# SUBSTRATE PREPARATION



# **MAPE**

MAPEI PROVIDES COMPLETE SYSTEMS FOR THE **PREPARATION OF SUBSTRATES TO RECEIVE ALL** TYPES OF FLOOR COVERINGS, EVEN IN THE MOST CHALLENGING ENVIRONMENTS.

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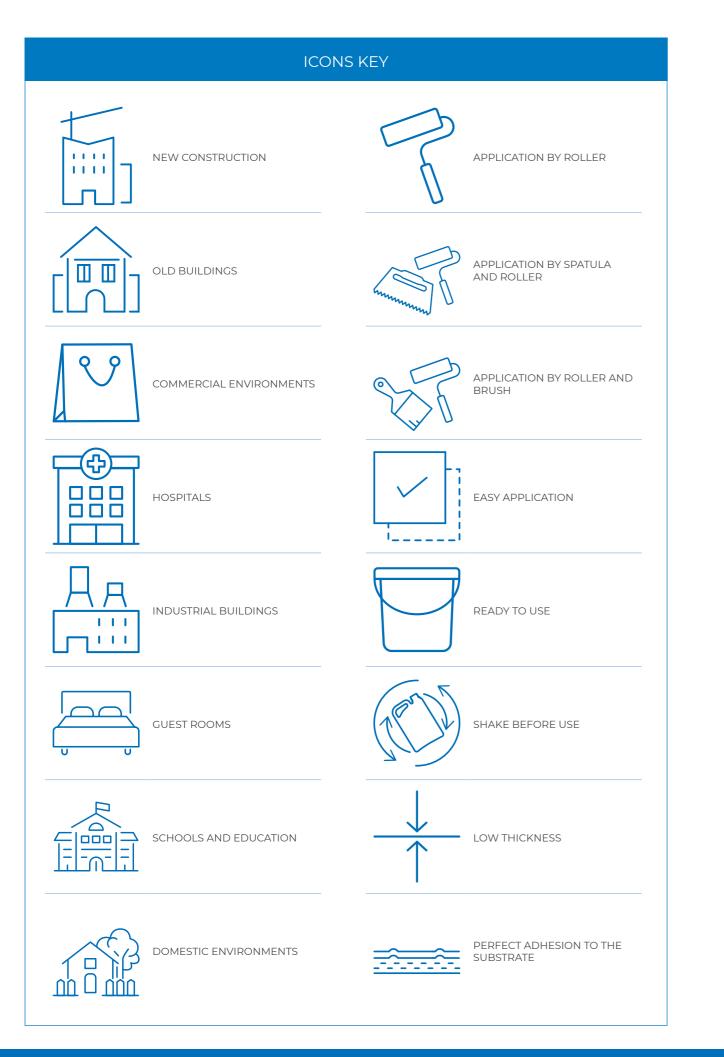
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### SUBSTRATE PREPARATION

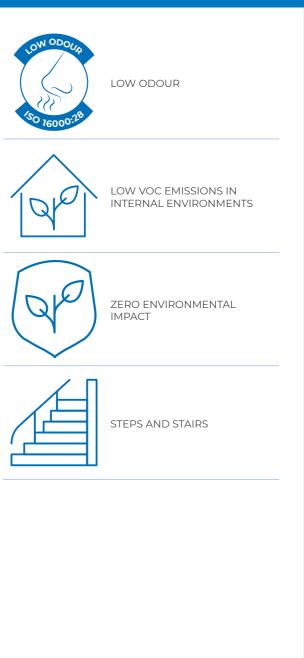
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in the substrate.

from the substrate.



### **Protect**:

### Moisture Control

When installing resilient floor coverings; vinyl sheet and tile, rubber, linoleum and all other textile and wood floor coverings, approximately 90% of installation failures fall in to two categories, poor preparation and the failure to deal with excessive moisture

Before commencing with the installation of any resilient floor covering it is essential that substrates have been given time to dry correctly. The drying time for traditional cementitious substrates made from sand and cement is approximately 10 days per centimetre of thickness and during this period, screeds are subject to hygrometric shrinkage and possible cracking. These cracks will compromise any surface moisture protection and may well form a risk of subfloor preparation de-bonding

It is vital to ensure that substrates are dry prior to floor preparation and installation. The dryness of substrates can be measured in a number of ways and, in most cases, to install moisture sensitive materials the relative humidity must be lower than 75% (RH) / 2% (WW) for cementitious substrates and below 0.5% (WW) for gypsum or anhydrite-based screeds.

The incorporation of underfloor heating systems within a substrate may affect acceptable moisture levels and guidance should always be sought from individual manufacturers. Moisture measurements can be obtained using a carbide hygrometer, electric hygrometer or by Protimeter drill and plug tests. Other forms of moisture testing apparatus are available but compliance to current British Standards should be checked.

If levels of residual moisture are higher than the aforementioned values and it is not possible to wait for further excess water to evaporate, a damp proof membrane must be applied before continuing with the installation of moisture sensitive floor preparations, primers, adhesives and floor coverings.





DESCRIPTION	Two-component, solvent free, epoxy resin, surface applied DPM used as a moisture barrier on cement-based substrates with high residual or static moisture. Can be used as a one or two coat system to prevent moisture in the substrate from reaching the floor covering. The product has very low odour, therefore ideal for use in inhabited areas, schools, hospitals etc. Roller applied.			
TECHNICAL DATA	Set to light foot traffic: at +23°C 3-4 hoursShelf life: 24 months Packaging: 4kg kit & 1kg kFinal cure: at +23°C 7 daysPackaging: 4kg kit & 1kg kCoverage(approx 1 coat): 13m² per 4kg unit 3.3m² per 1kg unit Protection from RH Levels of 75%RH to 92%RHFinal cure: at +23°C 7 daysCoverage(approx 2 coat): 20m² per 4kg unit 5m² per 1kg unit Protection from RH Levels of 92.1%RH to 97%RHShelf life: 24 months Packaging: 4kg kit & 1kg k	it		
CERTIFICATION	MAIN FEATURES		Received to the second	

### Mapeproof 1K Turbo

DESCRIPTION	One-component, solvent free, rapid drying, polyurethane surface applied DPM for use on cementitious screeds, which are not subject to rising damp, but have a residual humidity content higher than the British Standards recommended 75% R.H. (BS8203), prior to the installation of resilient or wood flooring. Can be used as a one or two coat system. Roller applied.		DPM for use on cementitious screeds, which are not subject to rising dam but have a residual humidity content higher than the British Standar recommended 75% R.H. (BS8203), prior to the installation of resilient		
TECHNICAL DATA	Set to light foot traffic Final hardening: after : Coverage(approx): 50r Protection from RH Le 75%RH to 92%RH - One application. Protection from RH Le 92.1%RH to 97%RH - Tw application.	2 hours m <sup>2</sup> vels of e coat vels of	Waiting time between coats: 40mins - 2hrs Min waiting time before priming: 40 mins Shelf life: 12 months Packaging: 10kg		
	<b>)</b> .	MAIN FE			

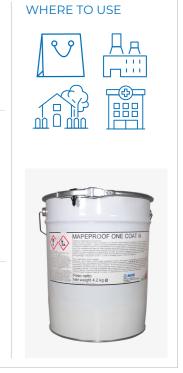


	cement-based substra moisture levels of above an effective structural resilient, textile and wo heating except where applied.	e 75% (BS8203) and bel damp proof membrar od floor coverings. Sui
ECHNICAL ATA	Set to light foot traffic approx. 5 hours Final hardening: at +23 Coverage(approx): 16m unit Protection from RH Let 75%RH to 97%RH Shelf life: 12 months Packaging: 7kg kit	3°C 24 hours h² per 7kg
ERTIFICATION		MAIN FEATURES
	ΑΤΑ	<ul> <li>moisture levels of above an effective structural resilient, textile and wo heating except where applied.</li> <li>Set to light foot traffic approx. 5 hours</li> <li>Final hardening: at +23 Coverage(approx): 16m unit</li> <li>Protection from RH Let 75%RH to 97%RH</li> <li>Shelf life: 12 months Packaging: 7kg kit</li> </ul>

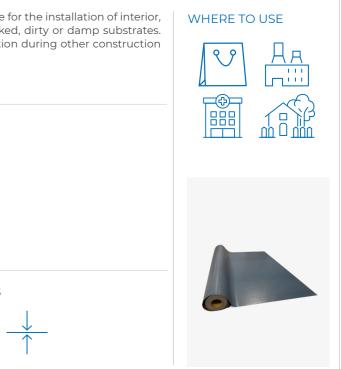


DESCRIPTION	PVC waterproofing and resilient and textile flo Can also be used as an phases.	or coverings on crack
TECHNICAL DATA	Dimensions: L: 25m W (50m²)	: 2m T: 1.5mm
CERTIFICATION		MAIN FEATURES

urface applied DPM applied to sidual, static and construction elow 97% R.H. on subfloors with ane prior to the installation of uitable for use with underfloor be installed. Trowel and roller









DESCRIPTION	primer for suppressing residu	oplied, rapid drying PVDC based dispersion al moisture up to 4.5 CM-% (95% R.H.). creeds up to a maximum of 85% R.H. Roller	
TECHNICAL DATA	Wait time for application of smoothng compound: 2 - 5h (max 12 hours) Coverage(approx 2 coats): Up 40m <sup>2</sup> per 10kg unit Shelf life: 12 months Packaging: 10kg Colour: Turquoise		





### **Case Study:** Good Hope Hospital

#### **Background:**

Following a site visit to the Fothergill Building at Good Hope Hospital in Sutton Coldfield, Birmingham. The existing substrate to the main area of the fourth floor was identified as a concrete slab overlaid with an old levelling compound, and vinyl flooring adhesive residues. The concrete substrate was generally solid and sound.

#### **Project:**

Works to the brand new, state of the art maternity suite at Good Hope Hospital were completed with the exclusive use of Mapei products for the installation of vinyl and safety flooring.

The existing compound and adhesive residues were removed and the substrate was cleaned. Once prepared, the substrate was primed with Mapei's solvent-free, acrylic based **Eco Prim T Plus**, diluted with one part to two parts of clean water. Mapei's two-part cement based smoothing and levelling compound **Latexplan No Ammonia** was then applied to infill areas. These areas were also primed with Mapei **Eco Prim T Plus**; this adhesion promoter encourages inter-coat bonding and its low odour made it the ideal choice of primer.

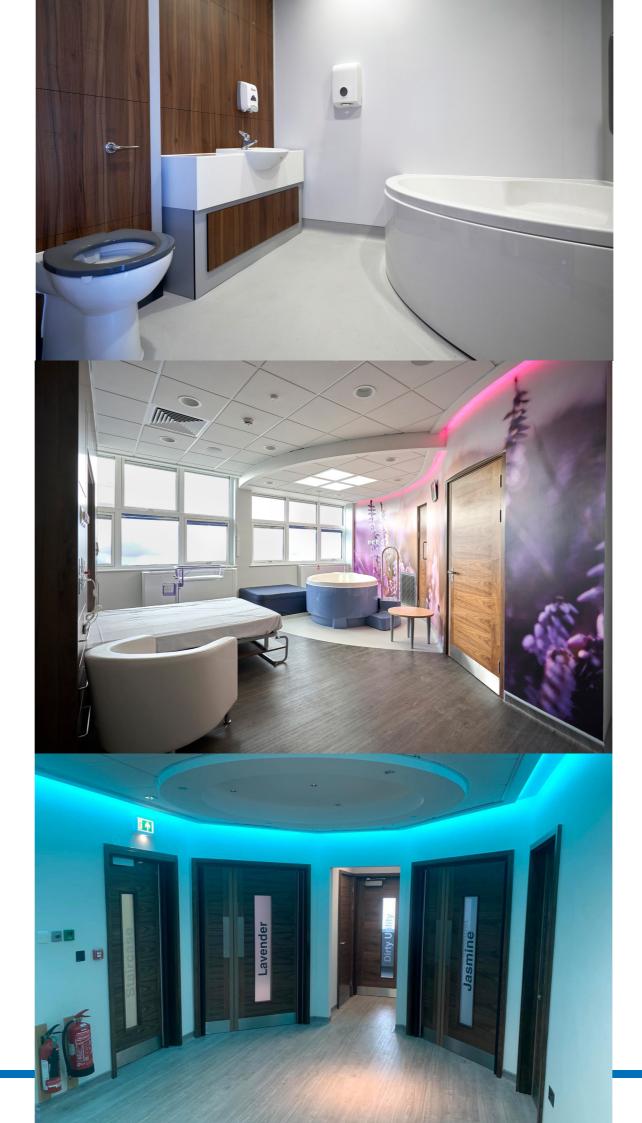
To ensure lower sections of the substrate met existing floor levels, Mapei **Latexplan No Ammonia** was applied, followed by a third application of Mapei **Eco Prim T Plus** to the entire floor. A third and final application of Mapei **Latexplan No Ammonia** was then applied to ensure the subfloor was completely level, and to provide a single, constant floor to receive the vinyl floor coverings – something that was essential, given the hospital setting.

Once the substrate was prepared, Sheldon Flooring – working for Main Contractor E Manton LTD –installed Polyflor Expona Flow for a contemporary finish. The vinyl sheets were bonded with Mapei **Ultrabond Eco VS90 Plus**, a high temperature universal acrylic-based adhesive with very low VOC that is ideal for use with most resilient floor coverings.

The substrate within the en-suites, were terrazzo tiles, solidly bonded and laid to a slight fall which accommodated drainage. The substrate was mechanically abraded, and once prepared, it was primed with Mapei **Eco Prim T Plus**. Mapei **Latexplan No Ammonia** was then applied to ensure a completely smooth surface. High performance, one-component polymersilylate adhesive Mapei **Ultrabond Eco MS 4 LVT** was used to install heavy duty wet room safety flooring Polysafe Quattro, specifically designed to provide a high degree of slip resistance in continually wet areas.

The utility rooms were installed with Polysafe Vogue Ultra vinyl flooring which was fixed with Mapei **Ultrabond Eco VS90 Plus**, a Mapei adhesive suitable for resilient floorcoverings, and ideal for areas subjected to static and dynamic loads.

Following the completed work, Contracts Manager at Sheldon Flooring Dirk Baker said, "From start to finish, Mapei provided an excellent service, backed up by products you can trust."



#### Products

Eco Prim T Plus Latexplan No Ammonia Ultrabond Eco VS90 Plus Ultrabond Eco MS 4 LVT

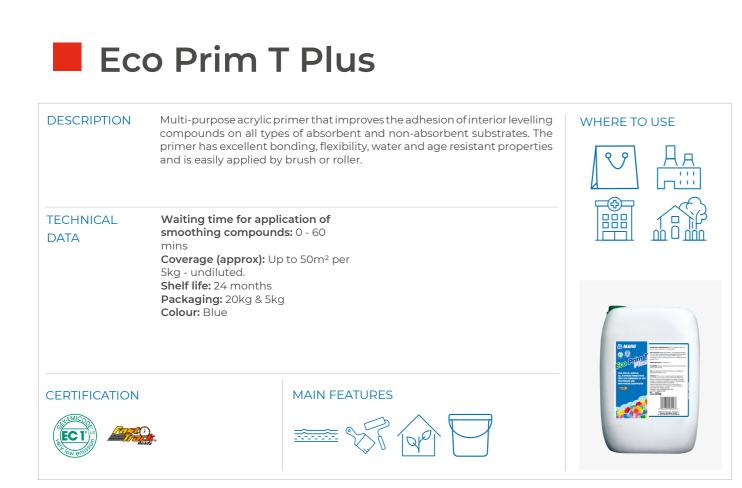






Surfaces on which resilient materials are to be installed must be sufficiently clean and free of dust, grease, oil, paint, loose particles and any other substance that could compromise the adhesion of subfloor preparation materials. As a general rule, all substrates should be primed unless specifically directed otherwise and products must be chosen according to the condition and type of substrate. The majority of subfloor preparation materials require substrates to be primed prior to application. Priming of the substrate, where necessary, and when used correctly, will improve the adhesion of subfloor preparation products to the substrate by penetrating the surface of the substrate and reducing its porosity. Priming can assist in reducing the possibility of visible air bubbles in the surface of the applied subfloor preparation materials, caused by trapped air within the substrate. On a practical level, priming the substrate will help to ascertain if there is any contamination previously unseen that will require to be dealt with. Priming substrates will also improve the overall flow rate and coverage of the subfloor preparation materials. Primer should not be used as a dust suppressant or replacement for correct preparation, but will assist in dealing with micro particles of dust.





### Eco Prim Grip Plus

DESCRIPTION	Grey, bonding promoting primer, ideal for non-absorbent substrates, for the installation of smoothing compounds. Pre-aggregated to provide an exceptional key and high-grip surface.			
TECHNICAL DATA	Drying time: approx. 3 Waiting time for appli smoothing compound mins Coverage (approx): Up 5kg Shelf life: 12 months Packaging: 10kg & 5kg Colour: Grey	<b>ication of</b> d <b>s:</b> approx. 30 o to 25m² per		
		MAIN FEATURES		







The precautions that need to be taken when installing resilient materials are quite different to those of other floor covering materials. Consideration regarding the very nature of resilient materials being installed needs to be made, resilient flooring is usually deformable and, if subjected to concentrated loads, does not have the capacity to distribute stresses, and tends to transfer them to the underlying substrate, which therefore must have high performance characteristics.

Resilient floor coverings can be thin, only a few millimetres thick, this low thickness will not cover or hide defects or uneven areas present on the subfloor and for this reason, surfaces must always be adequately prepared with specific smoothing products. Surface regularity classes are given in BS 8204 as SR1, SR2 and SR3 relating to 3mm, 5mm and 10mm respectively.

Substrates must be prepared according to specific requirements and to make them suitable for laying floor coverings, and these requirements may vary according to their final intended use. Since substrates are usually smoothed over before installing floor coverings, the smoothing products used must also have adequate mechanical strength for required application. Classification of smoothing compounds is measured according to their compressive and flexural strength.





DESCRIPTION	Two-component, leve in thickness of 3 to 10 all types of floor cove compressive strength and heated screeds. M		
TECHNICAL DATA	Setting time: 45 - 60 m Set to light foot traffic Waiting time for the i floor coverings: 12hrs Coverage (approx): 6m thickness per unit Shelf life: A: 12 months months Packaging: 30kg kit	<b>::</b> 1.5 - 2hrs <b>nstallation of</b> n <sup>2</sup> at 3mm	
CERTIFICATION			<ul> <li></li></ul>

### Latexplan No Ammonia

DESCRIPTION	smoothing compound for use over old adhe applied to plywood an	nia is a fast setting tw d for differences in thic esive residues (includi d ceramic tile without t a. Suitable for castor
TECHNICAL DATA	Setting time: 30 mins Set to light foot traffic: 60mins Waiting time for the installation of floor coverings: 4hrs Coverage (approx): 5m <sup>2</sup> at 3mm thickness per unit Shelf life: A: 12 months B: 24 months Packaging: 24.4kg kit	
CERTIFICATION		

### Latexplan Trade Fast

DESCRIPTION	Rapid-curing two-component levelling and smoothing compound for differences in thickness of 3-10mm on new or existing floors. Suitable for use over most adhesive residues including bitumen. Suitable to receive all types of floor covering in commercial and domestic settings. Very high compressive strength 32N/mm <sup>2</sup> and low odour. Suitable for castor wheels and heated screeds. Moisture tolerant.				
TECHNICAL DATA	Waiting time for the floor coverings: 2.5 - 3	light foot traffic: 60 mins ag time for the installation of overings: 2.5 - 3hrs age (approx): 5m <sup>2</sup> at 3mm ess per unit ife: A: 12 months B: 24 as			
CERTIFICATION					

two-component levelling and ckness of 3 to 10mm. Suitable ding bitumen) it can also be t the need for priming. Protein wheels and heated screeds.









DESCRIPTION	Ultra-fast hardening on new and existing suitable to receive all settings. Suitable fo concrete, sand:cemer screeds containing u underfloor heating sy pump applied.		
TECHNICAL DATA	Setting time: 45 - 60 Set to light foot traffi Waiting time for the floor coverings: Cerar 3 hours Resilient/wood floorin hours Coverage (approx): 50 thickness per unit	ic: 3hrs Packaging: 20kg installation of mic tiles: min ngs: min 12	
CERTIFICATION			Harding Colors



DESCRIPTION	Ultra-fast drying, wa compound. For 3-30 r substrates. High resista VOC content.	mm. For use interna
TECHNICAL DATA	Setting time: 50 - 70 mins Set to light foot traffic: 3 hrs Waiting time for the installation of floor coverings: Ceramic tiles: 3-12 hours Resilient/Wood floorings: 24-72 h Coverage (approx): 5m <sup>2</sup> at 3mm thickness per unit Shelf life: A: 12 months Packaging: 25kg	
CERTIFICATION	ECT Cy ett	

#### **Ultraplan Renovation Screed 3240**

DESCRIPTION	refurbishment of to 40mm. For use for use over many old and new timb to receive most to	Fibre-reinforced self-levelling compound designed for the renovation/ refurbishment of new and existing floor substrates for differences of 3 to 40mm. For use in both commercial and domestic situations. Suitable for use over many common substrates and flexible enough for use over old and new timber flooring, floorboards, chipboard panels and plywood to receive most types of floor covering. Suitable for underfloor heating systems and castor wheels. Can be hand or pump applied.		
TECHNICAL DATASetting time: 30 - 90 m Set to light foot traffic Waiting time for the in floor coverings: Ceram hours Resilient/Wood flooring Coverage (approx): 6m thickness per unit Shelf life: 12 months Packaging: 25kg		affic: 3-12 hours the installation of eramic tiles: 3-12 orings: 24-72 h ): 6m² at 3mm		
CERTIFICATION			8	



self-levelling and smoothing WHERE TO USE nally on new or existing solid raffic. Mix with water. Very low <u>Да</u> \_::: ९९ 





DESCRIPTION	Ultra-fast drying, f compound for the re floors and steps. Suit resilient and textile fl			
TECHNICAL DATA	Waiting time for the installation of floor coverings: 30 minutes Coverage (approx): 1.25 kg / m <sup>2</sup> per mm layer thickness Shelf life: 24 months Packaging: 4 x 4kg Alupack bags			
CERTIFICATION		MAIN FEATURES $= 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 $		

# Planipatch Xtra

DESCRIPTION	Planipatch Xtra is a u compound for localise repairing and skim coa walls, steps and corner a particular smooth fir		
TECHNICAL DATA	Setting time: 20 mins Set to light foot traffic Coverage (approx): 1.4 mm thickness Shelf life: 12 months Packaging: 5kg and 23		
CERTIFICATION		MAIN FEATURES $= \sqrt{2} \sqrt{1}$	



### **Product Selection Chart**

TECHNICAL DETAILS	LATEXPLAN TRADE	LATEXPLAN TRADE FAST	LATEXPLAN NO AMMONIA	ULTRAPLAN ECO 3210	ULTRAPLAN MAXI 3220	ULTRAPLAN RENOVATION SCREED 3240	PLANIPREP FIX	PLANIPATCH XTRA
Application method	Flat trowel	Flat trowel	Flat trowel	Flat trowel / pump	Flat trowel / pump	Flat trowel / pump	Flat trowel	Flat trowel
Working time	20 - 30 Mins	20 Mins	20 - 30 Mins	20 - 30 Mins	30 - 40 Mins	30 - 40 Mins	approx. 7 Mins	10 Mins
Thickness	3-10mm	3-10mm	3-10mm	3-10mm	3-10mm	3-40mm	0-4mm	up to 25mm. No limit when mixed with Quartz
Applying floor coverings	12 Hours	2.5 - 3 Hours	4 Hours	Ceramic tiles: min 3 hours Resilient/wood floorings: min 12 hours	Ceramic tiles: 3-12 hours Resilient/Wood floorings: 24-72 hours	Ceramic tiles: 3-12 hours Resilient/Wood floorings: 24-72 hours	Approx. 30Mins	45 - 60 mins
Foot traffic	1.5 - 2 Hours	60 Mins	60 Mins	3 Hours	3 Hours	3 - 12 Hours		
Coverage at 3mm	Approx. 6m <sup>2</sup>	Approx. 5m <sup>2</sup>	Approx. 5m <sup>2</sup>	Approx. 5m <sup>2</sup>	Approx. 5m <sup>2</sup>	Approx. 6m²		
Screeds containing under floor heat- ing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Compressive strength	26N/mm <sup>2</sup>	32N/mm <sup>2</sup>	20N/mm <sup>2</sup>	26N/mm <sup>2</sup>	35N/mm <sup>2</sup>	28N/mm²	24N/mm <sup>2</sup>	39N/mm²
Flextural strength	8N/mm²	7N/mm²	6N/mm²	7N/mm²	8N/mm²	5.5N/mm <sup>2</sup>	8N/mm²	8N/mm²
CE mark	C25 F6	C30 F7	C20 F6	C25 F7	C35 F7	C25 F5	C20 F7	C35-F7-A1fl
SUBFLOOR COMPATIBILITY								
Concrete sand / cement / absorbent	Eco Prim T Plus	Eco Prim T Plus	Eco Prim T Plus		Eco Prim T Plus			
Non absorbent	Eco Prim T Plus or Eco Prim Grip Plus	Eco Prim T Plus or Eco Prim Grip Plus	Eco Prim T Plus or Eco Prim Grip Plus	Eco Prim T Plus or Eco Prim Grip Plus	Eco Prim T Plus or Eco Prim Grip Plus	Eco Prim T Plus or Eco Prim Grip Plus		
Power floated concrete	Abraded - Eco Prim T Plus	Abraded - Eco Prim T Plus	Abraded - Eco Prim T Plus	Eco Prim T plus	Eco Prim T Plus			
Anhydrite	Eco Prim T Plus	Eco Prim T Plus	Eco Prim T Plus		Eco Prim T Plus			
Suitable over most old adhesive residue	No	Yes	Yes	No	No	No	No	Yes
DPM	All Mapei DPM's	All Mapei DPM's	All Mapei DPM's	All Mapei DPM's	All Mapei DPM's	All Mapei DPM's		
Moisture tolerant	Yes	Yes	Yes	No	No	No	No	Yes
Flooring grade asphalt	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Metal	Eporip blinded with quartz or kiln dried sharp sand	Eporip blinded with quartz or kiln dried sharp sand	Eporip blinded with quartz or kiln dried sharp sand	No	Yes - When mixed with Latex Plus			
Plywood external grade or similar	No	No	Yes	No	No	Yes	Yes	Yes - When mixed with Latex Plus
Packaging	25 kg bag and 5kg bottle	20kg bag & 4kg bot- tle	20kg bag & 4.4kg bottle	20kg bag	25kg bag	25kg bag	4kg bag	5kg bag

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