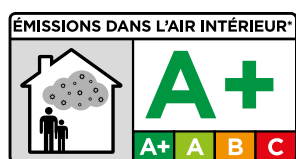




# VARIOPLAN-HD

Cementitious continuous floor resistant to abrasion

- To use for continuous floors • Internal and external use
- Rapid setting, traffic in short time • Resistant to abrasion and use
- Good resistance to slipperiness • Available in different finishes and colors
- Permeable to vapor
- UV resistant - aging resistant
- Resistant to frost and salts
- Thickness from 6 to 30 mm
- Easy to apply
- EN 13813 CTC40-F10-AR 0.5
- CE



## TECHNICAL FEATURES:

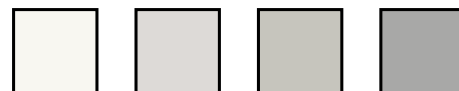
VARIOPLAN-HD is self-levelling cementitious mortar, resistant to abrasion for application of cementitious and continuous floors, conforming to EN 13813 CTC40-F10-AR 0,5. It is a component of the system VARIOPLAN-HD.

## AREAS OF APPLICATION:

VARIOPLAN-HD is a coating system for abrasion resistant continuous floors, applicable on screeds, concrete, and on top of old tiles. It is installed in shops, offices, homes, garages and basements, which require a smooth, continuous, wear-resistant surface that is aesthetically different from that obtainable with other more common systems (tiles, PVC, resins etc.).

## COLOURS:

Bianco, Manhattan, Grigio 7035, Grigio 7042



## CONTRACT ITEM SPECIFICATIONS:

Laying of exterior and interior cement-based continuous floors resistant to abrasion with antislip classification (according to DIN 51130:2014) equal to R 10, for layers 6-30 mm thick through use of the complete VARIOPLAN-HD system by Benfer. Surfaces must be clean, dry, strong, able to withstand weight, free of grease, oils and paints, and should be treated with abrasion, sandblasting, shot peening, milling or scarification before use of suitable primers by Benfer. Floor thickness will be laid with abrasion resistant self-levelling cement mortar, such as VARIOPLAN-HD by Benfer and the surface will be protected with a specific polyurethane finish product such as REOTOP-PU by Benfer, to reduce absorption and improve the abrasion resistance of the surface. It is advisable to spread an even layer of metallic wax over the entire surface of the floor in order to facilitate regular cleaning and maintenance.



TECHNICAL  
ASSISTANCE



INSURANCE  
GUARANTEE



TECHNICAL  
MEETINGS I



PROFESSIONAL  
USE

**METHOD OF USE:****SUBSTRATES PREPARATION:**

The surface must be clean, dry, strong, able to withstand weight, free of grease, oils and paints. All substances that could impair adhesion must be removed. Remove highly contaminated areas mechanically and oil and wax residue. Fill voids and holes with TRIOTECH-50 or BENFERCURE-VARIO. Seal cracks with epoxy resin mixed with REOFIBRE. The tensile strength of the substrate must never be below the average of  $1.5 \text{ N/mm}^2$  (the lowest single value must be no less than  $1.0 \text{ N/mm}^2$ ). Prepare the substrate with suitable methods such as for example sandblasting and shot peening, milling or scarification to obtain a surface that provides good mechanical bonding to the system. Traditional non-smooth cement based screeds and those prepared with SOLIDONE PRONTO require only light surface abrasion to detach loose parts. Anhydrite-based screeds must be dry (relative residual moisture less than 0.5% or 0.3% for heated screeds) and the surface must be abraded until the complete elimination of the weak surface film. Heated screeds must be dry and operations can begin only after start-up, full operation and shut-down of the heating system in accordance with the instructions of screed and heating system suppliers and the requirements of relevant certificates. Existing ceramic or natural stone flooring must be tightly secured to the substrate and carefully abraded in order to roughen the surface. All reactive resin finishes with the ability to sustain weight and properly attached to the substrate can be covered with VARIOPLAN-HD only after having been sanded. If the substrate is damaged by de-iced salts, eliminate the substrate until you find a noncontaminated area, using appropriate methods such as scarifying or chiselling. Carefully aspirate the substrate until dust is completely eliminated. Then apply insulating self-adhesive tape BS-PERIMETRAL to the areas adjacent to walls and in the vicinity of other breaks in the floor to prevent stress in materials and to prevent the self levelling compound from penetrating in the space between the substrate and walls.

Before using VARIOPLAN-HD supports must be previously treated with REOPRIM and REOBASE, in conformity with manual of use of the VARIOPLAN-HD system and in conformity with the technical data sheet.

**PRODUCT PREPARATION:**

After at least 16 hours from primer application, mix 25 kg of VARIOPLANHD with 6.25 litres of clean water at room temperature. Pour 2/3 of the water required and then 25 kg of VARIOPLAN-HD in a clean bucket. Stir until you obtain a mixture without lumps and add the remaining 1/3 of water. Scrape the container walls with a spatula to evenly mix all the material (no streaks). We then recommend pouring the whole mixture into another bucket, filtering it with 1 mm side square mesh netting and mixing once again. The minimum recommended mixing time is approximately 3 minutes.

To obtain a well prepared product it is necessary a team of, at least 2 persons, n. 6 clean containers for the mixing process, n. 2 containers for the dosage of water and 2 professional mixers or pump machines (in case of failure or long use). We recommend using a mixer at speed 500–700 rpm. Double helix electrical mixers have proven the most effective for obtaining a homogeneous mixture. Following this procedure minimises the possibility of having any small lumps of material in the mixture which can cause defects on the surface.

**PRODUCT APPLICATION:**

Pour VARIOPLAN-HD on the substrate prepared with Primer and spread it uniformly within the pot life using a suitable tool, for example a metal rake with adjustable spacer teeth. Fasten the spacers so as to obtain a homogeneous levelling thickness of at least 5/6 mm. It is possible to fasten level indicators while the surface is not yet hardened to obtain the desired thickness, which can be obtained in a single application.

The fresh mortar must be de-aerated with a toothed roller, at the same time favouring levelling. Surface aesthetics and levelling are significantly improved by using this method.

The minimum thickness of 5-6 mm is necessary to guarantee the mechanical performance of the product. At the end of the application, during the gripping phase, protect VARIOPLAN-HD from a rapid loss of water due to high environmental temperature, direct solar radiation or drafts.

After at least 24 hours, it is possible to proceed with the removal of residual dust formed on the VARIOPLAN-HD, by cleaning the surface previously with a soft felt, and subsequently with an accurate dust-extraction. During this phase we recommend not to use shoes that might leave traces, because, once covered with REOTOP-PU, it will not be possible to remove them.

We recommend to use soft wool socks over the shoes.

Subsequently apply on the surface the finish REOTOP-PU, at least in two coats with opposite verse, after 6 hours one from the other.

### FULL SERVICE:

The floor can be used by pedestrian transit after 24 hours by the end of installation. After at least 7 days

the area can be trafficked with car and mechanical and lightweight forklift machines.

### ADVICE:

- Existing substrate joints must be included in coating and slippage of the product inside must be prevented using appropriate methods. It is however necessary to create fraction joints at least every 60 m<sup>2</sup>. In the case of heated floors, painted backgrounds must be reduced to 25-30 m<sup>2</sup>. Where VARIOPLAN-HD application is carried out in the civil sector (apartments, shops, etc.), in any case provide also for room dimensions lower than those previously described for expansion joints near door thresholds or where a substantial volumetric change of the rooms to be coated exists. It is also possible to mark the position of the joint on walls, fill it with self-levelling compound during laying and restore the joint, cutting it with a flexible grinding wheel the next day.
- Seal joints with DEKOFLEX-PU, 1-component polyurethane joint sealing adhesive for sealing expansion and fraction joints.
- If necessary, spread another layer of VARIOPLAN-HD, apply a coat of intermediate primer.
- During machine application, continuously verify the slump value. Check using a Vicat ring in accordance with DIN 1164, where the internal top diameter is 65 mm and the bottom diameter is 75 mm. Determining the slump value is carried out for example on a glass surface and must be approximately 35 cm.
- Protects areas that are not to be treated from the effects of VARIOPLAN-HD.
- VARIOPLAN-HD is suitable for sealing small static shrinkage cracks or hairline cracks up to 0.1 mm wide. It is not suitable for sealing larger or dynamic cracks.
- Hardened coating has a slightly uneven appearance (whitish shading) due to the setting, to irregular absorption of the substrate, to high moisture in the environment, to premature exposure to water, and as a result of the slight natural colour variability of the raw material. These are properties of the product and are absolutely not be considered defects.
- Coating must not be exposed to water during setting. Penetrating moisture can cause detachment in the presence of frost.
- The mortar which is starting the hardening process must not be diluted with water or mixed with other VARIOPLAN-HD.

The applications which are not cited in this technical data sheets, can be made only after consulting and receiving a written confirmation by our technical department.

For any further information about the use of this product as a component of system VARIOPLAN-HD, please read the technical manual of the product.

**CLEANING:** The cleaning of tools has to be done with water before the product starts gripping.

**CONSUMPTION:** 1,80 kg/m<sup>2</sup>/mm thickness.

**PACKAGING:** VARIOPLAN-HD is available in 25 kg poly-lined bags.

**STORAGE:** In the original closed package in a cool dry place. Use opened packaging promptly.

**SHELF LIFE:** 12 months.

#### PRODUCT TECHNICAL DATA

Colors:	Bianco, Manhattan, Grigio 7035, Grigio 7042
Minimum thickness:	6 mm
Maximum thickness:	30 mm
Packaging:	25 kg bags
Mixing time:	2-3 minutes
Density of green paste:	2,00 kg/dm <sup>3</sup>
Consumption:	1,80 kg/m <sup>2</sup> /mm thickness
Pot life:	45 minutes*
Pot life at +30° C:	30 minutes
Application temperature:	From + 10°C to + 35°C
Adhesion strength:	> 1,5 N/mm <sup>2</sup> after 28 days
Flexural strength:	Approx. 10 N/mm <sup>2</sup> after 28 days
Compressive strength:	Approx. 40 N/mm <sup>2</sup> after 28 days
Classification:	EN 13813 CT- C40 – F10 – AR 0.5
Shore D hardness:	Approx. 80 – 82 (in compliance with DIN 53505)
Water vapour resistance coefficient $\mu$ :	Approx. 200
Storage:	Dry for 12 months in the original unopened packaging. Use opened packaging promptly.
Foot traffic after:	3-4 hours*
Cleaning:	Still fresh with water
* at 23°C and 50% relative humidity	

**PLEASE NOTE:** The information given in this chart is based on our best experience and indicative only. It must in any event be verified by the end user, who assumes all liabilities deriving from utilization of the product.