

## DESCRIPTION

Epo-chem™ RA 500 coatings are based on solvent-free epoxy resins, reinforced with screened glassflake particles 0.4mm, 0.8mm or 3.2mm diameter.

For example:-

564	500 series reinforces with 1/64" or 0.4mm glassflake
532	500 series reinforces with 1/32" or 0.8mm glassflake.
508	500 series reinforces with 1/8" or 3.2mm glassflake.

To obtain maximum performance, for which these coatings are formulated, strict adherence to application instructions, precautions, conditions and limitations is necessary.

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## SURFACE PREPARATION

### STEEL SUBSTRATE

#### PRE TREATMENT

Clean surfaces to remove traces of grease, oil or wax-based residue and other contaminants with **Chemco** cleaner (S11) so as to prevent contamination of the applied coating following surface preparation.

#### BLAST CLEANING

Abrasive blast clean the substrate to achieve a "near-white" metal finish equivalent to SA2½ with a surface profile of 75 microns 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. Application should not be delayed, otherwise quality of the blast will be affected by the presence of flash rust forming on the substrate. 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. In this way the adverse effects of contamination, moisture and humidity exposure, which reduces adhesion, may be minimised.

#### 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 ST3 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. Contact **Chemco** technical department for advice, assistance or further information.

## SURFACE PREPARATION (cont'd)

### CONCRETE SUBSTRATE

**NEW CONCRETE** - May require light abrasive blasting for keying purposes. It is normally standard practice to allow the concrete to fully cure (a minimum of 28 days prior to coating). However, by application **Chemco's** damp/wet concrete primer followed by an anti-corrosion protective coating system, the curing period for the concrete may be substantially reduced.

**OLD CONCRETE** - Pre-treatment may be required to remove contaminants from substrate and provide a uniform roughened substrate. Approximately 0.5 to 1.0cm should be removed. Depending on condition of substrate and operating environment, pre-treatment may involve a number of methods, i.e.-:

- abrasive blasting followed by dusting
- wire brushing
- multi-plane/scarifying
- flame blasting
- acid etching

Mechanical pre-treatment to be followed by thorough cleaning, preferably by vacuum.

It is important to strengthen and seal surface by saturating pores with concrete primer. One or two coats (depending on condition of concrete) should be applied by brush, roller or spray.

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## APPLICATION EQUIPMENT

The following equipment is recommended for application of **Chemco** coatings, although other choices capable of providing a high quality finish may be used:-

- Airless spray pump (minimum 45:1, preferably 63:1) with reversible heavy duty tips:-  
Tip size - 564 (23 - 31 thou. Ideal 27 thou. 60° angle).  
Tip size - 532 (31 - 39 thou. Ideal 37 thou. 60° angle).
- Trowel, spatula, brush, short bristled roller medium nap.

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 10mm (3/8"), although for some projects a larger dia. of 12.5mm (1/2") may be required]. The whip end hose is 6mm (provided the length does not exceed 1.0m).

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## MIXING & APPLICATION INSTRUCTINS

### MIXING

Prior to mixing, when removing container lid, avoid contaminating material with dust and dirt. Mix resin (Part A) with hardener (Part B) as supplied, using a mechanical whip or equivalent. Mix for a sufficient length of time to ensure thorough mixing.

### **NEVER THIN THE COATING BY ADDITION OF ANOTHER CHEMICAL.**

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.

**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 INSTRUCTINS (cont'd)**

### POT LIFE

Apply the material as soon as possible.

**IT IS IMPORTANT TO KEEP IN MIND THAT THESE PRODUCTS HAVE A LIMITED POT LIFE.**

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

Please note that the pot life given in the data sheets is for 15 - 20°C 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 APPLICATION

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

Stir both components thoroughly to an even consistency.

Try to avoid very narrow cylindrical pots as this may shorten pot life.

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

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

The hotter the material and substrate, the lower the viscosity and lower possible thickness to be applied.

### TROWEL APPLICATION

This method of application is mainly used for application of 508 heavy duty grade.

This material (508) is a high viscosity material which can only be applied by brush/roller or trowel.

Trowel is used for large areas and is the fastest method of applying this grade.

The mixing and application method is virtually the same as for plastering.

Using the same equipment, mix appropriate amount and transfer onto the board and mix again prior to the application.

After the application, clean all equipment with a suitable solvent and dry with a clean rag.

### SPRAY APPLICATION

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

Remove fluid filters from pump, both at suction and discharge ends.

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

Remove the solvent container and place material container directly under pump taking care to minimise risk of contamination since cleanliness is of paramount importance.

The spraying action should continue until the material appears at the gun head.

Make sure that all diluted material is sprayed into a waste container.

When mixing material for application it is important to work at a rate similar to the sprayer.

Never mix too many drums otherwise coating will harden and may cause thickening or lumps to form.

If too slow, then inconsistency in finished quality will result.

Catalysed material has a shortened pot life which is reduced by temperature and pressure, it is

therefore important to mix only what is required for the work to proceed and to avoid delays.

Once spraying is finished, immediately flush out equipment with S11 or S11A cleaner, circulated through the pump and lines for at least 10 - 15 minutes.

## MIXING & APPLICATION INSTRUCTINS (cont'd)

Apply a wet coat of 500 series coating in even parallel passes.

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

Do not attempt to wet out the surface fully at a single pass but mist coat the area with several passes until at least 80 - 90% coverage is achieved.

To spray the whole area, start by spraying vertically from top to bottom/bottom to top and move to an adjacent area using the same method as before then return to previous area and build up coating thickness with horizontal passes.

This method of vertical followed by horizontal passes should be used for treating the complete area.

Clean all equipment with S11 or S11A cleaner immediately after use and dry with a clean rag.

Airless spray application is suitable only for all **Chemco** 500 series coatings reinforced with 0.4mm (1/64") and 0.8mm (1/32") screened glassflake particles.

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## INSPECTION

### VISUAL INSPECTION

Ensure no irregularities such as raised areas, soft spots, disbondment, poor joints, surface discontinuities and delaminations.

Any defects shall be marked for subsequent repair.

### THICKNESS TEST

Monitor thickness of lining/coating during application by wet film and/or dry film methods.

Wet film monitoring is made by use of a wet film comb whereby the comb is pushed into the coating and the actual thickness value read off the gauge.

Dry film thickness (dft) measurements are taken after coating/lining has fully cured.

The probe measures the depth of coating via an electronic signal, which is converted to an analogue digital value.

Following calibration using shims or foils (of known dft) the area coated should be monitored and the values recorded.

Recommended for ferrous and non-ferrous metal substrates (several types of probe are required for monitoring the various types of ferrous and non-ferrous substrates).

### POROSITY & HOLIDAY TEST

Spark test coated area with porosity/holiday DC spark detector instrument (voltage output 0 - 20kV) which should be set to the correct voltage (dependent upon coating thickness ut generally about 4V per microns of coating).

The instrument is used to detect any pinholes or holidays.

The probe is passed across the surface of the coating, which if fully sealed, would act as an insulator.

A pinhole or holiday means that the coating has not fully covered the substrate and therefore an electric current would emit a spark triggering off the alarm.

Defects are marked off for subsequent repair.

This method of test is recommended for final inspection and is suitable for ferrous substrates and concrete (containing a ferrous or other type of conductive admixture).

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