

**NIPPOSEAL FLEX 100 PLUS** (formerly known as Nippon LM PUBIT Plus)

Updated Sept'22

**DESCRIPTION**

**NippoSEAL FLEX 100 PLUS** is a single component, thixotropic high build, an improved elastomeric liquid applied polyurethane modified bituminous waterproofing membrane. It has much higher volume solids coverage and much better curing, elongation, and cold flexibility with high recovery property.

**NippoSEAL FLEX 100 PLUS** exhibits tough rubber like membrane when cured and offers much advanced and long-term waterproofing performance.

**USES**

**NippoSEAL FLEX 100 PLUS** is suitable for waterproofing applications such as:

- Foundation and Basement
- Car park deck and driveway
- RC flat roof (conceal and inverted roof)
- Terrace, balcony and patio
- Split slab and sunken slab

**ADVANTAGES**

- Excellent elastomeric with much higher recovery from stress
- Excellent crack bridging
- Single component and easy to details
- High build and thixotropic (prevent sagging on vertical wall)
- Excellent resistant to chlorides, sulphates, mild acids, alkalis, oil, salts, bacteria and soil chemicals
- Excellent adhesion to concrete surface
- Seamless and anti-water migration, easy for localize repair
- Easy application by brush, roller, trowel and airless spray

| Product Type                          | Product                        | Pack Size   | Finishing          | Substrate |
|---------------------------------------|--------------------------------|-------------|--------------------|-----------|
| Liquid Applied Waterproofing Membrane | <b>NippoSEAL FLEX 100 PLUS</b> | 18kg / pail | Black color, Sheen | Concrete  |

**Application Data**

|                               |   |
|-------------------------------|---|
| Drying Time at 25-30°C, hours | : 12 hours (Touch Dry), 24 (Full Dry)<br>(Drying time is measured at condition 25°C, 60% humidity for reference. Actual Drying time depends on actual site and substrate temperature, humidity, film thickness and substrate)   |
| Full Cure (35°C)              | : 7 days (for water ponding test)   |
| Interval Recoat Time          | : Minimum 12-24 hours, depending on coat thickness, temperature, wind conditions, humidity and substrate.   |
| Theoretical Coverage*         | : 1.3 Litre per m <sup>2</sup><br><i>For critical area waterproofing, one layer of NIPPON PAINT LM MAT fiberglass reinforcement is recommended.<br/>(Theoretical rate only applies to a smooth non-porous substrate. Actual coverage depends on substrate condition, application method, application condition, etc.)</i> |

**Special Notes**

1. Do not apply the coating on standing water wet or damp concrete.
2. Provide adequate ventilation when installing in the confined areas or spaces.
3. Adequate protection cement sand screed or tiles should be provided on top of the coatings after it achieved its final cure.

**Typical Technical Data**

|                                   |   |
|-----------------------------------|---|
| Form                              | : Smooth and thixotropic dark back liquid paste                                     |
| Color                             | : Black   |
| Solids, %                         | : 90 ±2   |
| Density, kg/L                     | : 1.28 ± 2  |
| Viscosity, cps                    | : > 2000  |
| Tensile Strength, MPa             | : > 1.5   |
| Elongation at Break, %            | : > 1000  |
| Tensile Set Recovery, %           | : 100   |
| Tear Resistance, kg/cm            | : 22  |
| Shore A Hardness                  | : 40-50   |
| Crack Bridging, mm                | : 1.5   |
| Adhesion Strength, MPa            | : ≥ 1.0   |
| Water Vapor Permeability at 5 bar | : Pass  |
| Soil Resistance                   | : Pass  |
| Cold Flexibility, °C              | : -15°C   |
| Chemical resistance               | : Dilute acids, dilute alkali, sewage, hydrocarbons, chlorides, sulphates, bacteria |
| Shelf Life                        | : Up to 12 months in original tight sealed container stored at dry cool place       |
| Compliances                       | : SIRIM and ASTM  |

**Application Method**
**Substrate Preparation**
**Concrete Substrate**

The substrate must be thoroughly clean and dry, free from dust, algae, mildew, fungal, grease and oil. All the contaminants, previous waterproofing and impurity must be removed till bare substrate. Any cracks, honey combs, water leakage area should be repaired by **Nippon Paint Repair System** (for more detail, please refer to Nippon Paint Technical Department) before the waterproofing work proceed. The substrate must be sound and dry with no rising damp. The concrete surface should be flat and free from holes and undulations. Any holes and undulations should resurface with **Nippon Paint Scratch Coat System**. The surface should be clean smooth and cast to fall to allow water run-off.

**Mixing**

Mix for at least 2-3 minutes to achieve a homogeneous mixture, with a mechanical drill fitted with a suitable paddle prior to application. Application should commence immediately after mixing.

**Priming**

For porous surface, prime before further coatings to act as an adhesion promoter. Prepare the priming coat by diluting **NippoSEAL FLEX 100 PLUS** with xylene at a ratio up to 1:1 (depending on the surface porosity). Apply the primer at the rate of 0.3kg/m<sup>2</sup>/coat and allow primer to dry about 30-45 minutes prior to subsequent neat coat application.

**Application**

This product is designed for trowel, short hair pile roller, brush and air-less spray application. Apply **NippoSEAL FLEX 100 PLUS** neat coat at a rate of 1.3 Litre per m<sup>2</sup> or at 1.1mm wet film thickness or 1mm dry film thickness.

This product can be applied in either one or two coats. If applying in two coats, ensure that the second coat is applied only after the first coat has become tack free. The second neat coat should be applied in the opposite direction (right angles) to the first coat as this will allow the waterproofing membrane to be distributed more uniformly.

Allow the final coat to cure for 72 hours before applying protection screed. A thin layer of silica sand may also be broadcast on the second coat while wet to provide mechanical bonding to protective screed. Allow full cure for 7 days before the waterproofing system to actual service conditions.

**Crack-Line Treatment**

All shrinkage crack and non-structural cracks should be pre-treated with a 1.5mm thick coating of **NippoSEAL FLEX 100 PLUS** reinforced with a layer of **NIPPON PAINT LM MAT**, extending at least 50mm on both sides of crack.

**Right Angle and Corner Treatment**

Right angle and corner should have 25mm **NippoBOND** modified cement sand angle fillet, apply **NippoSEAL SEAL FLEX 100 PLUS** reinforced embed with a layer of 100mm width **NIPPON PAINT LM MAT** at 1.0mm thick, and allow to cure 12-24 hours.

**Joint Treatment**

Fill the concrete joint with suitable backing material and **NippoJOINT POLYSIL** at appropriate width to depth ratio. Apply 50mm width strip of flexible self-adhesive tape at expansion joint as de-bonding tape, follow by applying 2 coats of **NippoSEAL FLEX 100 PLUS** reinforced with a layer of **NIPPON PAINT LM MAT**, overlaps at minimum 75mm.

**Moisture Treatment**

When moisture is trapped in the concrete to be waterproofed, an approved venting system consisting of a perforated base felt together with vents shall be used in accordance with the vent manufacturer's application procedures and recommendations.

**Recommended Waterproofing System**
**Concrete Substrate (Conceal)**

**Waterproofing** : **NippoSEAL FLEX 100 PLUS** **1.3 L/m<sup>2</sup>**

**Concrete Substrate (Conceal) with Reinforcement**

**Waterproofing First Coat** : **NippoSEAL FLEX 100 PLUS** **1.3 L/m<sup>2</sup>**

**Fibre Reinforcement** : **Nippon Paint LM MAT** **1 layer**

**Waterproofing Second Coat** : **NippoSEAL FLEX 100 PLUS** **1.3 L/m<sup>2</sup>**

**Environmental Conditions During Application**

- Apply temperature: 15-35°C. Do not apply when the surface to be coated is less than 3°C above the dew point.
- The humidity for application is 30-80%.
- During application of the paint, naked flame, welding operations and smoking should not be allowed and adequate ventilation should be provided.

**Cleaning**

Clean up equipment or tools with thinner immediately after use. Once hardened, it can be removed with white spirit, xylene or similar solvent. Allow the waste to cure, seal it into a suitable container and bury in landfill accordance to local authorities for disposing.

**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.
- Always use protective hand gloves and a mask when handling or applying the product.
- When applying, 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.
- Dispose off any 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. 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. 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.