

MANUAL SECTION
Flooring

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NUPLEX SURESHIELD

9MM THICK HEAVY DUTY TROWELLED RESIN FLOORING

GENERAL

NUPLEX SURESHIELD is an extremely hard wearing, chemically resistant, in-situ, trowel applied, resin floor topping. Once applied and cured the Sureshield becomes an integral part of the building structure.

Sureshield is an industrial grade floor topping system specifically designed for the Australasian food industry. Sureshield resin is blended with specially graded silica quartz aggregates to product a floor system that is hard and durable, resistant to impact, abrasion, thermal shock and chemicals/food acids, yet is non porous, hygienic and easily cleaned.

This specification deals with:

1. Manufacture of Materials
2. Colours, Samples and Colour Patterns
3. Finish Options
4. Surface Acceptance
5. Surface Preparation
6. Application
7. Protection of Work
8. Special Facilities
9. Maintenance/Cleaning Procedure

1. MANUFACTURE OF MATERIALS

All materials shall be produced, supplied and specified by Nuplex Industries Ltd. Only materials manufactured, produced, supplied, approved or specified by Nuplex Industries Ltd may be used in the installation of Nuplex Sureshield flooring. Where materials are used other than those available from Nuplex Industries Ltd they are to be of premium quality and supplied by a reputable supplier/manufacturer. These materials shall be warranted by the supplier/manufacturer and approved by Nuplex Industries Ltd.

2. COLOURS. SAMPLES AND COLOUR PATTERNS

Sureshield is supplied as a "Standard Gold" colour however it can be modified with colour pigments or coloured aggregates to achieve a wide range of colours and patterns.

Care must be exercised in selecting very light/pastel colours as with any type of flooring light colours may result in a need for higher levels of cleaning etc in order to maintain a high level of appearance.

Submit for final approval prior to starting work a 300mm x 300mm sample of colour and pattern selected by the architect, engineer or client for their approval.

No warranty either expressed or implied or statutory is made by NUPLEX in this document except as expressly stated in any sale and purchase agreement entered into between NUPLEX and the buyer.

This document is a technical data information sheet. The description of the product or products and the properties of the product or products contained in this document is for the sole purpose of identifying the product or products and describing their property or properties and does not constitute a warranty that the product or its properties shall conform to that description, nor is the description of the product and/or its properties a warranty by NUPLEX that the goods are suitable for a particular purpose.

NUPLEX CONSTRUCTION PRODUCTS

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Special Colours can be selected from the BSS 5252 series colour charts or coloured sands available from Nuplex.

It is suggested that specifiers refer to Nuplex Industries for advice with customised colours.

3. **FINISH OPTIONS**

The surface finish on the Sureshield can be left as a smooth trowelled or varying degrees of slip resistant, textured finish to suit intended use. A special sealer coat is applied to aid cleaning.

The finished Nuplex Sureshield floor shall not vary more than plus or minus 5mm (gradual deviation) over a 3 meter span (NZS 3114:U3 or better).

As Sureshield is hand applied some trowel marks may be visible. This effect should fade with use.

Often a perfectly acceptable Nuplex Sureshield floor in a large area with one or more window walls will appear to have variations greater than the above tolerances.

It must be noted that Nuplex Sureshield will tend to follow the contours of existing substrates. For this reason it is important that the sub floor have the same surface tolerances as the Nuplex Sureshield to achieve the specified flatness. Non-conforming floors must be prefilled or levelled.

4. **SURFACE ACCEPTANCE**

The Nuplex Sureshield contractor is to inspect all areas to receive Nuplex Sureshield flooring and report any unsatisfactory conditions in writing to the main contractor (copied to Nuplex Industries Ltd) for necessary correction prior to installation of any work specified herein.

5. **SURFACE PREPARATION**

The surface shall be stable and sound.

Note: Ability of new or existing floors to take the loads as a result of the Nuplex Sureshield must be checked prior to installing.

All control joints junction cracks etc are to be treated in accordance with relevant section of this specification.

Nuplex Industries should be consulted when installing Nuplex Sureshield on any suspended floor slabs.

NEW CONCRETE (Refer to substrates section as appropriate)

Shall have a surface which has been mechanically trowelled to AS3610:1995 U3/NZ/3114:1987U3 finish or better then lightly broomed after compaction and screeding to assist with mechanical bond. Brooming is not required where preparation is achieved by captive shot blasting or other coarse abrasive methods.

A minimum Compressive strength of 25 MPA at 28 days cure.

A minimum cure time of 28 days.

Dry - moisture content must be less than 4% actual, 18% WME (wood moisture equivalent), or 75%RH.

All falls and levels to be accurately laid into the concrete.

A surface free of cement laitance or other contaminants and any roughly screeded or floated patches or areas.

No traces of cure membranes or release agents.

A suitable DPC membrane.

OLD CONCRETE REQUIREMENTS

Remove all contaminants including cement laitance, dirt, grease, oil, existing coatings/toppings, unsound substrate etc by captive shot blasting, grinding scabbling, acid etching, chemically washing, hammering etc as appropriate.

When acid etching ensure acid is not permitted to dry before removal. Ensure all traces of acid and contaminants are thoroughly removed, preferably by waterblasting. Ensure acid does not damage adjacent surfaces i.e. metal fittings, electrical switchgear etc.

Have a moisture content less than 18% or 75% RH.

Have an adequate DPC membrane.

Deep depressions, defects, hollows etc to be repaired or filled using Nuplex Epoxy Prefill system.

WOODEN FLOORS

Control joints in the wooden floor and Nuplex Sureshield topping should be at maximum 5m grids in any direction. (Refer to section 7.5 of this specification.)

Any joists, battens or any other supporting structure to be at no greater than 400mm centres.

Plywood sheets to be fixed to sub frame using suitable corrosion resistant screws and placed at maximum 150mm centres.

All joints (where possible) in the plywood sheeting are to be staggered to avoid weakness in the timber grids eg: brick pattern

Plywood a minimum of 18mm in thickness, ridged, free of cracks, deflection, and solidly screw fixed to the sub frame work.

Free of waxes, varnishes, paints and any other material likely to interfere with the fusion of the Nuplex Sureshield to the wood (a test area may be laid to determine this).

Have moisture content less than 12%.

Sanded smooth using coarse grit sanding paper.

Sheets are to be of an exterior grade. Slatted wooden floors such as T&G (refer Fig.1 page 16) should be overlaid using a suitable exterior grade plywood (or other suitable sheet material) solidly screw fastened to the existing floor. A 1-2mm gap is to be left between sheets. Suitable timber treatments include Tanalith (water based) type treatment. Treatments based on white spirit or other solvent carriers are not suitable for use with Nuplex Sureshield.

All joints to be slip joint taped (slip joint tape to be 20mm wide minimum), fibre glassed using 450gms m² chopped strand matt bandage and Nuplex Sureshield resin. Ensure joints between sub-floor sheets and the fibreglass are staggered. Minimum overlap onto ply with fibreglass bandage is 100mm.

Where Nuplex Sureshield is being installed onto plywood over battens, joists or bearers (refer Fig.2 page 17) the plywood is to be minimum 2 layers (total minimum thickness 18mm) laminated with all joints staggered to ensure maximum strength and integrity. All joints are to be fibre glassed using 450gsm chopped strand matt bandage (minimum overlap onto plywood 100mm).

METALS

Refer Nuplex Industries Ltd for specific recommendations.

CEMENT PLASTER

Treat as for new or old cement. Soundness of the plaster is important as the surface tension created by the Nuplex Sureshield may lead to failure of the plaster.

ASPHALT OR BITUMEN

Asphalt or bituminous surfaces are unacceptable substrates to receive Nuplex Sureshield finishes.

EXISTING TILES (CERAMIC/TERRAZZO)

Refer Nuplex Industries Ltd for specific recommendations.

6. APPLICATION OF NUPLEX SURESHIELD

Prime the properly prepared floor areas with minimum one coat of STZ Primer. Coverage rate and number of coats will vary depending on the porosity of the substrate, Maximum coverage 6m²/litre/coat. STZ Primer and STZ Hardener are to be thoroughly mixed in the correct proportions (1-3% on STZ Primer weight).

Wait until STZ Primer has gelled/set before overcoating.

Nuplex Sureshield must be applied in such a manner to achieve a minimum 8mm thickness. Use screed box, bars or install angle strips as a guide.

Accurately weigh and power mix until homogeneous Nuplex Sureshield Resin and STZ Hardener in the correct proportions:

	ApproximateM ² coverage
• Nuplex Sureshield Resin	3.5 kgs
• Nuplex STZ Hardener (on Sureshield Resin weight).	1-3%

Add selected Nuplex Blended Sand at the ratio:

- Floors - Nuplex STZ Floor Sand 21kgs
- **Coves** - Nuplex STZ Cove Sand 21 kgs

Note: Maximum Sureshield Resin:Filler (sand) ratio 1:6 parts by weight.

Resin, Hardener and Sand are to be blended in an efficient mixer to ensure all ingredients are homogeneously blended.

Apply Nuplex Sureshield flooring to correctly prepared and sealed substrate using a spreader box and/or a suitable glass, steel trowels, power float etc. Ensure the matrix is well compacted and free of ridges or unevenness. Successive mixes must be homogeneously blended together into wet Nuplex Sureshield mixes. Access to repair wet floor areas during installation can be achieved using crampons or special spiked shoes. Adequate lighting is to be provided to ensure defective surface finishing can be easily identified and corrected during the installation process. Lubricate tools and equipment used during the installation with sparing quantities of Styrene Monomer. Use Acetone only to clean tools and equipment.

Ensure all finished edges of the Nuplex Sureshield are supported to avoid damage. Nuplex Sureshield may be applied to skirtings, coves and upstands if required with the use of Nuplex STZ Coving Resin and specially formed trowels.

Optional coves and skirtings can be completed as the main floor is installed however they are best installed following installation of the floor. Floors must be protected during cove/skirting installation.

Once finished and hardened apply a minimum of 1 coats of Nuplex STZ Topcoat at a spread rate no greater than 6m²/litre/coat. Topcoat must be applied only to clean and dry surfaces.

QUALITY ASSURANCE

A log shall be kept by the licensed Nuplex Sureshield contractor and made available to Nuplex Industries Ltd at their request. Information to be recorded daily is:

1. Material batch numbers used.
2. Sequence of mixing, ratios and quantities and formula.
3. Substrate moisture content.
4. Substrate temperature.
5. Ambient temperature.
6. Ambient relative humidity.

TREATMENT OF CONTROL AND OTHER JOINTS

As Nuplex Sureshield is dimensionally stable control joints are only required where appropriate for the substrate.

Approved control joint sealant is Nuplex K130 or Pac Polyurea for use in conjunction with Nuplex Sureshield.

All control joints, movement cracks etc in the substrate are to be continued through the Nuplex Sureshield finish.

Any transitions between dissimilar flooring materials or structures are to be treated using a control joint.

Any seismic joints are to be specifically designed and approved by Nuplex Industries Ltd.

All joints are to be designed taking into account anticipated structural movement and capability of the K130 or Pac Polyurea joint sealant.

K130 and Pac Polyurea sealants have a movement capability of +/-5%.

All penetrations through the Nuplex Sureshield floor are to be positively sealed.

Non movement cracks in the substrate are to be fibreglass bandaged.

Cold joints in sections of Sureshield are to be sealed using Nuplex C81 Jointing Resin

7. PROTECTION OF WORK

The Nuplex Sureshield flooring contractor shall take reasonable steps to protect his work and the work of other trades during the time that his work is in progress. The General Contractor during this same time shall keep the floor areas free and clear of other traffic. Thereafter, until the building is completed, it shall be the responsibility of the General Contractor to protect the Nuplex Sureshield from damage, paint droppings, or other materials that may be hard to remove.

8. SPECIAL FACILITIES

The Main Contractor shall provide the Nuplex Sureshield contractor with adequate electrical power, lighting, water and dry, safe storage space for materials and equipment at close proximity to the work site.

9. MAINTENANCE/CLEANING PROCEDURE

Most conventional floor cleaning materials are suitable for use on Nuplex Sureshield floors

Prolonged use of highly alkaline or chlorine based cleaners should be avoided unless all residues from the cleaner can be removed soon after use.

Preferably a neutral pH sanitiser/detergent is recommended to ensure the long lasting durable properties of the Sureshield are

Any damage is to be reported to the Nuplex contractor as soon as practicable for necessary repair.

DURABILITY STATEMENT FOR COMPLIANCE WITH N.Z. BUILDING CODE

The products, systems and application of Nuplex Sureshield comply with the requirements of the N.Z. Building Industry Authority and related acts. In particular, two items of key importance are complied with. These are slip resistance and durability. The warranties implied by the "Durability" code are accepted and complied with. The factors required by the slip resistance code are also complied with, except as outlined under section 3 of this specification and Sureshield technical data.

This specification is to be read in conjunction with relevant product information, technical data, material safety data sheets etc and conditions of contract, which may be issued by the client.