

## EPOLAC EPOXY COATING TWO PACK (CHEMICAL RESISTING ENAMEL)

### ➤ Scope

For almost five decades; structural engineers; plant fabricators; maintenance engineers and chemists have been aware of epoxy system for corrosion resistance. Even today the system is the workhorse in the field of chemical and environmental corrosion prevention. By now, a few other coatings have been launched but none can beat the economics of epoxy coatings and our brand name of such finishes is epolac. It is a two pack system : base and hardener.

Again, the hardeners are of two types:

- (a) Polyamines for better corrosion resistance but poorer in adhesion.
- (b) Polyamides for normal corrosion resistance and with better flexibility.

### ➤ Areas of Application

All types of structures, metallic or concrete, which have to face severe chemical or marine atmosphere, should have epoxy coatings, to successfully fight corrosion attack for a long period. The coating may be of epoxy powder but the same can be applied on smaller articles because the powder coating needs stoving at a high temperature (180° c), which is not possible in case of large structures. Thus, epolac is suitable for refineries, fertilizer plants, urea prill towers, cooling towers, large conveyors handling coal and other materials etc.

### ➤ Surface Preparation

For best results, the surface to be painted should be blast cleaned to remove oil, grease and rust. In case of a concrete surface, the same should be free from moisture. Immediately after blast cleaning, a coat of rosalee metaprime-h (two pack wash primer) should be applied to be followed by epolac epoxy primer redoxide or epolac epoxy zinc phosphate primer. Epolac finishing can be applied overnight or after 4 – 6 hours.

### ➤ Technical Data

- APPEARANCE : Base shows appropriate colour viz. White, black, grey etc.  
Hardener for all shades is clear, pale yellow to brownish.
- VISCOSITY : Base : 60–70sec.in ford cup. No.4 @30° c
- HARDENER : Polyamine : 30-35 seconds in ford cup no.4 @ 30° c.
- POLYAMIDE : 20 – 22 seconds in ford cup no. 4 @ 30° c.
- MIXING RATIO : Base (3) : hardener (1) by volume.
- VISCOSITY OF THE MIX : 30-40 secs. In ford cup no.4 @ 30°c.
- BRUSHING VISCOSITY : 50 - 60 secs. In ford cup no. 4 @ 30°c
- SPRAYING VISCOSITY : 22 - 25 secs. In ford cup no.4 @ 30°c
- THINNER TO BE USED : Epoxy thinner 055 to attain the right viscosity.

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- DRYING TIME : Touch dry : 25 – 30 minutes  
Surface dry : 1½ hrs.  
Thumb impression free : 4½ hrs.  
Hard dry : over night
- RECOATABILITY TIME : After 4 hours
- POT LIFE : Six hours minimum.
- COVERING CAPACITY : 10 –12 sq. mtrs . When applied on a smooth,  
Non porous surface.
- DRY FILM THICKNESS : 30 – 35 microns single coat application.
- IMPACT TEST : Passes one kg. At 18” fall.
- FLEXIBILITY : Passes 1/8” mandrel.
- SCRATCH HARDNESS : Passes 1500 gms after 48 hrs.
- CROSS HATCH TEST : Passes
- SALT SPRAY RESISTANCE : Unprimed coat passes 400 hrs.
- CORROSION RESISTANCE : See chart at the end

### ➤ **Directions for Use**

The epolac should be applied onto a primed surface. The primer should be dry sanded with 400 paper. Ensure all loose particles are wiped off, using clean rag pad.

Stir the base before mixing with hardener and in recommended proportion. Allow to “mature” for 15-20 minutes. Adjust the viscosity for brushing or for spraying, using epoxy thinner 055. Mix the base and hardener in enough quantity to last only 5-6 hours (before the pot life is over). Apply wet on wet, two coats or apply the second coat after four hours.

In case of cement concrete surface, ensure the surface is totally dry. If need be blow hot air. Our experience, to get the best result on cement concrete, a thin coat of rosalee metaprime-h should be used as primer. It takes care of free alkalinity.

### ➤ **Notes**

Epoxy system should not be used when the relative humidity exceeds 80%. If the work has to be carried out, blow hot air in the paint shop. Clean the gun or the brush with universal thinner 303 as otherwise; the epolac will harden so much so that the brush or the gun will become non-operative.

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### ➤ Corrosion Resistance Chart

Sand blasted panels were prepared, having two coats of epolac epoxy primer redoxide and two coats of epolac epoxy finishing paint. Total dry film thickness : + 100 microns. After seven days curing time, the panels were immersed into solutions of various chemicals and were observed every week for six months. Constant temperature was maintained (30°c) and the results are tabulated hereunder:

#### ACIDS

10%	Hydrochloric acid	:	Excellent
10%	Sulphuric acid	:	Excellent
10%	Citric acid	:	Discoloured
10%	Phosphoric acid	:	Blisters after 3 months
100%	Fatty acids	:	Blisters after 2 months
1%	Nitric acid	:	Blisters after 3 months
10%	Nitric acid	:	Fails within 1 month
10%	Acetic acid	:	Fails within 1 month
10%	Formic acid	:	Fails within 1 week

#### ALKALIES

10%	Liquor ammonia	:	Excellent
40%	Liquor ammonia	:	Blisters after 4 months
20%	Caustic soda	:	Excellent
40%	Sodium carbonate	:	Excellent

#### SALTS

10%	Ammonium chloride	:	Excellent
1%	Sodium sulphate	:	Blisters after 2 months
5%	Calcium hypochlorite	:	Slow decomposition after 2 months
5%	Copper sulphate	:	Slow discolouration after 2 months.

#### SOLVENTS

Xylene	:	Film softens after 1 month.
Toluene	:	Same as above.
Ethyl acetate	:	Slight discolouration
Butyl alcohol	:	Excellent
20% ethanol	:	Excellent

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➤ **Disclaimer**

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