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RAPIDFLOOR MMA Multipurpose Resin Floor Topping

DESCRIPTION: RapidFloor MMA is a seamless floor topping system specifically designed for rapid-setting general purpose flooring.. RapidFloor MMA resin is blended with specially graded silica quartz aggregates to produce 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. RapidFloor MMA is fully bonded to the concrete to prevent water creep.

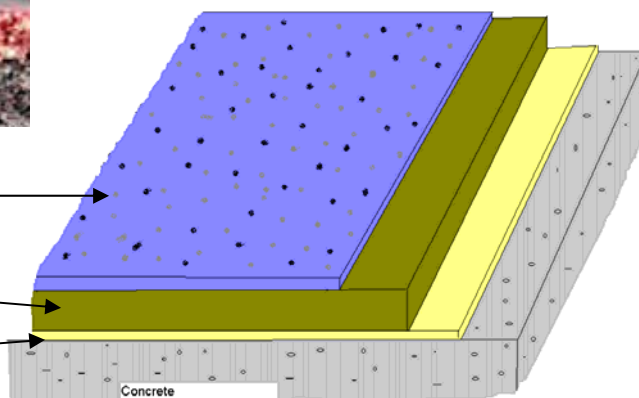
May be used as a clear finish, colour aggregated (non-slip (normal version)) or as a plain coloured (non-aggregated finish). This product is applied by the roll & broadcast technique or a trowelled slurry.

RECOMMENDED USES:

- Exterior or interior non-slip flooring.
- Decorative non-slip flooring.
- Food and beverage processing plants., Meat works, abattoirs, butchery floors, bottling plants, breweries,
- Freezers, chillers, coolstores
- Dairy factory floors.
- Ablution blocks, kitchens, laundries. Supermarkets: Bakeries, Fish, Meat, deli etc
- Toilets, changing rooms, sports facilities for hard-wearability.
- Floors, walls, upstands, plinths etc where a high degree of chemical, mechanical and slip resistance is of prime importance.
- Food process floors where a high degree of hygiene is required. Approved by regulatory authorities.
- 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, timber or other surfaces.
- Suitable for use in dry or wet situations including ramps.
- Will form coves to any required height or radius.
- Floors above work spaces: RapidFloor MMA forms a watertight barrier and is compliant with E3 Internal water 3.1.1.e. (use full fibreglass laminated floor and Joint safe tape in these situations).



Non-slip and chemically resistant topcoat
 Bodycoat for impact resistance
 Primer for adhesive strength



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- **TYPICAL PHYSICAL PROPERTIES/ FEATURES:** *RapidFloor MMA is a medium duty monolithic 2-5mm (see later) thick floor topping based on Methyl Methacrylate polymers. This resin system offers the following properties:*
- **Very Rapid Cure:** Full system may be installed within a 3-6hr period. (Depending on floor size).
- **Low Temperature application:** The system will cure down to minus 25°C. (Special techniques needed).
- Excellent chemical resistance.
- Excellent abrasion resistance
- Excellent adhesion to properly prepared substrates.
- Easily cleaned. See comments at end. Waterblast resistant.
- Excellent slip resistance. Confirm degree required in specification.
Aggregate Finish: 0.73
- Good resistance to thermal shock. When cured, will perform at all in-service temperature ranges. Range: -30°C to +90°C. However thicker toppings will perform better.
- Cured film is non-toxic.
- Not moisture permeable.
- Moisture absorption: 0.04% as per ASTM D570-63
- Flexural strength: 25Mpa
- Weight per m² @ 3mm thickness: 10kgs
- Co-efficient of expansion $2.23 \times 10^{-5}/C$ between 20°C and 60°C when heated at 1°/minutes.
- Minimum thickness: 2mm to 5mm
- Colour: Natural Gold; or other colours dependant on aggregate selection.

******Note****** Special treatments may be required on some ramps in **wet** situations in order to comply with slip resistance requirements of AS/NZ 3661.1:1993. Specific advice must be sought from Nuplex Industries Ltd, Construction Products Division prior to specifying in this situation. See page 1

LIMITATIONS and Special Cares:

- Medium duty flooring: Heavy duty floorings: Sureshield, Industrial Terrazite & Nuthane.
- A full primer coat must be applied for full and even cure. 2.5m²/lt
Nuplex recommends double priming (2 coats) to ensure full cure. 4m² /Lt / coat.
- Ensure forced area movement is created, even in corners, to ensure no "dead areas" that will not cure correctly.
Application to uncured concrete (minimum recommended cure 28 days). However damp (but cured concrete) is satisfactory as long as the surface is dry.
- Application to unstable or defective substrates without approved remedial treatment prior to installation.
- RapidFloor will not cure below minus 25°C. Note : special procedures are needed for applications between 50c and -25c.
- A strong smell persists for 1-2 hours maximum.
Application where fumes may contaminate adjacent foodstuffs (refer to Nuplex Supascreed or Nuthane for odour free installations). This only applies in the installation stage (up to 3 hrs after laying). Fatty foods are more prone than wet products to tainting by odour absorption into the fat/oil component.
- Application over existing coatings/toppings – refer to Nuplex.
- Over concrete cure or release agents without Nuplex approval.
- Over ceramic tiles without specific written Nuplex design specification.
- Refer to Nuplex chemical resistance data.
- **Important Note:** All floors must be double primed. If not, then soft patches or slow curing may occur in the bodycoat. Wait until RapidFloor MMA Primer has become tack-free before overcoating.
- Ensure the correct catalyst level for the conditions.. Patchiness may be due to insufficient catalyst.



CHEMICAL RESISTANCE CHART

2009

Test procedure involves total immersion of the polymerized sample in a test medium at 25 Deg C. The sample were observed for chemical attack and hardness throughout the testing period. The results below were taken after 3 weeks exposure:

Test Media	conc.	Rapidfloor MMA
ACIDS		
Hydrochloric Acid	10%	U
Sulphuric Acid	10%	U
	25%	U
Acetic Acid	10%	U
	50%	M
Nitric Acid	10%	M
Citric Acid	10%	U
Lactic Acid	90%	U
Phosphoric Acid	30%	U
ALKALIS		
Potassium Hydroxide	30%	U
Caustic Soda	50%	U
SOLVENTS		
Ethanol		A
Toluene		D
Acetone		D
Isopropanol		A
PETROCHEMICALS		
Kerosene		U
DISINFECTANTS & CLEANERS		
Detergent (DET 18)	100%	U
Bleach (2.5% Sod Hyd Cl)		U
MEKP - M50		U
SALT SOLUTION		
Brine	20%	U
OTHERS		
Sugar Syrup	30%	U
Distilled Water		U

LEGEND

U = Unaffected (i.e. after 3 week exposure the samples have not changed)

M = Marked (Short term exposure, the test media will leave a mark on the sample)

A = Attacked (Short or long term exposure, the mechanical properties will deteriorate)

D = Destroy (Short or long term exposure, damage will occur)

PREPARATION

All substrates shall be stable and solid.

Note: The ability of new or existing floors to take the loads as a result of the Nuplex RapidFloor MMA must be checked prior to installing. All control joints junction cracks in the substrate etc are to be properly treated .

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

CONCRETE

Shall have a surface which has been mechanically trowelled to AS3610:1995 U3/NZ/3114:1987U3 finish or . Then preparation is achieved by captive shot blasting or other coarse abrasive methods. Eg Diamond grinding.

RapidFloor will not adhere to curing or release agents.

Concrete shall be cured for a minimum of 28 days prior to laying RapidFloor MMA. The moisture content shall be less than 75% RH. (Refer Nuplex Bulletin on application options on wet or uncured concrete).

Plywood or Timber: consult Nuplex for information

Note: If the substrate is an above grade slab and waterproofing is required to comply with NZBC E3, the tank the floor and cove upstands with a layer of 450gsm CSM fibreglass. This will provide a seamless waterproofing layer.

Ensure the floor is clean, dry and prepared as above.

Install Nuplex **cove** upper termination metal strips: **5.2mm, 8.8mm or 9.2mm rebated strip** are available (see separate details drawings). Use a rebated wall cut (see details) if the coving strip cannot be used.

Install fibreglass CSM cloth in floor wall internal corners.

RapidFloor can be applied over any common old resin floor topping as long as it is thoroughly checked for soundness and grinding or Shotblasting is applied to the old surface.

APPLICATION: This product is applied by the:

Roll & broadcast (spread & sprinkle) technique or Slurry & Broadcast technique.

Prime the properly prepared floor areas with TWO coats of RapidFloor MMA Primer. Coverage rate and number of coats will vary depending on the porosity of the substrate,

Coverage 4m²/litre/coat. Primer and its hardener are to be thoroughly mixed in the correct proportions (2.5 -5% on RapidFloor MMA Primer weight; see below).

Important Notes: All floors must be double primed. If not, then soft patches or slow curing may occur in the bodycoat. Wait until RapidFloor MMA Primer has become tack-free before overcoating.

Ensure **full forced air** is blown into all areas at all times until full cure is complete. This ensures that there are no "dead still areas" where a full cure may then not occur. Moving air is important.

BODYCOAT version 1 Roll & Broadcast (spread & sprinkle)

Nuplex RapidFloor MMA must be applied in such a manner to achieve a minimum 2-3mm thickness. Apply mixed RapidFloor MMA resin with a roller or notched trowel. Accurately weigh and power mix until homogeneous Nuplex RapidFloor MMA Resin and MMA Hardener in the correct proportions:

Normal conditions

Approximate M² coverage

Nuplex RapidFloor MMA Resin

1.0 – 1.2 kgs

Nuplex MMA Hardener

2.5 % in warmer temperatures ; up to 5% in cold conditions

(on RapidFloor MMA Resin weight or volume). The catalyst may be added by weight or volume: see chart:

On 5kg resin	By weight	By volume
@2.5% addition rate	125grm	175ml
@5% addition rate	250grms	350ml

Catalyst measurement needs care for repeatable and controllable results. Using 250ml scaled polyethylene kitchen measuring jugs will give controlled results.

Freezing conditions

Below zero add RapidFloor accelerator @1% and use the 5 % catalyst level.

Apply Nuplex RapidFloor MMA flooring to correctly prepared and sealed substrate using a notched trowel or roller. Apply the Quartzzite or other aggregates by the broadcast technique into the wet resin to refusal. WORK QUICKLY. 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 MMA Monomer. Use Acetone only to clean tools and equipment.

Resin may be coloured by using B1TTP tinters. A rate of no more than 5% is all that is required.

Ensure all finished edges of the Nuplex RapidFloor MMA are supported to avoid damage. Nuplex RapidFloor MMA may be applied to skirtings, coves and upstands if required with the use of Nuplex Supascreed 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.

BODYCOAT version 2 Slurry & Broadcast

To apply by the slurry method the resin is mixed with catalyst normally. This mixture is then mixed with a special blend of aggregates (refer to Nuplex) and this is then trowelled, notched or slurred into place.

This aids with “pit and hole” filling and gives a more even surface. Broadcast aggregates of the chosen type to complete.

Topcoat: (for both versions) Once finished and hardened apply 1 coat of 2.5-5% catalysed Nuplex RapidFloor MMA Topcoat at a spread rate no greater than 3.5m²/litre/coat. Topcoat must be applied to the RapidFloor bodycoat promptly to avoid contamination.

Optional: Additional topcoats can be applied if a smoother surface profile is required.

Joints: All concrete control and construction joints should be carried through the RapidFloor MMA K130 Epoxy Gold for control joints.

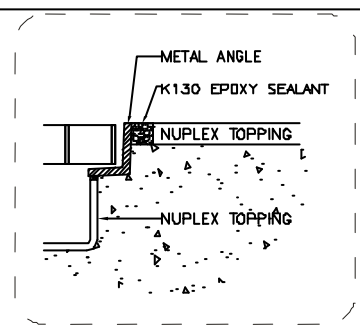
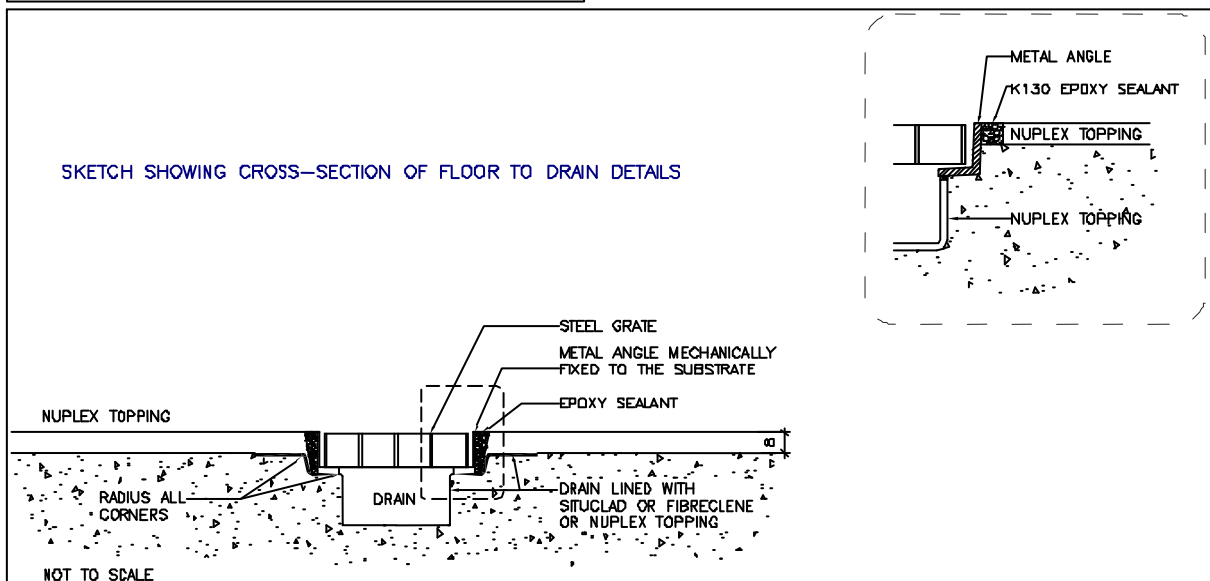
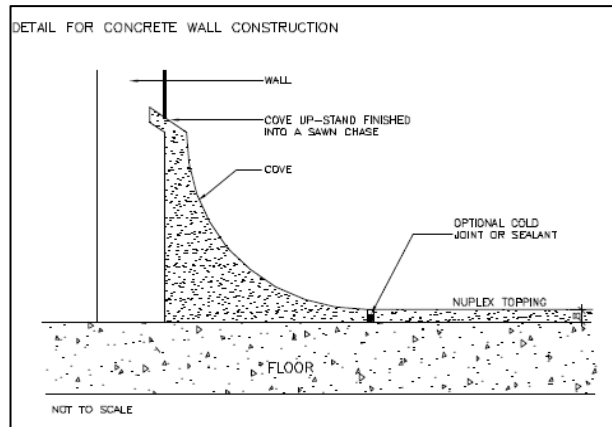
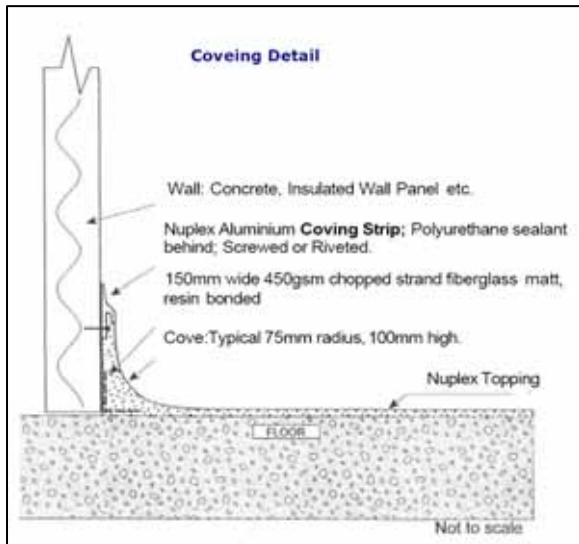
Topping Thicknesses:

Roll & broadcast: 2mm to a maximum of 3mm with coarse aggregates.

Slurry and Broadcast: 3-4mm up to 5mm with a coarse (2-3mm) aggregate.

Note well: that using coarse aggregates to achieve a higher film build will lead to a rougher finish.

Sample details: For more details see the website: resin floors /industrial toppings / “cove and install details” for more options.



QUALITY ASSURANCE: A log shall be kept by the licensed Nuplex RapidFloor MMA 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.

THINNING cleanup: Do not thin. Lubricate tools with MMA Lube (mixer and barrows). Cleanup with acetone.

CURE AND DRY TIMES: (20°C 60% RH) Workable pot life: 10-15 minutes, Hard Dry: 1 hour

Light foot traffic: 2 hours, Recoat: within 2 hours, Full Use: 3 hours

- **HEALTH & SAFETY:** Overalls are recommended when using this product. Wear gloves if this suits the user as the material will bond strongly to skin.
- Fumes may be cloying in enclosed areas. The use of fans to provide positive forced air draft and/ or extraction is recommended. The levels of fumes have been shown to be well below recommended levels.
- Flammable 3C. Erect "No Smoking" signs. No welding or naked flames permitted during installation. Have fire extinguishers readily available.

SHELF LIFE: 12 months in unopened containers. After this period suitability for use should be checked in consultation with Nuplex Industries Ltd.

PACKAGING: Resin: 18kg metal pails, 180 kg drums. Catalyst: 25Kg boxes.

Example material check for, Eg 100m², of roll and sprinkle non-slip flooring

RapidFloor primer	25 lts
RapidFloor body resin	110 lts
Quartzzite fine aggregates	200 kg
RapidFloor topcoat	28 lts
RapidFloor catalyst	7kg

Maintenance and Cleaning

Repairs can be undertaken with further new RapidFloor MMA applied directly or use K20 Epoxy repair system.

Cleaning: A RapidFloor MMA 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 topcoating system may attract dirt during the early life of the product. Pay careful attention to cleaning at this stage. Refer to the Cleaning document on our website.

PRODUCER STATEMENT

Nuplex Industries Ltd state that RapidFloor MMA is compliant with E3 (internal water) and D1 (Access routes / slip resistance wet & dry) and is suitable for food process floors.

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