

NIPPON POLYURETHANE RECOATABLE FINISH
Updated Apr'22

Polyurethane Recoatable Finish is a two-component, high build, aliphatic acrylic polyurethane coating, which is to be used as topcoat in atmospheric environments. It provides a durable gloss and colour retention topcoat finish, which also incorporates a wide range of performance characteristics. It offers good operational performance including adhesion, abrasion scratches, impact, humidity condensation and splashes of mild chemicals, when applied over suitable and properly primed surfaces.

Product Features:

- Weathering durability, gloss and color retention
- Non-yellowing and does not chalk easily
- Resistant to splashes of mild, non-aggressive chemicals
- Good application properties, flow and levelling
- Long recoatability property, can be recoated even after long exposure

Paint Type	Product Type	Finishing	Recommended Substrate	Pack Size
Solvent based	Interior / Exterior	Colours (Gloss / Soft Matt)	Properly primed steel, galvanized iron, aluminium, masonry, tile, metal roofing etc	Colour Creation Bases 1 L (0.8L Base and 0.2L Hardener) 5 L (3.75L Base and 0.25L Hardener) Standard Colours 5 L (4.0L Base and 1.0L Hardener) 20 L (16.0L Base and 4.0L Hardener)

Composition

Pigment	: Organic and inorganic pigments
Binder	: Acrylic polyol and aliphatic polyisocyanate
Thinner	: Combination of glycol ether ester and hydrocarbon

Technical Data

Drying Time (25-30°C)	: Touch Dry : 2 hours (Dependent on temperature and humidity) : Hard Dry : 8 hours (Dependent on temperature and humidity)
Overcoating Time (25-30°C)	: Minimum 8 hours (Dependent on temperature and humidity)
Curing Time (25-30°C)	: 7 days (Dependent on temperature and humidity).
Typical Thickness	: 50 - 75 µm dry film per coat 80 - 125 µm wet film per coat
No. of Coats	: 1-2 coats
Theoretical Coverage	: 12.0 m ² per litre per coat (for dry film thickness of 50µm) : 8.0 m ² per litre per coat (for dry film thickness of 75µm)
Practical Coverage (40% Loss Factor, as a guideline)	: 7.2 m ² /litre (for dry film thickness of 50 microns) 4.8 m ² /litre (for dry film thickness of 75 microns)
Volume Solid	: 60 ± 2%
Specific Gravity	: 0.98 – 1.25 (for mixture of base and hardener)
Mixing Ratio	: Colour Creation Bases – 5 parts by volume of Base to 1 part by volume of Hardener : Standard Colours – 4 parts by volume of Base to 1 part by volume of Hardener <i>(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.)</i>
Pot Life (25-30C)	: 5 hours after mixing
Shelf Life	: Up to 24 months in tight sealed container (Subjected to reinspection after exceeding shelf life period)

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.

In order to ensure maximum adhesion between coats, it is important to observe that, before recoating, the applied coat is dry and free from any form of contamination. In case it rains or raining is expected, it is advisable not to do any painting. Painting under relative humidity above 85% will adversely affect the subsequent performance of the coating. Condensation occurs during or soon after application and premature early exposure to rain or ponding water could result in color and gloss change.

The optimum resistance of the coating is only attained after completion of the curing of the paint. Under average atmospheric conditions, it takes about 6 ~ 7 days. Exposure of the applied coating to severe abrasion or chemical and water spillage should therefore be avoided before completion of the curing period, the first two or three days being particularly critical.

Thinner	: Nippon PU Recoatable Thinner. 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. Thinner should be added after mixing the two components. Adding too much thinner results in reduced sag resistance. Do not tend to further reduce the viscosity after reach pot life.
Brush / Roller	: Thin up to 10% by volume of Nippon PU Recoatable Thinner for proper flow-out. 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.
Compressed Air Spray	: Thin up 15% by volume with Nippon PU Recoatable Thinner
Airless Spray	: Thin up to 5% by volume with Nippon PU Recoatable Thinner : Delivery pressure: 140-170 kg/cm ² : Tip size: 0.015"-0.017" : Spray Angle: 60° - 70°

Recommended Coating System
Concrete / Plastered Wall

Sealer	: Nippon EA9/ Nippon Vinilex 5100 Wall Sealer	: 1 Coat
Top Coat	: Nippon PU Recoatable Gloss Finish	: 2 Coats

Tilelac Textured Coating

Sealer	: Nippon 5100 Wall Sealer	: 1 Coat
Textured Finish	: Nippon Tilelac Ema Base	: 1 Coat
Top Coat	: Nippon PU Recoatable Gloss Finish	: 2 Coats

Concrete / Cement Floor (Compact)

Primer	: Nippon EA9	: 1 Coat
Top Coat	: Nippon PU Recoatable Gloss / Soft Matt Finish	: 2 Coats

****Soft Matt only recommended for interior flooring***

Concrete / Cement Floor (Normal)

Primer	: Nippon Penetrative Epoxy Primer	: 1 Coat
Top Coat	: Nippon PU Recoatable Gloss / Soft Matt Finish	: 2 Coats

****Soft Matt only recommended for interior flooring***

Steel

Primer	: Nippon EA9 Red Oxide Primer / Nippon 8048 Zinc Phosphate Primer /	: 1 Coat
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Intermediate	Nippon Nippe zinc E2 Primer / Nippon Zinc Rich Primer HS / Nippon NIOZ : Nippon EA9 Finish HB / Nippon 8048 / Nippon Epoxy MIO / Nippon Epoxy Sealcoat	: 1 Coat
Top Coat	: NP PU Recoatable Gloss / Soft Matt Finish	: 2 Coats
Aluminium / Galvanized Iron		
Primer	: Nippon Etching Primer 120 / Nippon Galvaprimer / Nippon EA9 Red Oxide Primer / Nippon 8048 Zinc Phosphate Primer	: 1 Coat
Top Coat	: Nippon PU Recoatable Gloss / Soft Matt Finish	: 2 Coats
Metal Roofing / Cladding		
Primer	: Nippon 8048 Zinc Phosphate Primer	: 1 Coat
Top Coat	: Nippon PU Recoatable Gloss Finish	: 2 Coats
Glazed / Ceramic Tile		
Primer	: Nippon EA9	: 1 Coat
Top Coat	: Nippon PU Recoatable Gloss Finish	: 2 Coats

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 **Sa2.5 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.

WALL

Remove all loose, defective paint or powdery residues, laitance, loose chalk, dust, fungus, algae and foreign matter. Treat any areas affected by fungus growth with Fungicidal Wash Solution. Repair cracks, uneven surfaces with suitable exterior grade fillers. Smoothen the filler areas with sand paper. Surfaces to be painted must be cleaned thoroughly and dry, it must be free from dirt, grease and other foreign matters. Allow all surfaces to dry completely prior to painting. Avoid painting when the moisture content and alkalinity of the walls are still high. (Recommended painting specification requires the moisture content of the walls to be below 16% measured by protimeter and alkalinity of the walls to be below pH9.)

FLOOR

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 23°C and relative humidity 50%. It should be allowed to cure until moisture content is below 8% 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 minimise 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 : Nippon PU Recoatable 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.
- 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 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.

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

This theoretical coverage rate has been calculated from the volume solids of the material and is related to the amount of coating applied onto a perfectly smooth surface without wastage. For a practical coverage rate, due allowance should be made for atmospheric conditions, surface roughness, geometry of the article being coated, the skill of applicator, method of application etc. when estimating quantities required for a particular job.

The above information is given to the best of our knowledge based on laboratory tests and practical experience. However, since we cannot anticipate or control the many conditions under which our products may be used, we can only guarantee the quality of the product itself.

We reserve the right to alter the given without prior notice.