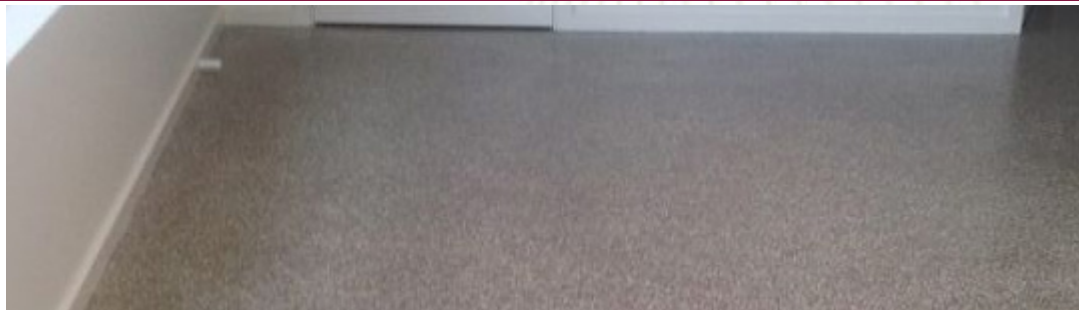




PRIMERS & SURFACE PREPARATION GUIDE





There are three responses
when looking at a coated
surface – yes, no, and WOW!

Wow is the one to aim for.

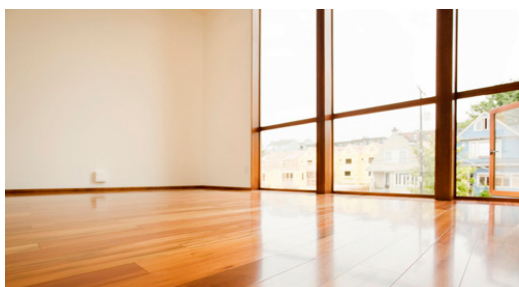


Era Polymers Pty Limited
Coatings Division

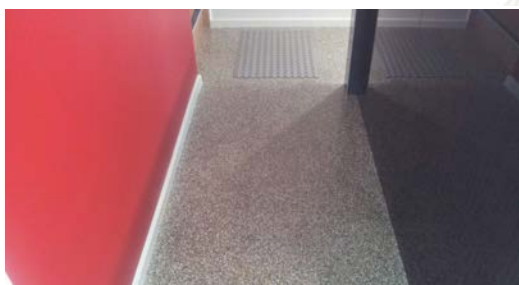
Introduction

Welcome to Era Polymers

“ 80% of all coatings failures can be directly attributed to inadequate surface preparation that affects coating adhesion; which is why surface preparation is extremely important.



When preparing any surface for coating either for protection or decorative reasons **surface preparation** is key to successful bonding and ensuring a good long lasting finish.



The coatings performance is directly affected by **surface preparation** carried out. It is estimated that as high as 80% of all coating failures can be directly attributed to inadequate surface preparation that affects coating adhesion; which is why surface preparation is extremely important.



Choosing the correct preparation method should ensure that the coating adheres to the substrate prolonging the service life of the coating system. Getting your surface preparation correct is the difference between failure and success!

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1

IMPORTANT NOTE

GETTING STARTED

Surface Preparation

Many surfaces; concrete, steel, wood etc. require coating systems to protect them from corroding in aggressive environments.

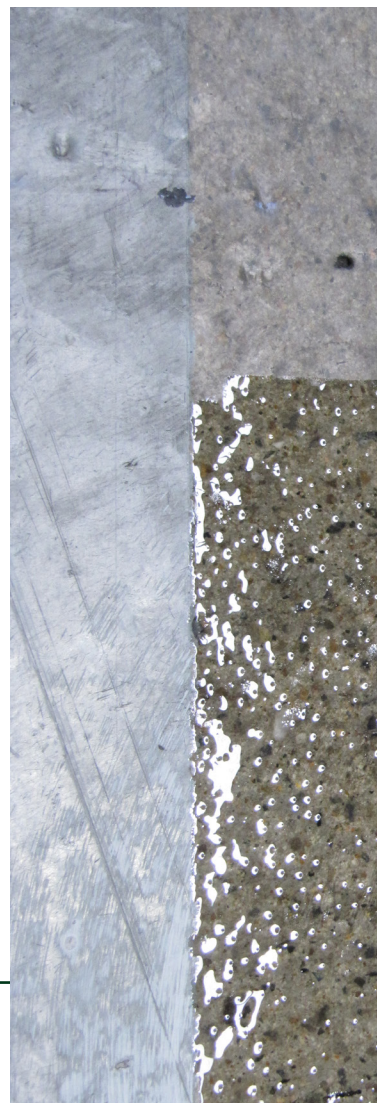
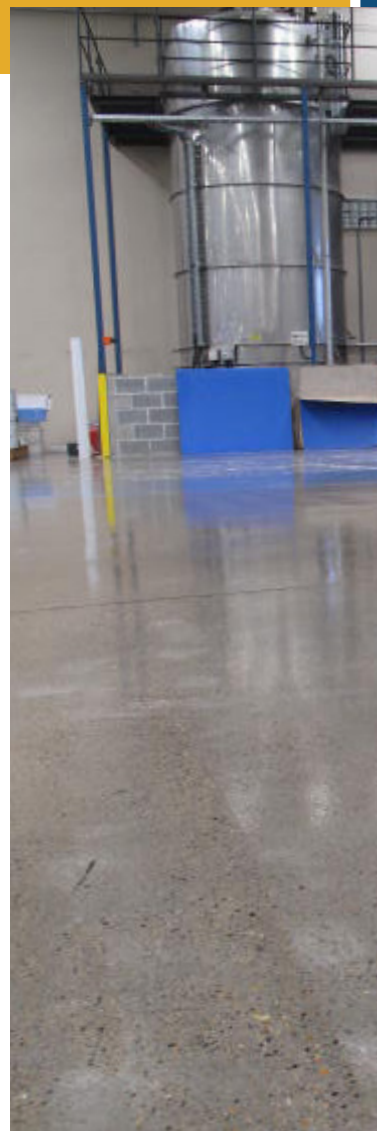
The procedures for surface preparation will vary depending on the type of substrate to be coated.

There are several factors that will influence your surface preparation methods:

- › Substrate
- › If substrate has been previously coated
- › Required bond strength
- › Environment
- › Coating system selected
- › Expected life of coating system
- › Surface contamination
- › Economic considerations

Regardless of the type of substrate you are coating, all surfaces, must be free from contamination such as paints, oils, dust, dirt, mill scale, rust, mould, release agents, mildew etc, they must also be clean and dry prior to application of the primer and subsequent top coats. Any contaminants may impair the adhesion of the required primer, resulting in the surfacing failing.

Good surface preparation equals good adhesion and a successful surface treatment.





2

Applying your Primer:

Mechanical & Chemical Keys for your Surfacing

Mechanical Key – Substrate & Primer

Generally a mechanical key is required for the primer to bond with the substrate this means the surface is not smooth but has a sandpaper type texture (a series of peaks and valleys) which allows the primer to adhere easily to the surface profile. It is important that the profile of the substrate is appropriate for the film thickness of the coating.

Chemical Key – Primer & Coating

The primer provides a protective coating to the substrate and gives a smooth surface for the top coating to be applied to. The primer and coating bond together chemically. Preparing Substrate for Primer Application



3

Methods for Removing Contaminants from Substrates for Surface Preparation

There are three basic methods for removing contaminants (see below). Depending on the initial condition of the substrate to be coated and whether a mechanical, chemical or combination key is needed, one of these methods may be sufficient or a combination of treatments may be required.

CHEMICAL CLEANING

A popular method for preparing metals, it includes treatments which etch the surface to form highly adhering oxides, or deposit complex inorganic coatings.

1



ABRASION

Methods such as shot blasting, sandblasting, jet blasting; where an abrasive medium is used to clean and etch a small profile into the surface to allow for both a chemical and mechanical key of the primer to the substrate.

2



DEGREASING

This is when surfaces are cleaned with either a hot alkali solution or solvent vapour; they are only suitable if the substrate is free of rust, paint and scale.

3



4

Guidelines to Successful Bonding

The following procedure is specifically suited to the preparation and subsequent priming of metal surfaces. A similar procedure is used for other substrates. Please contact **Era Polymers** for specific information.

SAND/GRIT BLAST TO CLASS 2.5

Steel and Cast Iron require abrasive grit blast to a “near-white metal” Class 2.5. (This is ideal for most non-immersion applications. Other substrates will require abrading to achieve some mechanical bonding to assist the chemical bond.)



DEGREASE

Wipe all surfaces with a suitable solvent to remove any traces of dirt or grease. Suitable solvents include MEK (methyl ethyl ketone), Acetone, Methylene Chloride.



PRIMING

It is very important to apply the primer as soon as possible after the surface has been prepared. This is to protect the freshly blasted surface as corrosion starts immediately after the surface is prepared and the primer alleviates this. Apply the primer to a clean, dry surface by brushing or spraying. The primer should be applied as a thin coat. If coloured, the appearance of the metal should be transparent and mottled.

Allow the primer to air dry for 30 – 60 minutes. It is important that during this time airborne contaminants do not settle on the surface as this could affect the adhesion of the topcoat.



APPLYING THE TOP COAT

Once the primer is cured, apply the polyurethane top coat. This should be applied on the same day as the surface was primed and within the maximum recoat time of the primer.

If the primer maximum recoat time has been exceeded, the surface should be solvent washed and re-primed with another thin layer of primer to re-activate the surface. This means the first layer provides an anti-corrosion barrier and a primed surface for the second layer to bond to.



CURING TIME FOR POLYURETHANE/POLYUREA TOP COAT

Generally, allow the topcoat to cure 2 to 3 days before service - 7 days if coated surface will be exposed to stringent environments.



Era Polymers - Primers

Metal Primers					
Product Name	Application	System	Mix Ratio	Typical Cure Time	Features
Erabond 6100FC	For bonding Sprayable PU to Metal: <ul style="list-style-type: none"> ➤ Steel ➤ Ductile Iron ➤ Galvanized Steel 	High Solids (68%) 2 Component Polyurethane	1:1 by volume	2-3 Hours @ 25°C	<ul style="list-style-type: none"> ➤ Excellent Chemical Resistance ➤ High Flexibility ➤ Impact Resistance ➤ Relatively Low Cost
Erabond Metal	For bonding Hot Cast PU to metal: <ul style="list-style-type: none"> ➤ Steel ➤ Iron ➤ Aluminium ➤ Manganese 	25% solids single component Phenolic	Single Component System. This system is also available in red.	1 Hour @ 100°C	<ul style="list-style-type: none"> ➤ Good Chemical Resistance ➤ Low Viscosity ➤ Can be brushed, dip or spray applied
Erabond CM	For bonding Sprayable PU and Cold Cast/Trowellable PU to metal: <ul style="list-style-type: none"> ➤ Steel ➤ Aluminium ➤ Galvanized Steel 	Low solids (18%) 2 Component Polyurethane	1:1 by weight	1-2 Hours @ 25°C	<ul style="list-style-type: none"> ➤ Excellent Chemical Resistance
Polyurethane Primers					
PR-1167	For bonding PU to PU	High Solids (60%) single component polyurethane	Single Component System	1-2 Hours @ 25°C	<ul style="list-style-type: none"> ➤ High Flexibility ➤ Impact Resistance
Concrete Primers					
Erabond Concrete	For bonding Sprayable PU to Concrete	High Solids (65%) single component polyurethane	Single Component System	1-2 hours @ 25°C	<ul style="list-style-type: none"> ➤ Low viscosity to promote good penetration of the concrete ➤ Dries to a hard polymer that helps prevent potential outgassing from the concrete into elastomeric top coat.
Erabond 2K Concrete	For bonding sprayable PU to Concrete	100% solids 2 component Epoxy	5:3 by volume	18-22 hours @ 25°C	<ul style="list-style-type: none"> ➤ No solvent ➤ Low viscosity for good concrete penetration ➤ Accredited to AS/NZS 4020 for potable water applications where the primer and top coat need to form a compliant system for potable water use

Era Polymers - TDS Extracts

Complete TDS documents available upon request.



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Erabond CM Primer

Polyurethane Primer

Complete document available upon request

TECHNICAL DATASHEET - Extract

ERABOND CM Primer is a two component solvented anti-corrosive primer for metal surfaces.

ERABOND CM Primer promotes adhesion to properly prepared aluminium, steel, and galvanized steel. ERABOND CM primer affords superior corrosion protection to properly prepared steel when used in conjunction with Erapol and Eraspray polyurethane elastomers.

Application

ERABOND CM Primer is best applied by siphon or pressure pot spray equipment. Airless spray equipment may be used, provided a maximum of 12.7µm DFT is applied.

ERABOND CM Primer is applied in a single wet pass with 50% overlap. Hold the gun at right angles to the surface approx. 20-30 cm away. Make even, parallel passes and spray approx. 90µm Wet Film Thickness (WFT) to achieve 9µm DFT. A thicker film is not required. The desired film thickness will be obtained when the film appearance is continuous, but mottled and translucent.

ERABOND CM primer is suitable for use in applications up to temperatures of 140°C (284°F)

Mixing and Curing Conditions

Isocyanate Prepolymer (A)	(pbv)	100
Polyol Curative (B)	(pbw)	100
Induction Time at 20°C	(mins)	15
Pot life at 25°C		8 hours. Do not use after this time has elapsed even if the mixture is still liquid.
Dry Film Thickness	(DFT)	6.35µm – 12.7µm Under no circumstances should ERABOND CM Primer be used at greater than 15µm DFT. The metal substrate should be visible under the applied primer.
Recoat Time 20°C		Allow ERABOND CM primer to air dry 30 minutes - 2 hours before applying topcoat.
Spread Rate		8.4m ² /L @ 12.7µm DFT 18.3 m ² /L @ 6.35µm DFT

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Erabond 6100FC Primer

POLYURETHANE FAST CURE PRIMER

TECHNICAL DATASHEET - Extract

Erabond 6100FC Primer is a high solids, 2 component urethane primer with outstanding adhesion to properly prepared steel, ductile iron and galvanized substrates. It is specially formulated to provide excellent anti corrosive properties and accept fast-set and standard-set polyurethanes.

Features

- Convenient 1:1 mix ratio
- Excellent adhesion to aged Polyurethane and Polyurea coatings
- Very good chemical resistance
- High flexibility and impact resistance
- Prevents undercutting
- Fast drying to aid applicator productivity

Physical characteristics

Mix Ratio (Volume)	1:1
Pot life @ 15°C (minutes)	40 - 45
Pot life @ 25°C (minutes)	30 - 35
Pot life @ 32°C (minutes)	15 - 20
Solids Content by Volume	55%
Solids Content by Weight	68%
Theoretical Coverage 1 Litre	10 m ² @ 50µ
Recommended Dry Film Thickness (DFT)	25µ - 75µ
Number of Coats required	1



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Erabond Metal

POLYURETHANE TO METAL PRIMER

TECHNICAL DATASHEET - Extract

ERABOND METAL is a high strength single coat primer system for bonding liquid urethanes to most metal substrates. Extensive evaluation has shown the adhesion of the **ERABOND METAL** primer is superior to many other primers currently used in the industry.

Application

Suitable for use on properly prepared metal substrates such as steel, iron, aluminium, and manganese.

Product Specification

Appearance	A red or clear liquid
Brookfield Viscosity at 25°C (cps)	150-250
Solids Content (%)	25
Flash point (°C)	5
Specific Gravity at 25°C	0.90
Theoretical Coverage	9m ² /Kg (10m ² /L)
Recommended DFT	0.06 - 0.12mm
	60 - 120µm
	2.4 - 4.7mil
Shelf Life	12 months
MEK content	<50%

Features

- High Performance
- Low Viscosity
- Single Component
- Can be Brush, Dip or Spray Applied
- Temperature Tolerant (-45°C – 180°C)
- Good Chemical Resistance



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Erabond Concrete

Concrete Primer

TECHNICAL DATASHEET - Extract

Erabond Concrete is a low viscosity, solvent based prepolymer primer for concrete.

Application

Erabond Concrete is suitable as a fast cure primer for concrete and concrete like substrates.

Product Specification

Appearance	Brown to amber coloured liquid
Brookfield Viscosity @ 25°C (cps)	20-100
Specific Gravity	1.02
% Solids	~ 62-68
Dry time @ 25°C (hours)	1.5-2.0
Topcoat application window	Within 12 hours of primer application

Benefits

- Fast drying
- Strong key to the substrate
- Low viscosity
- Deep penetration to the substrate
- Single component – (no mixing required)



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Erabond 2K Concrete

EPOXY PRIMER

TECHNICAL DATASHEET - Extract

Erabond 2K Concrete is a two component, solventless, epoxy primer for use on concrete, including outstanding adhesion to damp concrete.

Erabond 2K Concrete uses premium epoxy resins and curing agents to produce a low-viscosity, clear, yet tough and durable product.

Features

- Non-hazmat – solventless, non-corrosive, non - flammable product for cheaper, easier and faster transport
- Potable water approved under AS 4020
- Field-friendly – mix ratio tolerance and long storage life, combined with surface /moisture tolerance gives a truly field-friendly product
- Good tolerance of low temperatures
- Good overall chemical resistance, including 70% sulphuric acid
- Can be applied onto dry, damp or even wet surfaces, as it is completely moisture tolerant
- Clear formulation does not impact on colour of underlying aggregate or coating
- Clear, yet very durable
- Low viscosity, slow curing product ideal for sealing applications as it allows deep penetration to give a thorough seal
- Solventless means product can be applied in confined spaces with no need for ventilation equipment
- 100% solids – means long shelf life (do not have to use all at once) and no shrinkage in the coating film



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Excellence in Polyurethane Chemistry

The information on surface preparation is of a general nature and is supplied without recommendation or any guarantees. Successful application depends on the conditions in which the products are applied. The contractor must evaluate their own surface preparation requirements, primers and surfacing systems.

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