvents. This reduces hazards during transport, storage, and application.

Application Areas

- ✓ Structural Steel
- ✓ Utility Poles
- ✓ Fertilizer Plants
- ✓ Warehouse Baseplates
- ✓ Mining Operations
- ✓ Marine Environments
- ✓ Piles
- ✓ Pipelines
- ✓ Polyurea/Urethane Repair & Penetration Sealing
- ✓ Paper & Pulp Mills
- ✓ Parking Garages
- ✓ Walkways and Balconies
- ✓ Water and Wastewater Treatment
- ✓ Industrial and Manufacturing Facilities
- ✓ Cable Sheath Repair

Features

- ✓ Excellent thermal stability
- ✓ Zero VOC
- ✓ No toxic vapours
- ✓ Odourless
- ✓ 100% Solids
- ✓ Seamless
- ✓ Flexible at low temperatures
- ✓ Non-reactive
- ✓ Good chemical resistance
- ✓ Can be used without primer in some applications (particularly steel and cable repair)
- ✓ Used with or without reinforcement in transitional areas.

Typical Wet Properties

Material Property	Component A (Isocyanate)	Component B (Resin)
Density (kg/L)	1.24	1.05
Viscosity (Cps @ 21°C)	350	10,000
Mix ratio (by volume)	100:28	
Solids (mixed) by volume	100%	
Flash Point (Pensky Martens Closed Cup)	>145°C	
Theoretical Coverage	1L = 1mm thick over 1m ²	

Application Guidelines

This coating is designed for application by brush, trowel, or roller.

It is imperative that the product is thoroughly mixed prior to application. Mix in small quantities, Mix 'A' and 'B' components until a homogenous mix is achieved. Recommendation is to use a set of scales and measure out half of the product weight. Add the 'A' side to 'B' side in a separate bucket or container. Mix the components using a paint stirrer for 40-60 seconds. Apply the material directly to the surface to be coated using a trowel or brush. Recommendation is to work with multiple personnel to apply the product due to the 15-minute pot life.

Surface Preparation

Ensure the surface is free of contaminants like mill scale, corrosion by-products, oil, grease, and salts.

Whip blast or hand abrade the surface with 100-grit sandpaper to increase adhesion and dull the shine of the galvanizing. Wire brush on a grinder is also recommended.

Clean the surface with acetone or similar solvent using a lint-free rag, and let it dry before application.

Apply masking tape 10mm beyond the area to be coated for a neat edge finish. Remove the tape 10 minutes after coating.

Partial Encapsulation: Clean the surface to an SA 2.5 standard with a minimum surface profile of 50 microns.

For Polyurea or Polyurethane Repair:

Roughen the surface with 40-80 grit media and remove chalky areas.

Overlap 100-300mm over the existing coating based on the exposure level. Leave a 5-10mm uncoated demarcation around the prepared area.

Application Temperatures

Minimum recommended material and substrate temperatures are 20°C and -10°C respectively. Maximum recommended substrate temperature is 50°C. Maximum recommended material temperature is 40°C. Wider temperature windows can be achieved but please consult your technical representative for specific advice.

Cure Time and Recoat Time

Development of a full cure may take up to 24 hours. Material may be recoated when tack-free. Old, sound coatings should be lightly abraded to remove any oxidized material and cleaned thoroughly prior to recoat. Consult your technical representative for options regarding treatment of day joints and coating over cured product.

Colours

Standard Black and Grey. Custom colours can be produced on request but may require additional lead time, minimum order quantities and price premium. Contact your local distributor for availability. Black tends to chalk slightly on the surface with UV exposure, other colours will tend to yellow or darken over time with UV exposure, but the coating will maintain its physical properties.

Polekote can be top coated for a colour-fast finish if required.

System Specification

Primer

Refer to ShieldCrete® technical representatives and distributors for recommendations based on your specific application. In most cases, no primer is required, even on difficult to stick to surfaces. In high abrasion polyurea or polyurethane repair environments, use ShieldPrime primer.

Recommended Thickness

Recommended minimum thickness for regular corrosion protection is 0.5mm when not exposed to abrasion or full UV exposure. For general corrosion and abrasion resistance, the recommended minimum is 1mm. Recommended minimum thickness for high corrosion and chemical resistance duty is 2mm. Contact your local distributor for application specific recommendations.

Number of Coats

This product can be applied in thicknesses up to approximately 1mm in one monolithic coat (depending on temperature, reinforcement, and surface orientation, 0.5mm recommended without reinforcement). To build to specification, allow just enough cure time for the first coat to become firm, then apply the next coat. The use of reinforcement aids in the build of film thickness as well as increasing longevity. Do not exceed recommended recoat windows.

Additional coats should be applied as soon as possible after the preceding coat has gone tack-free (~45-60mins), but no longer between coats than the specified recoat window.

Topcoat

An aliphatic polyurea, polyurethane, polyaspartic polyurea or other topcoat may be required for some applications, particularly where colour stability is required (this product is UV stable, but not colour stable). Contact your distributor for a range of options. The topcoat shall be applied as soon as possible following the final coat reaching tack-free status, with a maximum time between coats as specified by the recoat window of this product.

Storage and Handling Precautions

Storage at room temperature (20-25°C) also provides a convenient viscosity for handling. Storage at low temperatures (below 10°C) is not recommended because it may lead to some crystallisation: this material must be protected from frost.

If crystallization does occur, it is recommended to discard the material and replace it with a new batch.

Storage temperatures above 50°C are not recommended since they can accelerate the formation of insoluble solids and increase the viscosity over extended storage intervals.

Under the recommended storage conditions and in properly sealed containers, the components have a minimum storage life of 24 months. Blister packs and unused material should be disposed of as general waste once the material is allowed to harden.

Packaging

Standard 3.5L kit.

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