

NIPPON PAINT EA4 FINISH

NIPPON PAINT EA4 FINISH is a two-pack amine-adduct cured epoxy finish for use on steel and cement surfaces where chemical, oil and abrasion resistant coating are required. It is recommended for non-immersion services. If it is to be applied over steel, it has to be used in combination with the appropriate primers as recommended below. If it is to be applied over concrete the surface should be acid-treated prior to application.

Product Features:

- Good resistance to abrasion and mechanical damage
- Excellent on correctly prepared and primed surfaces
- Dry service temperature up to 100°C

Paint Type	Product Type	Finishing	Recommended Substrate	Pack Size
Solvent based	Interior	High Gloss	Properly primed steel, masonry and tile	1 L (0.8L Base and 0.2L Hardener) 5 L (4L Base and 1L Hardener) 20 L (16L Base and 4L Hardener)

Composition

Pigment	: Organic and inorganic pigments
Binder	: Epoxy and amine adduct
Thinner	: Combination of aromatic, ketone and alcohol

Technical Data

Drying Time (25–30°C)	: Touch Dry : 2 – 3 hour (Dependent on temperature and humidity) : Hard Dry : 16 hours (Dependent on temperature and humidity)
Overcoating Time (25–30°C)	: Minimum 16 hours (Dependent on temperature and humidity)
Curing Time (25–30°C)	: 7 days (Dependent on temperature and humidity).
Dry Film Thickness	: Around 25 – 30 µm per coat (based on substrate condition)
Typical Thickness	: 50 – 80 µm dry film per coat 100 – 160 µm wet film per coat
No. of Coats	: 1 – 3 coats
Theoretical Coverage	: 10.2 m ² per litre per coat (for dry film thickness of 50 microns) 6.4 m ² per litre per coat (for dry film thickness of 80 microns)
Practical Coverage	: 6.1 m ² /litre (for dry film thickness of 50 microns) 3.8 m ² /litre (for dry film thickness of 80 micron)
Volume Solid	: 51 ± 3% by volume
Specific Gravity	: 1.00 – 1.30 (for mixture of base and hardener)
Mixing Ratio	: 4 parts by volume of Base to 1 part by volume of Hardener. (Stir the content of the Base component, continue stirring and gradually add the total contents of the Hardener component, continue stirring until a homogeneous mix is obtained.)
Pot Life (25–30°C)	: 6 – 8 hours after mixing
Shelf Life	: Up to 36 months in tight sealed container

Application Method

Brush, roller, compressed air spray and airless spray. Preferably use airless spray if a thicker coat is required in one application. Brush, roller and compressed air spray generally lead to lower film thickness, so more applications may be required to obtain the recommended thickness per coat.

When airless spray is being used, excessive high tip spraying pressure should be avoided. The minimum pressure at the pump conducive with good atomization should be used. Brush and roller are recommended for small areas and touch-up only. Good quality brushes and mohair/ short nap rollers should be used with full strokes. Avoid re-brushing. Additional coats may be required to achieve minimum specified film thickness.

For thinning, substitute thinners other than those approved or supplied by Nippon Paint may adversely affect the product performance and void product warranty whether expressed or implied.

Drying time will become remarkably delayed under low temperature. Overcoating the previous coat of Nippon Paint EA4 Finish should be done within 6 ~ 7 days but preferably as soon as possible after it has been allowed 16 hours drying or else, it is desirable to

roughen it by dry sanding with sandpaper before it is overcoated. This is to ensure proper inter-coat adhesion. Exposure of the paint film to water, chemical and abrasion should be avoided as far as possible before full cure of the coating. When chalking occurs, chalks should be removed by water washing. Allow the surface to dry thoroughly prior to overcoating.

For Nippon Paint EA4 Finish and Nippon Paint EA9 Finish HB as a primer on concrete/cement floor, the recommended dilution of 10% with a suitable thinner by volume for improved adhesion. Dilution of 100% with appropriate thinner shall only be recommended for penetration into concrete/cement floor purposes.

Thinner	: SA-65 Thinner
Brush / Roller	: If necessary, add up to 5% thinner by volume.
Compressed Air Spray	: If necessary, add about 10% to 15% thinner by volume
	: Delivery pressure : 140 -170 kg/cm ²
Airless Spray	: Tip size : 0.015" - 0.017"
	: Spray angle : 60° -70°
	: Dilution : Up to 5% thinner by volume

Recommended Coating System

Concrete / Cement Floor

Primer	: Nippon Paint Penetrative Epoxy Primer/ Nippon Paint EA4 Finish*/ Nippon Paint EA9 Finish HB*	: 1 Coat
Top Coat	: Nippon Paint EA4 Finish	: 2 Coat

Steel

Primer	: Nippon Paint EA9 Red Oxide Primer	: 1 Coat
Top Coat	: Nippon Paint EA4 Finish	: 2 Coat

Tiles / Ceramic Surfaces

Primer	: Nippon Paint Tile Primer / Nippon Paint EA9 Finish HB	: 1 Coat
Top Coat	: Nippon Paint EA4 Finish	: 2 Coat

Surface Preparation

STEEL

Avoid painting when the environment relative humidity exceeds 85%, or when the surface to be painted is less than 3°C above the dew point. For maximum performance, this product should be applied to a metal surface that has been blast cleaned to **Sa 2.5 ISO 8501-1:2007 or SSPC - SP 10** and suitably primed. This coating is usually applied over a suitable primer, undercoat or build-up coat. This underlying system should be sound and undamaged. The surface to be overcoated must be dry and free from surface contaminants. All wax, oil and grease should be removed by solvent cleaning in accordance with the guidelines complying to **SSPC - SP 1**. Soluble salts, dirt and dust must be removed prior to applying the coating. Dry brushing should be sufficient. A freshwater wash must follow to remove all soluble salts. Always ensure maximum overcoating time for the primer/build coat has not been exceeded prior to application.

CONCRETE

Surfaces should be clean, dry and free from oil, grease and contaminants before painting. For previously painted surfaces, remove all unstable paint film, loose chalk, dust and foreign matter. Repair any surface defects, clean off and dry. Avoid painting on the substrate with high moisture content.

For New Concrete Floor.

- The standard cure time for most fresh concrete or masonry applications is generally considered to be 28 days at 23oC and relative humidity 50%. It should be allowed to cure until moisture content is below 4% and pH value below 9.
- Repair and seal cracks or holes. Loose concrete and residues on the concrete surface to be painted should be removed as completely as possible.
- Etch the surface with 5% hydrochloric acid solution for 3 to 5 minutes and flush off thoroughly to remove acid residue and salt deposits that may have formed after etching. The purposes of acid etching are to neutralize the surface and to remove any glaze or contaminant. However, acid etching will not remove oil or grease. Therefore, the concrete should be scrubbed clean with detergent/soap prior to acid etching. The surface must be rinsed immediately after acid etching is performed to avoid formation of salts on the surface, which are difficult to remove.
- The surface should be cleaned and must be allowed to dry thoroughly prior to painting.

For Old or Repainting Concrete Floor

- Water jet to get rid of oil/grease deposits, mold & any growth, other contaminants etc. Apply degreasing agent and flush clean. Spot clean with solvent for areas are still contaminated. If water jetting is not possible, then mechanical removal of these deposits must be done.
- Prior to mechanical surface preparation, it is important that concrete and masonry are free of contaminants.
- For repainting, in order to enhance the performance of the new painting systems, it is necessary for complete removal of existing old paint film on floor surface layer via mechanical grinding. Grinding is suggested to be done wet to minimize dust problem. The floor must be cleaned of dirt/dust contaminants after grinding.
- The surface should be cleaned and must be allowed to dry thoroughly prior to painting.

References:

- 1) ASTM D4258 – Standard Practice for Surface Cleaning Concrete for Coating
- 2) ASTM D4259 – Standard Practice for Abrading Concrete
- 3) ASTM D4260 – Standard Practice for Acid Etching Concrete
- 4) NACE No. 6 / SSPC (Society of Protective Coating) SP-13 – Surface Preparation of Concrete
- 5) ICRI (International Concrete Repair Institute) Technical Guideline No. 03732 – Standard of Concrete Surface Profile / Roughness

Cleaning

Cleaning Solvent : SA-65 Thinner. Clean up equipment with thinner immediately after use.

Environmental Conditions During Application

- Do not apply when the relative humidity exceeds 85% or when the surface to be coated is less than 3 °C above the dew point.
- Do not apply at temperature below 7 °C. If not, drying and overcoating times will be considerably extended.
- During application of the paint, naked flame, welding operations and smoking should not be allowed and good ventilation is necessary.

Safety Precautions

- Keep container tightly closed and keep out of reach children or away from food and drink.
- Ensure good ventilation during application and drying.
- During application of paint, naked flames, welding operation, and smoking should not be allowed.
- When applying paint, it is advisable to wear eye protection.
- In case of contact with eye, rinse with plenty of water immediately and seek medical advice.
- Remove splashes from skin by using soap or water.
- Paint must always be stored in a cool place.
- When transporting paint, care must be taken. Always keep container in a secure upright position.
- Dispose-off any paint waste in accordance with the appropriate Environment Quality Regulations.

Note

Theoretical Coverage is based on a mathematical formula and does not consider Loss Factor.

$$\left[\frac{\text{Volume Solid \%} \times 10}{\text{Dry Film Thickness } (\mu)} \right] = \text{m}^2 / \text{liter} / \text{coat}$$

and does not consider LOSS FACTORS. Variables like porosity of substrate, application method, dilution ratio, dry film thickness, opacity and so on will affect the loss factor and can vary from 30% – 50% or even more.