



industrial and decorative **flooring**
coatings for concrete and steel
Wearing courses for bridge decks and other constructions

HIM Products B.V. www.him.nl
Maxwellstraat 2 tel. 0251 276 300
1976 AD IJmuiden info@him.nl

HIM ML3000/MLN3000

Decorative synthetic resin floor screed based on epoxy and natural quartz sand

Uses
HIM ML3000 and MLN3000 are seamless decorative resin screeds, used where decorative aspect and chemical and abrasion resistance to light, medium and heavy traffic are needed. Applications include food industry, car parks, storage areas and wet areas.
Product description
HIM ML3000 and MLN3000 are flooring systems, obtained after a succession of different layers, pigmented or natural. The final aspect can be more or less textured, depending on the required anti-slip properties. HIM ML3000 is using natural fillers and a clear binder in the layers and is finished with a pigmented sealer, resulting in an even colored substrate. HIM MLN3000 is using natural fillers and a pigmented binder and is finished with a clear sealer, resulting in a somewhat mingled color, which is more alive because the sand grains are visible in the floor. The total thickness is 3-4 mm.
Advantages
<ul style="list-style-type: none"> • good abrasion and impact resistance • impermeable and seamless • durable – good abrasion resistance • decorative aspect – wide range of RAL- and NCS-colors for ML3000, pigmented binders for MLN3000 • chemical resistant - good resistance to a wide range of chemicals • "texture-adjustable" surface – anti-slip • solvent-free – no smell during application
Flooring system *)
<ul style="list-style-type: none"> ▶ 1 coat HIM Primer 30 or HIM Primer 31, scattered with quartz sand (only on porous substrates) ▶ 1 coat HIM RAG-N1 (clear or pigmented), filled and scattered with quartz sand ▶ Grinding ▶ 1 coat HIM RAG-N1 (clear or pigmented), filled and scattered with quartz sand ▶ Grinding ▶ 1 coat HIM FC450NP (ML3000) or HIM Sealer DS (MLN3000) ▶ For ML3000N 1 or 2 coats of a finishcoat, e.g. HIM FC215 or HIM FC240
Maintenance
The service life of a floor can be considerably extended by good housekeeping. Regular cleaning may be carried out using a rotary brushing machine with a water diluted cleaning agent at temperatures up to 50°C. Refer to HIM for further advice.
Colors
The final color of HIM ML3000 is defined by the color of HIM FC450NP. The final color of HIM MLN3000 is defined by the color of the binder used.

* Because of the potlife we recommend using HIM SL1000 during the summer at temperature > 20°C and during the winter period HIM RAG-N1. Please consult the product datasheet of these products.

Technical data *)	HIM RAG-N1	HIM Sealer DS	HIM FC450NP
Mix ratio			
base : harder (w/w)	18,4 : 8,2	14,63 : 7,87	20,9 : 4,9
base : hardener (v/v)	16,2 : 8,2	13,1 : 7,6	12,0 : 4,9
Specific gravity (mixed)	Ca. 1,14	Ca. 1,09	Ca. 1,5
Volume of solids (mixed)	100%	100%	96%
Pot life at 20°C	App. 20 minutes	App. 25 minutes	App. 20 minutes
Curing at 20°C	8 hours	10 hours	16 hours

System	
Adhesion strength on concrete	> 4,5 MPa
Chemical resistance	The cured floor topping is resistant to petrol, oils and fats, detergents, some aliphatic hydrocarbons and diluted acids and alkalis. For further information on chemical resistance please contact HIM.
Fire rating (EN-13501)	CfS1

*For detailed information consult HIM.



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Temperature limitations
Do not apply the various materials at temperatures below 5°C nor at a substrate temperature which is lower than the dew point temperature plus 3°C. Maximum application temperature 35°C. Maximum relative humidity 80%.
Surface preparation
It is essential to thoroughly prepare the floor surface in order to achieve a sound, clean and dry substrate which is essential for good adhesion between flooring system and substrate. <i>Concrete substrates</i> : grit blasting, milling, or a combination of these techniques. The substrate needs to be levelled before applying the HIM ML3000 system.
Limitations
New concrete floors should be at least 28 days old and contain no more water than 5% by weight. Care should be taken that no rising damp can take place through the substrate, resulting in blisters and/or adhesion failure of the system. The rubber mat test can help to predict rising damp. Existing expansion joints must be repeated in the new Floor. The concrete substrate should have a compressive strength of minimal 25 MPa and must be pre-treated properly to achieve the required adhesion.
Primer
When the prepared substrate is more absorbent than usual it may be necessary to apply one coat of HIM Primer 30 or HIM Primer 31. This coat has to be scattered with 0,4-0,8 mm quartz sand to achieve grip while applying the HIM RAG N1. Please consult product data sheet for technical data.
Mixing HIM RAG-N1 scratch layer mixes :
Proper mixing of all components is essential. Add 8,2 kg hardener to 18,4 kg base in a suitable mixing vessel and mix for 3-5 minutes. (When HIM RAG-N1 is used in the MLN3000 system it is used with a color pot. Mix until a homogeneous color mix is obtained). Add 2 bags of 14,5 kg HIM SL3000 filler and mix during 3-5 minutes until a homogeneous mixture is obtained. Do not add solvents. It is important that the components are intermixed thoroughly with a forced-action mixer or an approved spiral paddle in a slow speed heavy-duty drill so that no traces of the components remain unmixed. In order to prevent segregation of the product, mix the remaining product occasionally. Spread the mixture in small quantities on the surface in order to lengthen the potlife and to make application easier.
Mixing HIM FC450NP
Mix the base component well before adding the hardener component. Mix for another 3 minutes until a homogeneous mixture is obtained.
Mixing HIM Sealer DS
Proper mixing of all components is essential. Add hardener to base component and mix for 3-5 minutes until a homogeneous mixture is obtained. Do not add solvents. It is important that the components are intermixed thoroughly with a forced-action mixer or an approved spiral paddle in a slow speed heavy-duty drill so that no traces of the components remain unmixed.
Material consumption (theor.), at a coat thickness of app. 3 mm
The quality of the substrate has an impact on the material consumption of the first coat. The figures below should be considered as the minimum. All other material consumptions are based on grinding with grain size 16. If a primer is used, please consult relevant product data sheet.
First coat HIM RAG-N1 : 1,2 kg HIM RAG-N1 scratch layer mixture per m ² (clear or pigmented) (This mixture consists of 18,4 kg HIM RAG-N1 base, 8,2 kg HIM RAG-N1 hardener and 2 x 14,5 kg HIM SL3000 filler. This layer is excessively scattered with sand MI 0,4-0,9mm (approx. 2,5 kg/m ²)
Second coat HIM RAG-N1 : 1,2 kg HIM RAG-N1 scratch layer per m ² (clear) (This mixture consists of 18,4 kg HIM RAG-N1 base, 8,2 kg HIM RAG-N1 hardener and 2 x 14,5 kg HIM SL3000 filler. This layer is excessively scattered with sand MI 0,4-0,9 mm (approx. 2,5 kg/m ²)
Sealer (HIM FC450NP for ML3000 and HIM Sealer DS for MLN3000) 0,4-0,8 kg, depending upon the tools used and the desired structure.
Finishcoat (optional for ML3000) 0,1-0,15 kg/m ² HIM FC215 or HIM FC240 (consult product data sheets)
Application
Each layer of HIM RAG-N1 shall be spread over the surface immediately after mixing, using a steel float. The thickness will depend on the coarsest filler. Each scattering of quartz sand shall be carried out manually or with a suitable machine, so that the sand falls down vertically and well distributed on the resin layer until the resin stops bleeding. Each sanded dry layer shall be grinded and vacuum-cleaned. Please note that the potlife of the RAG-N1 mixture is short. It is essential to apply the mixture immediately after mixing and start scattering as soon as it is evenly divided on the substrate.
Pot life at 20°C
HIM RAG-N1: app. 20 minutes HIM FC450NP: app. 20 minutes HIM Sealer DS: app. 25 minutes
Curing at 20°C
HIM RAG-N1: grindable after 16 hours HIM FC450NP: Foot traffic after 24 hours, light traffic after 48 hours, fully cured after 7 days. HIM Sealer DS: Foot traffic after 24 hours, light traffic after 48 hours, fully cured after 7 days.



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Grinding
After curing of the layers the excess quartz sand is removed. Grind the surface with a grinding machine with a diameter of 500 mm and a sanding disc with the required grain size. The grinded substrate has to be vacuum-cleaned with industrial vacuum-cleaners with sufficient power.
Sealer and finishcoat
HIM FC450NP is applied with a steel float or rubber trowel, depending on the desired texture. HIM Sealer DS is applied with a steel float or rubber trowel, depending upon the desired texture. The finishcoat HIM FC215 or HIM FC240 is applied with a roller to protect the flooring system against UV radiation.
Tool Cleaning
Clean tools and equipment with HIM Solvent 102 immediately after use.
Shelf life
All components used in the HIM ML3000 system have a shelf life of 12 months if kept in a dry, cool store in the original, unopened packs.
Safety precautions
Some of the components mentioned in this product information sheet, may be classified as irritant, flammable or corrosive. Material Safety Data Sheets, available for each component, must therefore be fully consulted in order to make sure relevant care is taken.
Pack size
HIM RAG-N1 is available in sets of 26,6 kg, HIM FC450NP is available in sets of 25,8 kg and HIM Sealer DS is available in sets of 22,5 kg. Voor large areas the base and hardener components may be supplied in barrels.
Flash points
HIM RAG-N1 base > 100°C HIM RAG-N1 hardener > 100°C HIM FC450NP base > 100°C HIM FC450NP hardener > 100°C HIM Sealer DS base > 100°C HIM Sealer DS hardener > 100°C HIM Solvent 102 32°C
Disposal
Disposal of spillage or empty packaging should be in accordance with local waste disposal regulations. For further information refer to the Material Safety Data sheet.