

Product Description

Lockwell P-505 was specially designed for mineral processing, mining UG and bulk haulage with Industrial high wear fast return to service as a key property of P-505. Due to its unique gel time (Tack free within 5 seconds) it can be applied to vertical surfaces (overhead) with no slump or sag applied at 500 microns per pass to any desired thickness. P-505 performs well in immersion and highly abrasive environments, as well as general primary and secondary containment in many industrial sectors. P-505 features include a hard surface skin reducing carry back in bulk haulage avoiding hang-up.

P-505 chemical resistance, high build, corrosion protection and waterproofing features with excellent thermal stability and elongation makes 505 the work horse of hard wearing industrial thick film coatings.

Lockwell P-505 fast cure properties allow immediate return to service, 100% solids, flexible, aromatic, two component pure polyurea with low sag and high build. P-505 is relatively insensitive to moisture and temperature during full cure and can even be exposed to rain within minutes of application with no adverse effect.

Features

- Low sag and high build
- Immediate return to service
- High abrasion resistance
- Excellent thermal stability
- Zero VOC
- No toxic vapors
- Odorless
- 100%Solids
- Seamless
- Low water vapor permeability
- Flexible at low temperatures
- Non-reactive
- Good chemical resistance
- Can be used without primer in some applications (particularly steel)
- Excellent abrasion resistance and carry back
- Used with or without reinforcement in transitional areas.

Application Area

- Mineral & Mining Facilities
- Bulk haulage bins and concentrate vessels
- Highly abrasive environments wet or dry
- Blast Mitigation
- Water and Waste Water Treatment
- Power Plants
- Refineries
- Fertilizer Plants
- Paper & Pulp Mills
- Primary Containment
- Secondary Containment
- Marine Environments
- Tidal applications
- Structural Steel Corrosion Protection
- Pipe protective coating
- Industrial and Manufacturing Facilities

Technical/ Performance Data

Hardness, ASTM D-2240-91	45-55 Shore D
Mix Ratio by Volume	1A : 1B
Gel/Set Time	2-3 seconds
Tack-free Time	5 seconds
Maximum Recoat Window	2 Hours
Taber Abrasion Resistance; C-17,1000 cycles, 1kg	10 mg
Tensile Strength ASTM D412	16.5-19.5 MPa
Elongation, ASTM D412	220% - 320%
Tear, ASTM D624-86	78-83 kN/m
Service Temperature (Dry)	-30°C to 120°C
Water Vapor Permeability	0.00036 perm-inch
Fire resistance (spread of flame, Class rating, etc.)	Class II UBC

Typical Wet Properties

Material Property	Component A (Isocyanate)	Component B (Resin)
Density (kg/L)	1.11	1.00
Viscosity (cps @ 21°C)	900	700
Mix ratio (by volume)	1 : 1	
Solids (mixed) by volume	100%	
Flash Point (Pensky Martens Closed Cup)	>93°C	
Theoretical Coverage	1L = 1mm thick over 1m ² .	

Application Guideline

Introduction

This coating is designed for application through heated, plural component, high pressure reactor spray equipment capable of supplying material at the spray gun at a minimum of 2000 psi spray pressure and material temperature of 60-80°C (depending on geographical location). Graco plural component reactors using impingement mix tips in plural component air and mechanical purge guns (air purge recommended) are typically used.

If there is any change in color or consistency of the material, the sprayer should stop immediately and troubleshoot the equipment. Filters should be checked periodically for any build-up of material.

Application Temperatures

Minimum recommended material and substrate temperatures are 24°C and 10°C respectively. Maximum recommended substrate temperature is 50°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 with Lockwell's intercoat primer IC-605

System Specification

Primer

Use Lockwell P-601 Concrete Epoxy Primer as the under layer primer.

Refer to Lockwell Systems technical representatives and distributors to verify specific application recommendations.

Recommended Thickness

Abrasion resistant : 3 mm min. thickness

Waterproofing : 1.5 mm min. thickness

Note: Contact your local distributor for application specific recommendations.

Number of Coats

This product can be applied in thicknesses from 1mm up to several cm in one monolithic coat. Do not exceed recommended recoat windows.

Sometimes two or more coats are applied using different colors as a visual wear indicator. The additional coats should be applied as soon as possible after the preceding coat has gone tack-free, but no longer between coats than the specified recoat window of 2 hours.

Note: Contact your distributor for reactivation requirements for coating over cured product.

Top Coat

An aliphatic polyurea or polyurethane, or polyaspartic polyurea topcoat may be required for some applications, particularly where color stability is required (this product is UV stable, but not colour stable). Contact your distributor for a range of options. The top coat 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

The Part A should be kept properly closed and stored indoors in a well-ventilated area under normal factory conditions. 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 crystallization: this material must be protected from frost. Drum heaters may be used with the heat setting at low.

The material should be agitated to uniformly distribute the heat. In no circumstances should the material be heated above 80°C during preconditioning.

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

Under the recommended storage conditions and in properly sealed containers, the components have nominal storage life of 12 months. If either component is opened and partially used, it should be purged with nitrogen or desiccated air and resealed or refilled into smaller containers to their maximum volume.

Packaging

Standard 400L kits, 2 x 200L Drums per kit. Other sizes may be available on request.

Chemical Resistance

The following technical information and data should be considered representative or typical only and should not be used for specification purposes. Contact Lockwell Systems technical representatives and distributors for specific recommendations for chemical resistance prior to specifying these products in this application type.

Acetic Acid (10%)	R	Phosphoric Acid (10%)	R
Ammonium Hydroxide (20%)	R	Potassium Hydroxide (10%)	R
Ammonium Hydroxide (50%)	RC	Potassium Hydroxide (20%)	RC
Hydraulic Fluid	R	Sodium Hydroxide (10%)	R
Hydrochloric Acid (10%)	R	Sodium Hydroxide (50%)	RC
Gasoline (unleaded)	R	Sulphuric Acid (15%)	R
Hydrogen Sulphide (gas)	R	Waste water	R
Diesel Fuel (Kerr-McGee)	C	Sea Water	R
Motor Oil, Brake Oil	RC	Water (Tap) @ 80°C	R

R - Resistant

RC - Slight surface change, discoloration with no loss of hardness

Additional Information – 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 with regard to the required processes and applications. This data sheet is provided free of charge and we do not accept any liability with regard to the above information or with regard to any verbal recommendation, except for cases where we are liable of gross negligence or false intention.