



**Application of
NOVOPLAN 21**
A fast-hardening,
self-levelling
compound



A) PRODUCTS AND TOOLS :

	SUBSTRATE/ PRODUCT	TOOLS			
SUBSTRATE PREPARATION	 Concrete / Cementitious Screed	 Grinder	 Sanding Machine	 Terazzo Grinder	 Vacuum Cleaner
		*(Refer to Table B)			
PRIMING COAT	 PRIMER G	 Measuring Bucket	 Clean Mixing Bucket	 Long Hair Roller	
LOCALISED REPAIRS	 PLANIPREP SC	 Measuring Bucket	 Clean Mixing Bucket	 Single Paddle Mixer	 Steel Trowel
LEVELLING COMPOUND	 NOVOPLAN 21	 Measuring Bucket	 Clean Mixing Bucket	 Single Paddle Mixer	 Notched Trowel
		 Spike Shoe	 Standing Leveller	 Spike Roller	

SUBSTRATE EVALUATION AND REPAIR OF SURFACE DEFECTS

	SUBSTRATE EVALUATION	
Aspect	New Substrates	Old / Existing Substrates
SUBSTRATE TYPE/ CONDITION	Concrete slab or cementitious screed.	With existing carpet, vinyl etc.
SUBSTRATE EVALUATION & PREPARATION	<ol style="list-style-type: none"> Sand/grind the surface to remove laitance & loosely adhering particles. Test surface absorbency (water droplets test): <ol style="list-style-type: none"> If the surface is absorbent, it is ready for priming. If it is not absorbent, further treatment is needed e.g. grinding. Test moisture content (m.c.) in substrate: <ol style="list-style-type: none"> If m.c. is < 4%, prime with 1 or 2 coats of Primer G depending on absorbency. If m.c. is ≥ 4%, prime with Planiseal VS MY after making sure the substrate surface profile meets CSP #2 to #3. 	<ol style="list-style-type: none"> Completely remove the existing flooring and the glue or adhesive by sanding or grinding. Vacuum clean. Test surface absorbency (water droplets test): <ol style="list-style-type: none"> If the surface is absorbent, it is ready for priming. If it is not absorbent, further treatment is needed e.g. grinding. Test moisture content (m.c.) in substrate: <ol style="list-style-type: none"> If m.c. is < 4%, prime with 1 or 2 coats of Primer G depending on absorbency If m.c. is ≥ 4%, prime with Planiseal VS MY after making sure the substrate surface profile meets CSP #2 to #3.

Note: for further information please consult Mapei Technical Service

REPAIRING OF SURFACE DEFECTS

Shrinkage Cracks,
<0.3 mm crack width



Planiprep SC

- i) Roughen, clean and pre-wet the substrate to SSD condition (no water ponding).
- ii) Mix 4.5 kg **Planiprep SC** powder with 2.6 to 2.8 liters of clean water until homogeneous with a low speed mixer.
- iii) Apply the mixed mortar with a metal trowel, force the material into the surface, scratch to zero over the crack, and smoothen to finish.
- iv) The substrate is ready for the next phase after 2 hours curing.

Surface Cracks,
0.3 mm - 1 mm crack width



Planiprep SC + Mapenet 150

- i) Roughen, clean and pre-wet the substrate to SSD condition (no water ponding).
- ii) Mix 4.5 kg **Planiprep SC** powder with 2.6 to 2.8 liters of clean water until homogeneous with a low speed mixer.
- iii) Fill the crack with **Planiprep SC**, and skim a layer of **Planiprep SC** 100 mm wide over the crack with a metal trowel. While the material is still fresh, embed **Mapenet 150** on the surface and apply another layer of **Planiprep SC** to cover it with a metal trowel. Lastly, smoothen the surface with metal trowel.

Note : for further information please consult Mapei Technical Service

Localised low spots,
<5 mm thickness



Planiprep SC

- i) Roughen, clean and pre-wet the substrate to SSD condition (no water ponding).
- ii) Mix 4.5 kg **Planiprep SC** powder with 2.6 to 2.8 liters of clean water until homogeneous with a low speed mixer.
- iii) Apply a scratch coat on the surface with a metal trowel and then continue to apply more of the mixed mortar to the desired thickness (not exceeding 5 mm). Smoothen the surface with a metal trowel.
- iv) The substrate is ready for the next phase after 2 hours curing.

REPAIRING OF SURFACE DEFECTS

Localised patch repairs,
5 - 10 mm thickness



Mapegrout Patch 218

- i) Where necessary, cut the repair area to avoid feather-edging. Roughen, clean and pre-wet the substrate to SSD condition (no water ponding).
- ii) Mix 25 kg of **Mapegrout Patch 218** powder with 3.5 to 4.0 liters of clean water until homogeneous with a low-speed mixer.
- iii) Apply the mixed mortar with a metal trowel, tamping down to make sure the repair area is completely filled without voids. Smoothen the surface with the trowel.
- iv) The repair area is ready for the next phase after min. 3 days curing.

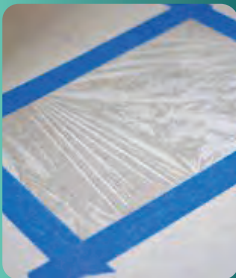
Topping up existing floor level,
> 10 mm thickness



Topcem Pronto 305

- i) Roughen, clean and pre-wet the substrate to SSD condition (no water ponding).
- ii) Apply a layer of bonding slurry prepared by mixing **Planicrete SP** : water : **Topcem Pronto 305** in the ratio 1:1:3. The topping screed must be laid down while the bonding slurry is still fresh.
- iii) Mix each 25 kg bag of **Topcem Pronto 305** with 3.5 to 4 liters of clean water in a pan mixer until homogeneous.
- iv) Apply the mixed **Topcem Pronto 305** on the substrate with a trowel, and tamp and compact the surface.
- v) The topping screed is ready for the next phase after 7 -10 days, depending on ambient conditions.

Substrates with high
moisture content (≥ 4%)



Planiseal VS-MY (moisture-reduction barrier)

- i) Roughen and clean the existing substrate.
- ii) Fully mix the two components of **Planiseal VS-MY**, part A (4 kg) and part B (1 kg), with a low speed mixer until homogeneous.
- iii) Apply the mixed **Planiseal VS-MY** resin at a rate of 0.4 kg/m² with a metal trowel and short hair roller. Check the application to make sure all areas are treated. Wait 24 hours for curing.
- iv) Apply 0.2 kg/m² of **Planiseal VS MY** with a metal towel and short hair roller, and immediately sprinkle Quartz sand 16/30 (as bonding coat for **Novoplan 21**). After 24 hours, vacuum to remove all unbonded quartz sand. The surface is ready for **Novoplan 21** application.

Note : for further information please consult Mapei Technical Service

In the absence of equipment to measure moisture content, ASTM D4263 describes a method to check the presence of substrate moisture by using a plastic sheet. This test involves taping an 18' X 18' polyethylene sheet to a concrete surface by using duct tape, wait at least 16 hours. Visible condensation on the sheet or darkening of the concrete may indicate excessive moisture.

C) MIXING AND APPLICATION

i) Priming coat – Primer G

Dilute **Primer G** with water (1:1) and apply with a roller. Apply two or more coats if the substrate is very absorbent but do not leave a thick film of material on the surface. Leave it to cure until touch-dry condition (approx. 2 hours) before applying the levelling compound.



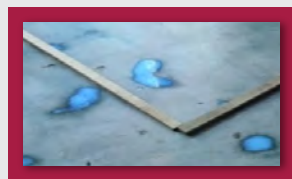
Dilute **PRIMER G** with water (1:1) and mix at low-speed until homogeneous.



Apply **PRIMER G** with a long-hair roller.



Primed substrate.



ATTENTION! Do not allow puddles to form while applying **Primer G**. Immediately remove excessive primer with a short hair roller while it is still fresh. To prevent ponding, touch up low spots with **Planiprep SC** during substrate preparation. (Application of the self-levelling compound on a substrate with excessive primer will adversely affect its performance.)

ii) Levelling layer – Novoplan 21

Gradually add the 25 kg bag of **Novoplan 21** into a clean bucket containing of 6.00-6.25 litres of clean water while mixing continuously with a low speed electric mixer. Mix until a homogeneous consistency is achieved. Spread the mixture on the floor in a single layer with a metal trowel or standing leveller to the desired thickness and immediately finish with a spike roller to release entrapped air. Leave the floor to cure for 24 hours before installing flooring.



1. Measure 6.00 to 6.25 liters of water



2. Gradually add one bag of **Novoplan 21** while mixing continuously



3. Mix **until homogeneous**, scraping loose any unmixed powder sticking to the pail



4. Pour the mixture on the substrate



5. Spread the mixture using a notched trowel



6. Spike roll to release entrapped air



7. After spike rolling



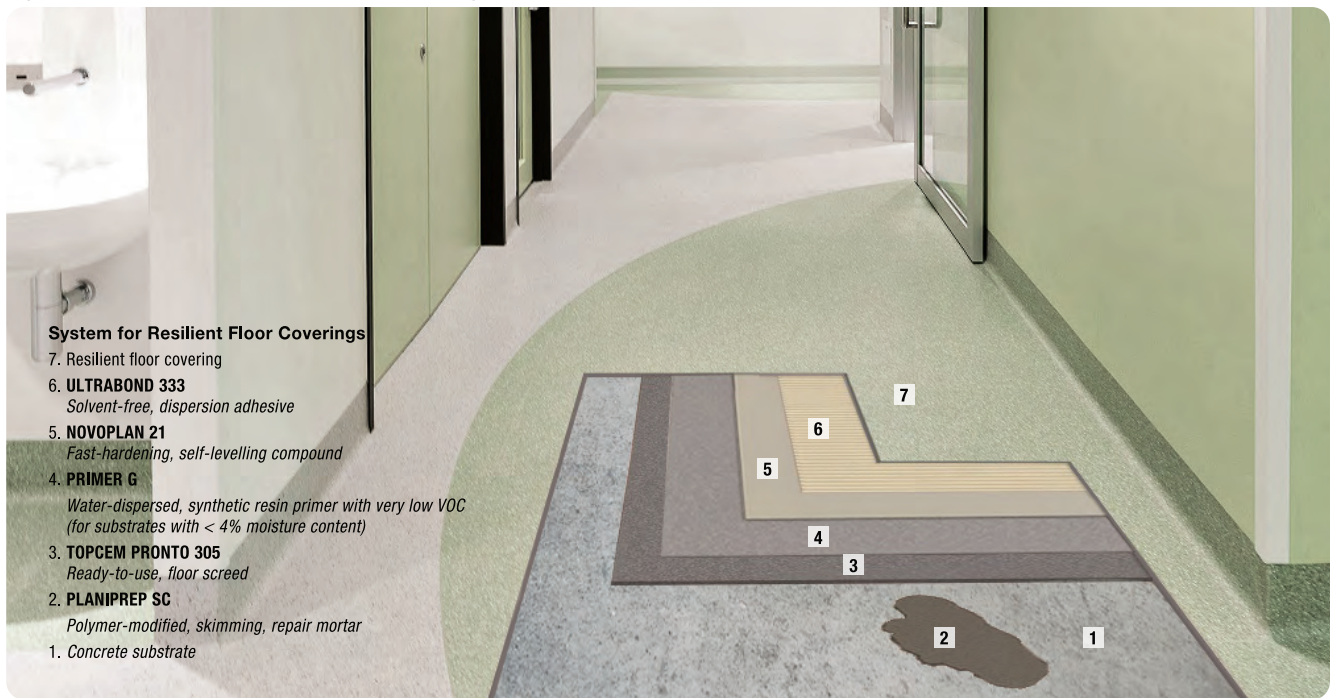
8. After curing



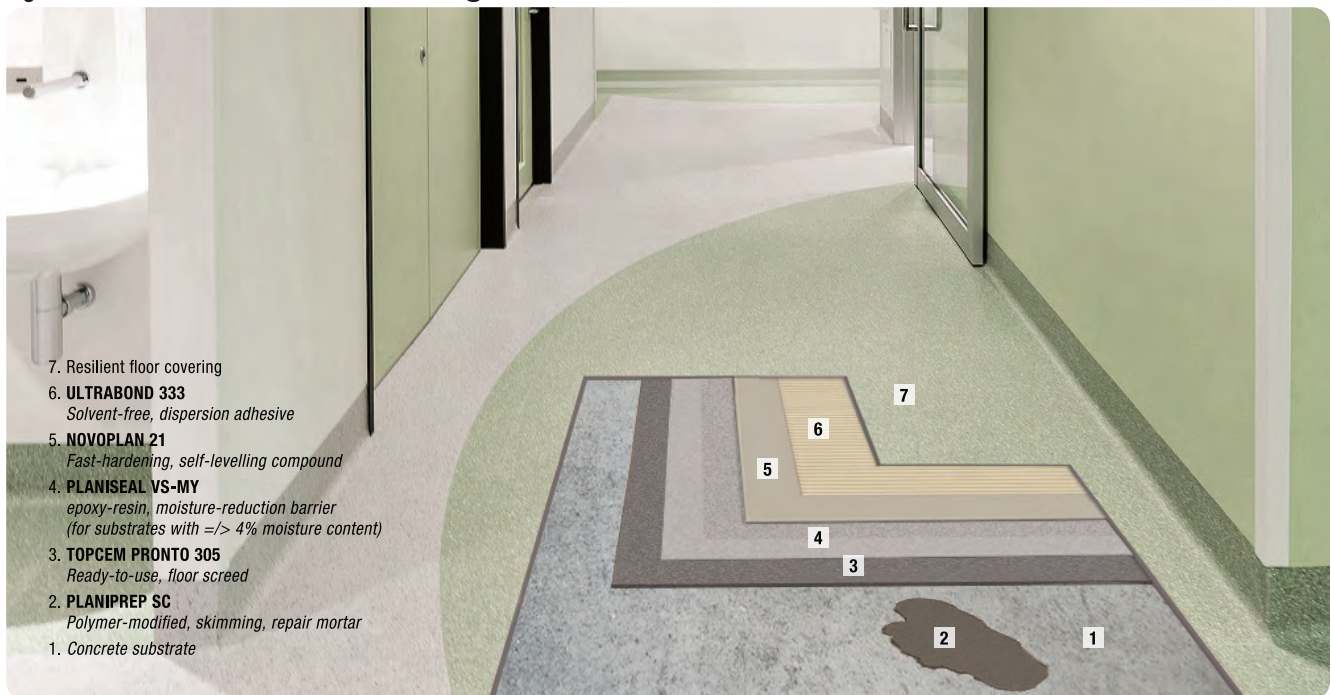
9. Completed with resilient flooring

LAYERING

System for Resilient Floor Coverings (for substrates with < 4% moisture content)



System for Resilient Floor Coverings (for substrates with \geq 4% moisture content)



Users are strongly advised to read the current versions of product data sheets available on our website www.mapei.com.my for more details on the respective products and their application conditions and procedures.

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