

## DESCRIPTION

**Epo-chem™ RE 500P** is a solvent-free, rust tolerant epoxy Novolac primer.

**Epo-chem™ RW 500** is a solvent-free, epoxy Novolac single coat/topcoat.

These two products combine to make a solvent-free, rust tolerant, high temperature, glassflake epoxy Novolac coating system offering excellent resistance to highly aggressive chemicals.

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## SURFACE PREPARATION

A longer service life in any project can be achieved with higher standards of surface preparation.

### STEEL SUBSTRATE

The surface preparation standards given are the minimum.

### PRE TREATMENT

Clean surfaces to remove traces of grease, salt, oil or wax and other contaminants.

**Chemco's** cleaner (S11A) can be used to prevent contamination of the applied coating following surface preparation.

### BLAST CLEANING

Abrasive blast clean the substrate to achieve a minimum standard of Sa 2½ with the best surface profile that can be achieved (up to 75µ) in accordance with ISO 8501-1. The choice of abrasive media is dependent upon the profile and standard finish required, although due consideration of Health & Safety issues should be taken into account. Typically, the preferred choice is either garnet or chilled iron grit, although other forms of abrasive media, e.g. expendable copper slag, etc. can be used. Remove dust and debris by vacuum cleaning or brushing prior to application. Take all necessary and appropriate measures to prevent risk of contaminating the blasted surface by adopting good housekeeping standards and restricting access only to the applicators.

### HAND MECHANICAL PREPARATION

**Epo-chem™** coatings are ideal for protecting substrates prepared by hand mechanical methods due mainly to the excellent properties obtained, even on inferior or rusted surfaces. Whilst abrasive blasting is always the preferred choice it might not always be feasible or practical. Power tool methods may be considered for repairing of damaged coating or in circumstances where specified by the client. The substrate may be prepared using chipping hammers, wire brushing, pneumatic or electrically powered rotary brushes, needle guns, grinders and/or sanders. The applicator should endeavour to remove loose paint, rust and other contaminants to achieve a clean metal finish equivalent to St 2 (recommended St 3) in accordance with ISO 8501-1. Exposed edges should be ground to remove sharp edges, loose slivers, mill scale etc. Treat welds by grinding to remove loose flux, weld cap, slag, etc. When using powered tool methods ensure correct grade of disc grinders, needles are used.

Utilising a brittle blaster will offer the best mechanical surface preparation standard.

### HP or UHP WATER JETTING

Use high pressure (500-800 bar) water jetting with rotating nozzle to remove all rust and contaminants to minimum standard WJ-3 (WJ-2 for chemical tanks).

UHP is not normally required, however it can be used at contractor's own discretion.

*\*Contact Chemco technical department for advice, assistance or further instruction.*

## APPLICATION EQUIPMENT

The following equipment is recommended for application of **Epo-chem™ RE 500P** (Primer) and **Epo-chem™ RW 500** although other choices capable of handling the pressure and volume can be utilised:

- Airless spray pump: Minimum 45:1 ratio (preferably 63:1); **large volume** delivery is essential.  
Use as short a line as possible.  
Remove all filters from the gun and pump.  
T5 thinner (max 5%).  
Use 2.5-5% for spray application in cold conditions and/or long hoses over 50m.
- Tip size: RE 500P (17 - 19 thou.) 60° angle, heavy duty reversible.  
RW 500 (23 - 31 thou., Ideal 27 thou.) 60° angle, heavy duty reversible.
- Tip Pressure: RE 500P 3,000psi minimum.  
RW 500 3,500psi minimum.
- Brush and/or roller: For stripe coating, inaccessible or awkward areas or when spray application is not required or feasible.

Prior to application it is important to plan the work and make careful selection decisions concerning size of tip and fan angle since this will help to minimise waste and enable a good quality spray grade finish to be achieved.

The pump should be fitted with leather and Teflon seals. Fluid hoses should be of a nylon type [size 3/8" (10mm), although for some projects a larger dia. of 1/2" (13mm) may be required]. The whip end hose is 1/4" (6mm) (provided the length does not exceed 1.0m).

## MIXING & APPLICATION INSTRUCTIONS

### MIXING

Two pack epoxy systems consisting of base resin and hardener.

Prior to mixing, when removing container lid, avoid contaminating material with dust and dirt.

Part A (resin) and Part B (hardener) are supplied in separate containers. Always mix Part A prior to the addition of Part B. Part mixing is **not** recommended unless accurate scales are available.

**Following the addition of Part B, the mixing should be carried out until a homogeneous, "streak-free" mix is obtained.**

Mix thoroughly, paying particular attention to the side and bottom of the container.

For 5kg and 20kg packs, the mixing must be carried out using a hand held agitator at low speed.

For 1kg packs or smaller, hand mixing can be utilised.

In certain circumstances or under specific conditions (e.g. very low temperatures), the coating can be thinned by addition of maximum 5% of **Chemco** Thinner T5.

### APPLICATION

#### COATING

Material should be kept in an environment as near as possible to room temperature for at least 24 hours prior to application.

Do not store/keep materials outside in cold/hot condition or in direct sunshine.

The product components and the mix ratios are given on the product labels. Ensure the correct quantity and type for the given pack size is used.

DISCLAIMER: The information contained herein is, to the best of our knowledge, accurate and current and is given in good faith without warranty. Users are deemed to have satisfied themselves independently as to the suitability of our products for their particular purpose. In no event shall Chemco International be liable for consequent or incidental damages.

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## MIXING & APPLICATION INSTRUCTIONS (Cont.)

### POT LIFE

IT IS IMPORTANT TO REMEMBER THAT THESE PRODUCTS HAVE A LIMITED POT LIFE.

(The pot life can be obtained from the data sheets).

Once Part A and Part B have been mixed, apply the material as soon as possible.

Please note that the pot life given in the data sheets is for a given temperature and if the temperature is higher or lower, the pot life will become much shorter or longer respectively.

If gelling has started or the viscosity is increased substantially, the product should **NOT** be used any further.

### BRUSH/ROLLER APPLICATION

For application with brush or roller, mix a maximum of 5kgs.

Stir both components thoroughly to achieve an even consistency.

Avoid narrow cylindrical pots as this may shorten pot life.

Apply the mixed material using good quality brushes and with some pressure, unlike applying conventional low viscosity paint systems when no pressure is applied.

The thickness of coating which can be applied in one coat varies, depending on the temperature of the material and the substrate.

High temperature of the material and/or substrate will result in reduced viscosity and lower DFT.

### SPRAY APPLICATION

Check prior to application that equipment is fit for intended purpose.

Ensure hoses are in good condition (no kinks), of correct size and type.

Remove the solvent container and place the material container directly under the pump taking care to minimise risk of contamination.

Cleanliness is of paramount importance as the filters are removed.

Never mix too many drums as the material in bulk will create an exothermic reactions. It is therefore important to work at the same rate as the sprayer.

Apply wet coats of **Chemco RE 500P & RW 500** in even parallel passes.

Do not attempt to achieve specified DFT in one pass. Vertical and horizontal passes should be used to seal the surface and to achieve desired DFT.

Overlap each pass to avoid bare areas, pinholes or holidays, giving special attention to cones, welds, rough areas, edges and cavities.

Upon completion of spraying, immediately flush out equipment with S11A cleaner, circulated through the pump and lines for at least 10 - 15 minutes.

### POST CURING

Post curing will enhance the chemical, temperature and abrasion resistance of the system.

Use dry heat to achieve 80° C substrate for minimum 4 hours.

Lower temperature (e.g. 50° C) will not be effective unless it is used for a much longer period (2-3 days).

Steam curing can be utilised only if the coating has been sufficiently cured/aged.

The most effective post curing is to achieve similar or higher temperature than working temperature of the vessel.

If additional heating is not available, the tanks can be left at ambient temperature for one week at temperatures above 23° C or two weeks at a lower temperature.

Any type of heater (e.g. blow heater) capable of supplying large volumes of hot air will be suitable.

## LIMITATIONS

Pot life:	Dependent on ambient and material temperature, the hotter the material, the shorter the pot life. Vigilant care and attention to pot life is required during application. If gelling has started, do not apply.
Airless spraying:	Preferably keep the material at room temperature when airless spraying.
Environmental conditions:	Minimum steel/ambient temperature of 5° C is required for effective cure. At cold temperatures and/or wet conditions (during application) amine blooming may occur; the discolouration does not affect the performance of the coating.

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## INSPECTION

### VISUAL INSPECTION

Ensure there are no irregularities: pinholes, raised areas, soft spots, disbondment, poor joints, surface discontinuities and delaminations.  
Any defects shall be marked for subsequent repair.

### THICKNESS TEST

Wet Film Thickness (WFT) of each coat can be carried out using a wet film gauge.  
Dry Film Thickness (DFT) measurements are taken after coating/lining has sufficiently cured.

### POROSITY & HOLIDAY TEST

A porosity/holiday DC spark tester is the instrument used to detect pinholes or holidays (output voltage 0 - 20kV).  
The industry standard for setting up a spark tester is approximately 4V per microns of coating.  
Defects are marked off for subsequent repair.

Spark testing is highly recommended for aggressive environments in tank lining applications.

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