

Technical Data Sheet

Nuthane MD Polyurethane Resin Flooring System



DESCRIPTION:

Nuthane MD is an industrial grade light - medium duty floor topping system specifically designed for the Australasian food and process industry.

Nuthane MD has a finer aggregate blend than the Nuthane SB or SBM and is generally left a smooth finish. However an aggregate broadcast may be used to obtain non-slip properties for certain application or subsequently use the Nuthane SBM or Nuthane SB options. Nuthane resin is blended with specially graded silica quartz aggregates to produce a floor system that is hard and durable, and resistant to impact, abrasion, thermal shock and chemicals/food acids. It is non porous, hygienic and easily cleaned.

TYPICAL FEATURES | BENEFITS:

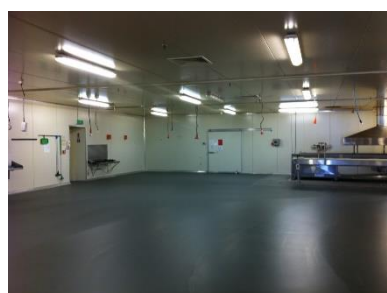
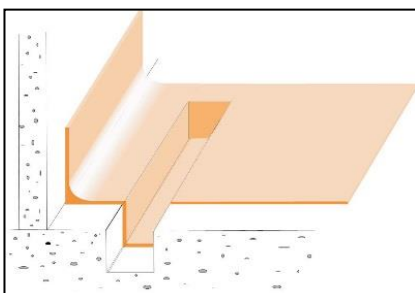
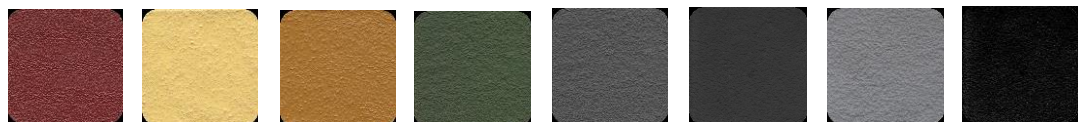


- Solvent free, no odour.
- Tolerant of application a slightly damp surface.
- Low temperature application.
- Application to new concrete.
- Dense and Impervious –Non Porous.
- Not moisture permeable.
- Easily cleaned and able to be water-blasted.
- Very good abrasion and scuff resistance.
- Cured Film is non-toxic
- High Adhesion and wear resistance.
- Excellent resistance to a wide variety of chemicals – refer to chemical resistance
- Appearance: Smooth Matt finish.
- Nuthane TF Gloss Topcoat for exterior applications or where exposed to UV.
- HACCP registration. 2014. Cleanroom Approved.
- Many years of use in NZ and Australia.
- Able to be formed into coving, plinths, sumps etc.
- Contains Sterishield as a bacterial growth inhibitor. Nuthane will not promote bacteria or fungal growth.
- Nuthane is supplied in coloured form. These are approximately matched to Australian AS2700 and British Standards BS5252.



Sample Colours:

Red 04C39 Cream Tan 08D44 Green 12B25 Curtain Call Mid Grey N45 Traffic Grey Black



PERFORMANCE DATA:

Minimum Application Thickness:	3mm
Minimum Application Temperature: Air	10°C
Maximum Application Relative Humidity: Air	85%
In-service temperatures:	3mm -20 to +70°C
Fire properties: Critical radiant flux: TEST METHOD ISO-9239-1	11 Kw/m ² - smoke value 41% min
Chemical Resistance	Resistant to chemical spillage –cured 7 days at 25°C. .Refer Chemical resistance chart
Electrical properties: surface resistivity	3 x 10 ⁸ Ohm
Adhesion to correctly prepared substrate	GB2567-2008. 2.77(KJ/m ²). - Concrete failure
Flexural strength	25MPa
Tensile strength	6N/mm ²

RECOMMENDED USES:

- Generally used as a smooth finish for hygiene areas with good cleanability.
- Predominantly dry floors.
- Cosmetic & Pharmaceutical & food and beverage processing plants.
- Dairy hygiene floors
- Food process floors where a high degree of hygiene is required. Approved by regulatory authorities.
- Ablution blocks: Kitchens | Laundries | Toilets
- Bakeries.
- Beverage Processing: Bottling Plants | Breweries | Fruit Juice | Wine etc.
- Cool Stores: - Freezers | Chillers etc.
- Commercial Kitchens: Main Kitchen | Freezers | Chillers | Cool Stores etc.
- Dairy Factory Floors. Main Process Halls/Rooms etc.
- Meat Processing: Abattoirs | Butchery floors | Poultry | Freezers | Chillers | Cool Stores etc.
- Seafood Processing: Wet Fish | Shellfish | Freezers | Chillers | Cool Stores etc.
- Sports facilities: Changing Rooms | Showers | Toilets for hard-wearability.
- Supermarkets: Bakeries | Deli | Fish | Meat | Freezers | Chillers | Cool Stores etc.
- Floors where a high degree of chemical, mechanical and slip resistance is of prime importance.
- Interior/exterior use. Concrete repair and protection – resurfacing damaged or broken concrete with a more physical and chemical resistant surface.
- Can be applied to new or existing sound concrete and also over old resin floors
- Suitable for use in dry or wet situations including ramps. (if an aggregate broadcast is used in wet situations)

LIMITATIONS:

- Nuthane MD will bond to sound concrete but will not bond to weak, friable concrete surfaces
- Concrete shall be cured however Nuthane will bond to damp concrete. Refer to allnex as we may give advice in specific applications.
- Nuthane will bond to concrete that is 7 days old as long as specific concrete design and installation specifications are adhered to. It should be emphasised that success in this application is fully attributable to concrete design.
- Application to unstable or defective substrates without approved remedial treatment prior to installation.
- Nuthane MD is a slurry material and will not fill excessive floor undulations and/or slopes Refer: Sureshield | Supascreed or Nuthane T for trowel-on materials.
- Application over existing coatings/toppings (refer to allnex) or over concrete cure or release agents without allnex approval or over ceramic tiles without specific written allnex design specification.
- Choose the Nuthane grade that suits the intended application.
- Nuthane Matt Finish will yellow upon exposure to UV.
- Use Nuthane TF Gloss Topcoat in exterior situations or where exposed to UV conditions
- Nuthane may be used in many circumstances, interior and exterior. But do be aware of yellowing colour changes on exposure to UV light if the Matt finish is chosen. This does not affect performance durability.

COLOURS:

- Beige RAL1001
- Black
- Mid Grey N45
- Tan 08D44
- Koala Grey 10A07
- Traffic Grey
- Cream
- Curtain Call
- Green 12B25
- Red 04C39

HEALTH & SAFETY: Refer safety data sheets (SDS).

- Wear appropriate safety equipment and clothing
- The use of fans to provide positive forced air draft and/or extraction is recommended.
- Avoid skin contact.

SURFACE PREPARATION:

Prepare concrete by mechanical abrasion method to:- **CSP4-5**. (Concrete Surface Profile Scale - International Concrete Repair Institute)

See technical literature:- http://www.allnexconstruction.com/pdf/Floor_Preparation_Requirements.pdf

Remove all concrete curing agents, contaminants and any other material likely to affect the adhesion of the Nuthane MD.

Do not apply over existing coating without checking compatibility.

Prefill any large divots with K125 epoxy mortar and diamond grind to remove any highpoints or contaminants.

Install Anchor recess grooves 5mm wide by 6-8mm deep at all walls, both sides of control joints, columns etc. Installed at 50mm running parallel to walls control joints etc.

Note

Nuthane will bond to damp concrete but take care with weak, uncured concrete.

Please follow this guidance:

Wet and uncured concrete (when less than 28days)

Allow no further wetting- (rain). The concrete design must be controlled for early cure and low water content. The engineer must ensure that the concrete has: a Low water / cement ratio, is a high strength and rapid setting concrete, contains water reducing agents and early curing agents. It must be certified by the concrete placer that the above has occurred. For the warranty, above, to apply certification of the engineered concrete must occur and allnex and its contractor must see evidence of its formulation and correct installation. Scabble or shot blast the concrete to "open the surface" and use fans to dry the surface for >24hours.

COVES:

Where required:

See technical literature – Details:- http://www.allnexconstruction.com/pdf/Details_resin-floor-topplings.pdf

Install Coves:

- Supascreed

Install allnex cove upper termination metal strips: **5.2mm or 9.2mm rebated strip**.

Use a rebated wall cut if the coving strip cannot be used.

Install fibreglass CSM cloth in floor/wall internal junctions. (Required on surfaces other than Concrete upstands)

STZ PREFILL: (for adding falls, slope modification and floor angles)

Where required:

STZ prefill system types: See STZ technical literature. http://www.allnexconstruction.com/pdf/stz_prefill.pdf

The falls must be specified pre-tender. (Nuthane is medium build floor topping system and prefill may involve significant extra materials). The quantities of materials required to raise the floor height at wall perimeters is often underestimated. To do this may involve significant extra costs and should be discussed and agreed. It is a very common for STZ prefill system to be used under Nuthane to create falls to drains and other filling applications. Normally for new work falls are laid in the concrete and fall to drains. However in refurbishment the drains and falls are incorrect. Sometimes new drains are installed. The Prefill create falls of at least 1: 50 to ensure no ponding water. (1:100 will fall but will have standing water in places).

QUALITY ASSURANCE:

The allnex Licensed Contractor shall ensure all QA checks have been undertaken prior to the installation process and subsequently during the installation process. The completed documentation must be made available to allnex and the client/clients authorised personnel.

The product is to be installed within the required control range to ensure a fully cured hard wearing monolithic floor topping system.

Information to be recorded daily is:

- Concrete sub-base or prefill mix.
- Material batch numbers used.
- Sequence of mixing, ratios and quantities and formula.
- Substrate moisture content & Substrate temperature.
- Ambient temperature | Ambient relative humidity.
- Daily detail of licenced contractors on-site.

PRIMING:

** If required on weak or porous concrete**

Use Supascreed primer (Solvent Free) at 5-6m²/Lt. Allow to fully dry (turns clear from white) before application of the Nuthane MD system.

NUTHANE MD BASECOAT: MIXING RATIO AND COVERAGE @ 3mm

Material	Mix
Nuthane Resin	8kg
Nuthane Hardener	8kg
Nuthane MD Aggregate	16kg
Mix Total kg	32kg
Mix Coverage	6.0 - 6.4m ²

CONDITIONING OF MATERIAL:

Materials should be conditioned to >16°C. Unconditioned materials will be difficult to apply.

MIXING METHOD:

Add Nuthane Resin (Part A) and Nuthane Hardener (Part B) to a suitable container. Power mix at low speed (approximately 300-500rpm) for 1 minute ensuring both compounds are homogeneously blended and the colour is uniform. Scrape the pail sides with a long broad-knife and then add the Nuthane MD Aggregate. Mix for a further 1 minute slowly to avoid air entrapment.

Note: ensure no unmixed materials remain on the sides, rims or lips of the containers.

APPLICATION METHOD:

Pin-rake | Trowel

Pour onto the prepared and primed surface and spread evenly using the appropriate method to obtain a minimum 3mm finish. Ensure the matrix is well compacted and free of ridges or unevenness. Successive mixes must be homogeneously blended together into wet Nuthane 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. Keep equipment used during the installation clean to prevent lumps developing.

If applying at low temperatures, ensure good forced air cross draft to ensure a strong cure.

SLIP RESISTANT FINISHES: (If Required)

Once levelled, broadcast evenly K20s aggregate (or see below for non-slip options) into the wet surface at a rate of 3-4kg /m². Broadcast until refusal and no more wet resin appears. This is a heavy application rate. Work carefully to keep a clean working edge.

Rating	Non-slip Media	Quantity m ²	Application
R11	K20s sand	4 kg	Broadcast into the wet basecoat
R13	18/36 aggregate 16 Grit Silicon Carbide 50 /50 Blend	4 kg	Broadcast into the wet basecoat
R13+	7/14 aggregate **More aggressive non-slip can be achieved with 16 grit Aluminium Oxide.	4 kg	Broadcast into the wet basecoat

PRODUCT PROPERTIES:

Pot Life	25°C – 50%RH	20 – 30 minutes
Hard Dry	25°C – 50%RH	3 hours
Light Foot Traffic	25°C – 50%RH	6 hours minimum
Full Use	25°C – 50%RH	>12 Hours
Recoat	Anytime within 24 hours. After 24 hours: Severe mechanical abrasion	
SG kg/litre	1.65	
Solid Content	100%	
Clean Up	Solvent HA	
Dangerous Goods Class ~ Supascreed Primer ~ Nuthane Resin ~ Nuthane Hardener ~ Nuthane MD aggregate ~ Nuthane Catalyst ~ Nuthane Topcoat Filler ~ Supadeck TF Hardener	Hazard Class 9 Packing Group III Hazard Class 9 Packing Group III Hazard Class 6.1 Packing Group II Not regulated Not regulated Not regulated Not regulated	
Packaging ~ Supascreed Primer ~ Nuthane Resin ~ Nuthane Hardener ~ Nuthane MD aggregate ~ Nuthane Catalyst ~ Nuthane Topcoat Filler ~ Supadeck TF Hardener	6.4kg Kit – contains 2 x plastic containers 20kg Plastic container 20kg Plastic container 16kg NZ - Plastic lined paper bag 500ml Metal container 4kg Plastic container 2.75kg Metal container	
Shelf life	12 months from date of manufacture. (After this period consult with allnex).	

TOPCOATING:

Generally Nuthane MD is not Top-Coated as it is left as a smooth plain matt finish.

If the Nuthane MD has been aggregated to provide a non-slip finish then it will require Top-Coating.

OPTIONAL: Gloss and colours not available in the Nuthane system:

A gloss finish and/or bright colours may be required (e.g. hygiene areas, cleanability, smart appearance etc.)

If so, then top-coating is required.

Gently disc off (sand) the cured Nuthane and prime with SPS primer.

Apply one coat of Surecote 200 in the specified colour. (0.2 -1.0mm as required).

The finish will then be smooth and glossy but not slippery.

Or

Use one of the systems noted below:

Refer: allnex Construction Products for specific advice for your application.

Topcoat System Options:

System #	Topcoat Type	Finish	Base	Odour	Light Stability
1.0	Nuthane Topcoat TF	Gloss	Uses Nuthane resin	No Odour	UV stable
2.0	Supadeck UV Topcoat (see separate datasheet)	Gloss	Uses separate topcoat system	Solvent odour	UV stable
3.0	Surecote System 500AR (see separate datasheet)	Gloss	Uses separate topcoat system	No Odour	Some slow yellowing

Topcoat: System 1.0**Nuthane Gloss Topcoat - Mixing Ratio and Coverage:**

Nuthane Resin	1.5kg
Nuthane Catalyst	0.2% - 0.6% - see chart below
Supadeck TF Topcoat	2.75kg
Nuthane Topcoat Filler	1.5kg
Mix Total kg	5.75kg / 4 litres
Mix Coverage	2.0 - 2.5m ² / litre - dependent on aggregate over-seed choice
~ First Coat	4.0 m ² / litre
~ Second Coat*	
*Second Coat is optional, however; this will provide a more even and uniform finish.	

TF Topcoat Catalyst Additions:

Catalyst addition to resin ratio	Addition rate to full 20kg pail of resin	Pot life (Minutes)	Touch dry time (hrs)
0.2%	40 grams	21	6.5
0.3%	60 grams	18	5.5
0.4%	80 grams	16	5
0.5%	100 grams	13	4.5
0.6%	120 grams	10	4

****Note****

The catalyst is needed in the resin to obtain good cure times. Failure to add that catalyst will result in cure not occurring.

It may be more convenient to add the catalyst to a full pail (20kg) of Nuthane resin.

****Note****

The Nuthane ****Gloss Topcoat System**** should be thinned with Mineral Turps at a maximum percentage of 5% to aid application.

(i.e. on total mix: 4 litres of mixed topcoat = 200mls mineral turps)

Mix components well.

****Note****

Nuthane Topcoat is roller applied using a double armed roller so that force may be used to apply a thin even coat.

Do not allow to pool or puddle as thick applications may blister.

Take care to apply a thin even film to avoid curing blisters. If brushing coves, then follow by back-rolling.

FIXING OF PLANT AND MACHINERY:

Mechanical fixings into the floor must be resin fixed. This is to ensure that there is no water migration into the substrate.

Conventional expanding plugs, screws or anchors are not an acceptable fixing method.

MAINTENANCE and CLEANING:

Resurfacing:_

- Resurfacing may be undertaken with a further new layer of Nuthane MD to the prepared older surface.
or
- The Nuthane MD may be resurfaced with a non-slip by aggregating with Nuthane Topcoat which is a high durability and chemically resistant finish. It offers very good adhesion to the _prepared older surface.

Repairs:

Can be undertaken with further new Nuthane applied directly.

Cleaning:

A Nuthane floor is cleaned with stiff bristled brushes and detergents. The stiff bristle brushes and commercial detergents will remove dirt from the non-slip surface that a soft mop will not. The waxed nature of our top-coating system may attract dirt during the early life of the product. Pay careful attention to cleaning at this stage. (Refer to the Resin Flooring Cleaning document on our website).

PRODUCER STATEMENT:

allnex Construction Products state that Nuthane is compliant with E3 (internal water) and D1 (Access routes / slip resistance wet & dry). Complies with CLEANROOM and controlled environment AS/NZS ISO 14644.4: 2002 section E.2.1.4 Floors. That the floor shall be non-porous, slip resistant, abrasion resistant and resistant to chemicals. They shall support static and dynamic loads. Complies with fire ratings.

Date: Nov 2019

Replaces: Dec 2017

Allnex Construction products, a Division of Allnex New Zealand Ltd

Auckland - 14 Industry Road Penrose phone: 095836544. Hamilton - 18 Somerset Street Frankton phone: 07-847-8658

Wellington - 19A Jamaica Drive Grenada North phone: 04-240-0305. Christchurch - 112 Carlyle Street Sydenham phone: 03-366-6802

Customer Service: 0508-882-288 cs.constructionnz@allnex.com

www.allnexconstruction.com

The logo for allnex, featuring the word "allnex" in a bold, white, sans-serif font. Above the letters "i", "l", and "x" are three horizontal bars in red, green, and blue respectively.

DISCLAIMER: This information appearing in this Document (**Details**) concerning the product which is the subject of the Document (**Product**) is either based on present technical knowledge and tests done by allnex or tests done by, and data supplied from third parties including you, the customer. Since the actual use by you and by others of the Product is beyond the control of allnex, no warranty or representation, express or implied is made by allnex regarding the suitability for such use, nor does allnex accept any liability arising out of the use by you of other products or materials, whether third party or not, that may be referred to in this Document. allnex recommends that you carry out your own tests as to the suitability of the Product for your purpose, regarding which you accept full responsibility. In addition, if any of the Details appearing in the Document are based upon tests done by, and/or data supplied by any third party, allnex provides no warranties or representations in connection with those Details and you, the customer waives any right you may have against allnex in connection with the accuracy, completeness or otherwise of the Details. The information in this Document is not to be construed as absolutely complete or accurate since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations affecting use of the Product. allnex does not provide any warranty or representation to you that the Product does not infringe the intellectual property rights of any third party. All orders accepted shall be subject to the standard conditions of sale of allnex which are on the back of our invoice. In accepting the Product, you, the customer acknowledge and agree: a.) The Product is or may be of a hazardous nature and that you, the customer, are responsible for the disposal of the container housing the Product in accordance with the requirements and regulations of the relevant supervising government. b.) The Product has a limited shelf life and must be stored strictly in accordance with the guidelines and specifications related to it. c.) Where the Details relate to Product tested by allnex, those Details are indicative only, regarding which there may be batch to batch variation. d.) allnex gives no warranty or representation as to the applicability for the particular use by you, the customer, of the Product and you the customer shall be responsible for ensuring that the Product is fit for your intended use. e.) allnex's liability for breach of any term, condition, guarantee or warranty (express or implied and concerning the information in this Document or the Product more generally) including any liability for direct or indirect consequential loss (including indirect loss of profits), is limited to the maximum extent permitted by law and, at allnex's election, to either replacing or repairing the goods or paying the cost of replacing or repairing the goods, or in the case of services, supplying the services again.