



Technical Data Sheet

# Normal Set NPE 45

Heating Element Embedment Underlay.



## Product

Normal Set NPE 45 is a self levelling modified cementitious underlay with high adhesive properties and is formulated for the embedment of low wattage underfloor heating elements without the need for priming of sound clean substrates.

## Description

Normal Set NZ is a rapid hardening self levelling single component cementitious underlay with high durability and toughness. Normal Set NPE 45 has been formulated to achieve a smooth flat surface with ease of application and maximum flow without any shrinkage or cracking.

## Recommended Uses

- Embedment of electric cables and ducts
- Underlayment for floor coverings such as carpet, ceramic tiles, etc.
- Fast repairs of uneven concrete floors.
- Residential, commercial and medium industrial application.
- Application thickness of feather edge to 30mm in a single application.
- New construction and refurbishment projects.
- Flat smooth surfaces over existing concrete slabs.
- Levelling existing uneven concrete floors.

## Features & Benefits

- Accepts foot traffic within 2 ½ hours at 20C.
- Reinstating large areas in relative short time periods.
- Very fast application.
- Dimensionally stable.
- Single component product.
- Installation can be carried out in one application.
- Rapid curing.
- Can be applied directly onto prepared sound concrete surfaces without the need for priming.
- Eliminates the need for sand and cement screeds.
- Floor covering can be applied next day.
- Increased flexural, bond strength & toughness.

## Performance Properties

### Typical Compressive Strength

Tested in accordance with AS1012.9 at 20C and AS2073

Age	Compressive Strength
1 day	10-15 Mpa
28 days	25-30 Mpa

### Typical Flexural Strength

Tested in accordance to ASTM C348 at 20C

Age	Flexural Strength
28 days	4-7 Mpa

### Typical Flowability

Tested in accordance to BS890 flow cone at 20C

Flow	200-300mm
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### Typical Bond Strength

Tested in accordance to ASTM C882

Age	Bond Strength
28 days	> 6 - 8 Mpa

### Typical Setting Times

Vicat setting times at 20C

Initial Set	20C	60 minutes
	30C	40 minutes
Final Set	20C	80 minutes
	30C	60 minutes

### Typical Working Time

Temp	Time
10C	60 minutes
20C	40 minutes
30C	30 minutes

### Application Thickness

Minimum	Feather Edge
Maximum	30mm

### Fresh Wet Density

1900kg/m<sup>3</sup> approx. (Tested in accordance to AS1012.5)

### Traffic Time 20°C

Foot Traffic	2 ½ hours
Vehicle Traffic	12 hours
Time to cover with floor covering (overlay)	< 10mm 12-18 hours > 10mm 24 hours
Check Moisture Content	5.5% prior to installation

### Application Temperature

Minimum	5°C
Maximum	30°C

### Maximum Water Requirement per 20kg Bag

4.1 litres

### Packaging

Normal Set NPE 45 is supplied in a 20kg polylined bag.

### Coverage

The approximate coverages are obtained if mixed in accordance with recommended procedures and accurately measured water content.

Thickness	Area m <sup>2</sup> per 20kg bag
2mm	6.5
4mm	3.3
5mm	2.6
6mm	2.2
8mm	1.6
10mm	1.3
13mm	1.0

## Application Instructions

### Substrate and Surface Preparation

Ensure the concrete substrate is clean and free from oil, grease, sealers, curing compounds, paints, polymer coatings, dust or other foreign (bond breaking) matter. Excess bitumen, adhesive, curing agent or laitance should be removed by light scabbling or mechanical captive shot blasting. Followed by vacuuming to remove debris and dust. Large cracks or holes may be filled using equal parts of Normal Set NPE 45 and clean fine sand made up to a trowellable consistency.

Poor surfaces that may be soft or otherwise unsuitable must be primed with Primer SL prior to carrying out application. New concrete floors must be at least 21 days old prior to application of Normal Set NPE 45.

Note: - New concrete floors need to be less than 5.5% moisture content prior to Normal Set NPE 45 application. If this cannot be achieved use Moisture Barrier.





## Priming

Priming is not required when applying NZ NPE to a clean dust free solid substrate such as concrete poor surfaces that may be soft, porous or otherwise unsuitable will require priming to ensure bond.

**Note:** Particle board sheet flooring can **ONLY** be primed with neoprene primer to provide adequate bond to the impregnated surface.

## Mixing of Sure Level SL Primer

Primer Bottle Content (5 Litre).

Add contents of 5 Litre Primer bottle into a clean empty 20 litre pail. Add 10 litres of clean water to the Primer giving a volume of 15 litres of Primer.

Note: - Do not dilute more or less than 2 parts water x 1 part primer at any time. Apply Primer at 4-5m<sup>2</sup>/litre per coat.

### **If priming is required;**

Do not allow dust film to cover primed area prior to application of Normal Set NPE 45. If this occurs the area must be reprimed with Primer prior to proceeding with application of Normal Set NPE 45. For concrete substrates subject to rising damp or moisture a waterproof membrane is required. It is recommended that Moisture Barrier be used as the primer. (Contact office for further details).

## Mixing

Normal Set NPE 45 requires a maximum of 4.1 litres of water. To a clean mixing bucket, add the Normal Set NPE 45 powder to the pre-measured water ensuring product is being mixed during powder addition. When all the Normal Set NPE 45 is added to the water, mix for a further 2-3 minutes until a smooth homogeneous consistency is obtained. Normal Set NPE 45 is supplied in ready to use form requiring only the addition of water. Ensure the product is mixed for a minimum of 5 minutes.

### **DO NOT MIX BY HAND**

Normal Set NPE 45 must be mixed with a mechanical forced action mixer with high shear stirrer.

### **DO NOT ADD EXCESS WATER**

Discard any material that has stiffened.

## Placing

Pour the mixed material on the sound and clean substrate and allow material to seek its own level. Material may be spread with a steel trowel, spreader or squeegee. Keep the trowel slightly inclined to obtain desired thickness. To ensure uniform consistency and uniform continuous flow application of Normal Set NPE 45; it is advised that subsequent mixes are ready to enable continuous pouring until the area to be levelled is complete. Protect the finished area from damage until Normal Set NPE 45 has dried. For very large areas Normal Set NPE 45 can also be applied using an automatic pump. (Consult Sure Level office for further information).

## Curing

No special curing is required. The addition of water to Normal Set NPE 45 after it has started to stiffen is not recommended and the product must be discarded.

## Precautions

- Normal Set NPE 45 must not be used in areas subject to occasional or permanent wetting or where back water pressure is likely.
- Normal Set NPE 45 must not be permitted to come into contact with water at any stage during use.
- Normal Set NPE 45 is not designed as a wearing course or as a water proofing agent, and should only be used as an underlayment.
- To avoid too rapid drying, protect applied Normal Set NPE 45 from direct sunlight or drying winds during actual application, and while curing for up to 12 hours.
- If the substrate on to which Normal Set NPE 45 is applied moves or cracks, reflective cracking will occur in the Normal Set NPE 45.
- Depending on thickness and ambient temperatures Normal Set NPE 45 can be covered with flooring materials in 24 hours.
- For large and thick sections it is advised to check the moisture content of Normal Set NZ NPE prior to application of floor coverings.
- New concrete surfaces must be at least 14 days old prior to application of Normal Set NPE 45. (refer to Application Instructions).
- Concrete substrates should be checked for moisture content prior to application of Normal Set.

## Substrates

For concrete substrates subject to rising damp or moisture, a water proof membrane barrier coating is required. It is recommended that Moisture Barrier be used as the primer. (Contact Sure Level office).

## Yields

The approximate yields are obtained if mixed in accordance with recommended procedures and accurately measured water content. A 20kg bag of Normal Set NPE 45 with 4.1 litres of water will yield approximately 13 litres. 77 bags required per cubic metre. A 20kg bag of Normal Set NPE 45 will cover approximately 1.3m<sup>2</sup> at 10mm thick, or 1m<sup>2</sup> at 13mm thick, or 2.6m<sup>2</sup> at 5mm thick.

## Clean Up

Normal Set NPE 45 should be removed from tools and equipment with clean water immediately after use.

## Storage

Normal Set NPE 45 has a shelf life of approximately 10 months if kept in a dry environment completely away from moisture.

## Health & Safety

This product is classified as hazardous according to criteria of Work Safe Australia. Material containing Portland Cement and sand now fall into this category. Continuous or extended contact with this product may cause irritation as well as respiratory issues such as bronchitis or silicosis.

- During use avoid inhalation of dust, contact with skin and eyes.
- Suitable protective clothing, dust masks, gloves and eye protection should be worn.
- Continual or extended contact with cement products can cause skin irritation.
- If skin irritation occurs, remove contaminated clothing and flush skin thoroughly with water for a minimum of 15 minutes. Contact Poisons Information Centre or consult medical adviser.
- Material Safety Data Sheets (MSDS) are available on request from the Sure Level office. Read the

## Disclaimer

Please Note: Recommendation and advice regarding the use of this product is to be taken as a guide only and Sure Level Pty. Ltd. shall not be liable for any inaccuracy in the information or for any loss, injury or damage whatsoever resulting from its use. To the full extent permitted by law, Sure Level Pty. Ltd. liability is limited at it's discretion, to the replacement of the goods or the supply of equivalent goods.

## Fire

Normal Set NPE 45 is non flammable.

## Part Number

SLL1006