



PRIMERS & SURFACE PREPARATION GUIDE





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

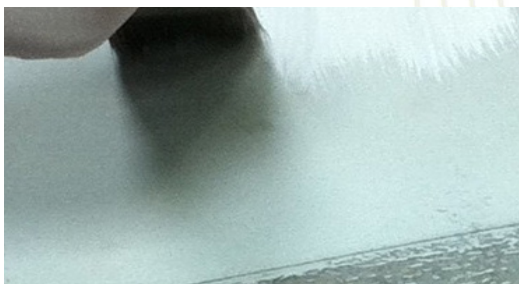
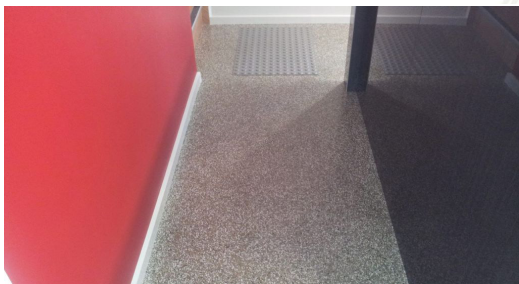
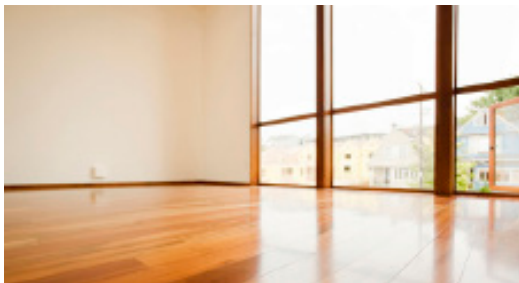
Wow is the one to aim for.



Era Polymers Pty Limited
Coatings Division

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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GETTING STARTED

Surface Preparation

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

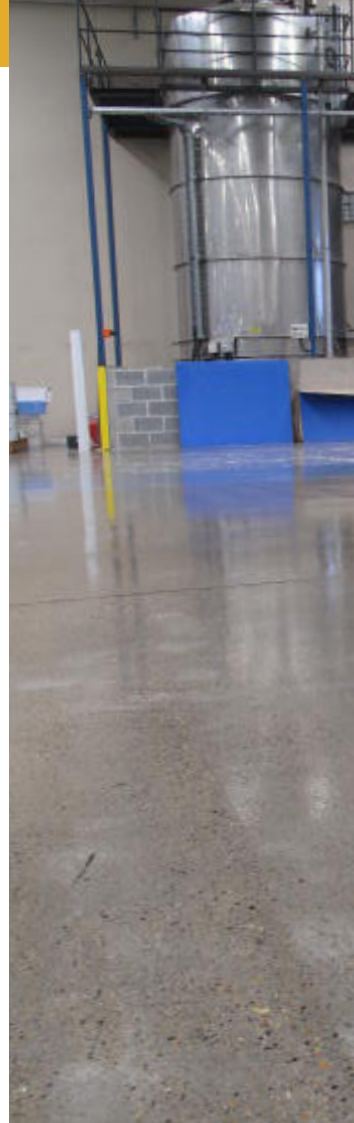
The procedures for surface preparation will vary depending on the type of substrate to be coated.

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

- › Substrate
- › If substrate has been coated previously
- › 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.





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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



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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.

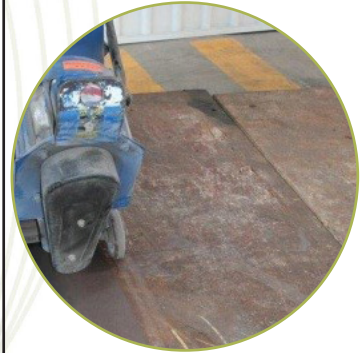
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ABRASION

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



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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

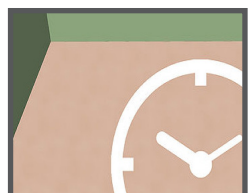
Once the primer is cured, apply the polyurethane top coat. This should be applied on the same day as the surface was primed and within the maximum recoat time of the primer.

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-active 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

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METAL PRIMERS					
PRODUCT NAME	APPLICATION	SYSTEM	MIX RATIO	TYPICAL CURE TIME	FEATURES
Erabond Metal	For bonding Hot Cast PU to Metal: <ul style="list-style-type: none"> • Steel • Iron • Aluminium • Manganese 	25% solids 1 - Component Phenolic	1 - 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 6100FC	For bonding Sprayable PU to Metal: <ul style="list-style-type: none"> • Steel • Ductile Iron • Galvanised 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
POLYURETHANE PRIMERS					
Erabond PU	For bonding PU to PU	High Solids (60%) 1 - Component Polyurethane	1 - Component System	1-2 Hours @25°Cw	<ul style="list-style-type: none"> • Low Viscosity • Strong Key to the Substrate
CONCRETE PRIMERS					
Eraprime LV452	For bonding liquid polyurethane compounds to: <ul style="list-style-type: none"> • Cured Polyurethane • Concrete 	45% solids 1 - Component Solvent based Polyurethane	1 - Component System	2 Hours @ 25°C	<ul style="list-style-type: none"> • Low Viscosity • Deep penetration into substrate. Providing Exceptional Adhesion.
Eraprime MV601	A fast cure primer for concrete and concrete like substrates.	High Solids (60%) 1 - Component Solvent based Polyurethane	1 - Component System	2 Hours @ 25°C	<ul style="list-style-type: none"> • Medium viscosity • Deep penetration into substrate. Providing Exceptional Adhesion.
Erabond 2K Epoxy	For bonding sprayable and roll-on PU systems to Concrete.	100% solids 2 - Component Epoxy	3:1 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.)



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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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