Ciech Resins

epidian®

Epoxy Flooring Systems

CIECH Resins offers a wide range of EPIDIAN® products. Epoxy flooring portfolio includes but is not limited to resins and hardeners for thin epoxy flooring, self-levelling flooring, flooring with the addition of acrylic flakes, quartz sand or grit.

The basic range of EPIDIAN® FLOOR C1 and S1 compositions includes 10 selected RAL colours. Other shades are available upon request.

EPIDIAN® epoxy flooring systems boast:

- excellent adhesion to horizontal and vertical surfaces,
- good mechanical and chemical resistance,
- water resistance.

Three key factors that affect the quality of epoxy flooring:

- proper combination of resin and hardener,
- proper selection of fillers and auxiliaries,
- thorough preparation of the surface and appropriate application technique.

General Classification of Epoxy Compositions

Self-Levelling Compositions

EPIDIAN® FLOOR S1 SYSTEM

Self-levelling compositions may contain up to 35% of fillers, whereas the thickness of a layer usually ranges between 1 and 3 mm (max 5 mm). Thanks to its liquid consistency the application is relatively easy. Hardened surface of the flooring is even and glossy. Used mainly for spaces with light to medium load (pedestrians, tire vehicles).

Trowel-Applied Compositions

EPIDIAN® FLOOR Q SYSTEM
EPIDIAN® FLOOR QF SYSTEM
DRAINAGE FLOORING SYSTEM

Compositions applied with a trowel usually contain over 80% of fillers. They are applied in 3 to 10 mm thick layers. Such flooring systems boast very high mechanical resistance. Used mainly for spaces, with heavy load, anti-slippery surface requirements, and possible surface declines.

These compositions may also be used as repair mortars to fill in cracks and other floor defects. When using a highly filled composition, it is best to apply pure resin with hardener as a primer / (sealing layer) first.

Thin Epoxy Flooring

EPIDIAN® FLOOR C1 SYSTEM
EPIDIAN® FLOOR C1 PLUS SYSTEM
EPIDIAN® FLOOR C1 FLAKES SYSTEM

These two-component pigmented compositions are used to create thin (0.15-0.5 mm) epoxy flooring with a roller, used to protect concrete surface and provide an aesthetic finish.

Available in a variety of finishes, ranging from sleek to anti-slippery, possibly with addition of acrylic flakes. Used in spaces with light load.

Application

Substrate Parameters

- minimum compressive strength – 25 MPa
- minimum tensile strength – 1.5 MPa
- fresh concrete should be seasoned for at least 28 days
- permissible moisture content 4%

Preparation of the Substrate

The surface of the substrate must be clean, dry and absorbent, that is, fairly rough. Impurities such as hardened plaster, laitance, remains of paint, along with substances with an anti-adhesive effect, like oils, fats, paraffin, and lubricants should be carefully removed.

The surface may be cleaned with various methods, including shot blasting, sandblasting, firing etc. After cleaning, the substrate should be thoroughly cleaned, preferably with an industrial vacuum cleaner. Any holes and irregularities of the substrate should be primed and filled with epoxy putty, then levelled, in order to maintain a certain degree of roughness, thus increasing the absorbency.

If the surface is not properly prepared in accordance with the abovementioned suggestions and industry standards, this may further result in insufficient adhesion of the coating to concrete surface or even partial detachment of the coating.

Atmospheric Conditions

The air temperature and humidity during preparation, application, and curing of the epoxy compositions, have a big impact on the quality and properties of the coating.

Optimal working conditions are:

- temperature: approximately 20 °C but no lower than 15 °C,
- relative air humidity: 65%.

Turbidity, cratering or stickiness may appear on the cured coating in case of higher humidity level. Lowering of the temperature of the substrate while curing below the dew point* has a particularly critical effect on the appearance and quality of the coating.

Condensation, formed at the dew point temperature, significantly reduces adhesiveness. In case of multi-layer coatings, the next layer may not be applied if the temperature of the substrate is lower than or equal to the dew point temperature. The temperature must be higher by at least 3 °C.

Before application, the temperature of the substrate as well as the ambient temperature and relative air humidity should be measured. If the ratio of the substrate temperature to the ambient temperature is unfavourable, it is recommended to use a hot air blower, heater or any other device to increase it.

While curing subsequent coatings, the space should be protected from water, chemicals, dust or draft.

Substrate Priming

Before application the surface should be thoroughly primed to reinforce concrete, minimize absorbency, and obtain a bonding layer for further flooring application.

The substrate may be primed with one of the following compositions:

- EPIDIAN® FLOOR G1 + HARDENER U1,
- EPIDIAN® FLOOR G2 + HARDENER U1,
- EPIDIAN® FLOOR G1 + HARDENER MTB,
- EPIDIAN® FLOOR G2 + HARDENER MTB.

* detailed dew point chart available on page 46.

The components should be mixed in following proportions:

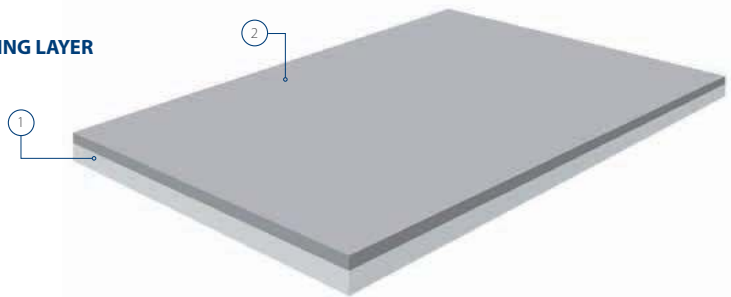
- EPIDIAN® FLOOR G1 ....100 parts by weight
  HARDENER U1.....40 parts by weight
- EPIDIAN® FLOOR G2 ....100 parts by weight
  HARDENER U1.....40 parts by weight
- EPIDIAN® FLOOR G1 ....100 parts by weight
  HARDENER MTB.....37 parts by weight
- EPIDIAN® FLOOR G2 ....100 parts by weight
  HARDENER MTB .....37 parts by weight

The mixture should be used within 10 minutes.

Therefore it is recommended to mix the ingredients in reasonably small portions, so that the material may be used within this timeframe.

The primer should be applied with a brush, roller or a rubber squeegee. It should be applied evenly and absorbed by the substrate with no visible remains of the mixture on the surface. In case of highly absorbent substrates, it is recommended to apply two layers of primer. The second layer may only be applied after the first one is fully hardened. Each layer should harden 16 to 24 hours from application, in 20 °C.

STRUCTURE OF THE PRIMING LAYER



1. concrete substrate
2. priming layer

Before application of epoxy resin screeds, EPIDIAN® FLOOR Q, and EPIDIAN® FLOOR QF systems, it is recommended to cover the primed surface with 0.1-0.3 mm quartz sand right before hardening (about 1.0 kg/m^2). After hardening, before application of the next layer of the system of your choice, the excess sand should be removed.

Epoxy Putties

In case of old or significantly damaged surfaces, it may be necessary to prep the substrate by filling in the cracks and evening out the concrete. Epoxy putty should be applied to a previously primed, fully hardened surface.

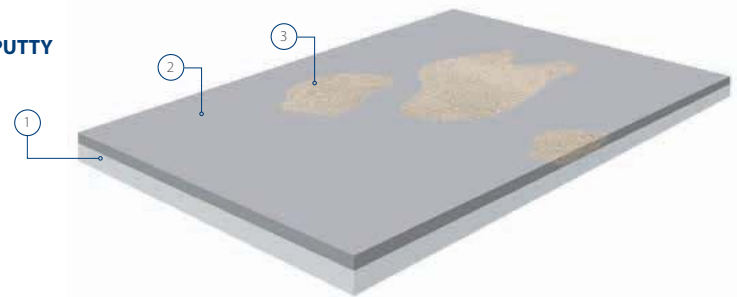
To prepare an epoxy putty, mix:

- EPIDIAN® FLOOR G1 + HARDENER U1 + quartz sand (0.1-0.3 mm),
- EPIDIAN® FLOOR G2 + HARDENER U1 + quartz sand (0.1-0.3 mm).

For quick repair jobs use:

- EPIDIAN® FLOOR G1 + HARDENER MTB + quartz sand,
- EPIDIAN® FLOOR G2 + HARDENER MTB + quartz sand.

STRUCTURE OF EPOXY PUTTY



1. concrete substrate
2. priming layer
3. putty

Epoxy Resin Screeds

Screeds are applied to reinforce weak surfaces or even out major surface irregularities and declines.

A screed may be prepared according to one of the following formulas:

- EPIDIAN® FLOOR G1 + HARDENER U1 + quartz sand (0.4-0.8 mm),
- EPIDIAN® FLOOR G2 + HARDENER U1 + quartz sand (0.4-0.8 mm).

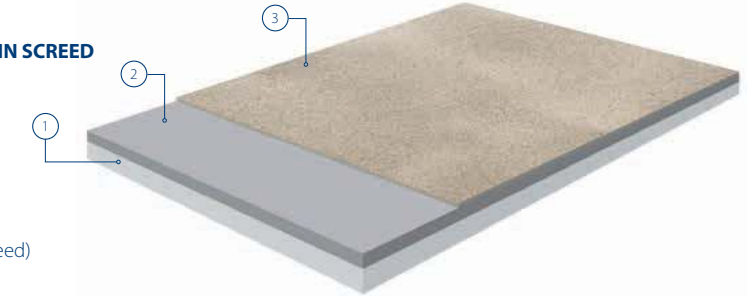
The components should be mixed in following proportions:

- EPIDIAN® FLOOR G1 ....100 parts by weight
  HARDENER U1.....40 parts by weight
- EPIDIAN® FLOOR G2 ....100 parts by weight
  HARDENER U1.....40 parts by weight

After application of resin and hardener to the primed concrete substrate, whole surface should be covered with sand and left to harden.

The next day, after hardening, the excess sand should be removed and the whole surface should be grinded and thoroughly cleaned to even out the floor before application of the next layers.

STRUCTURE OF EPOXY RESIN SCREED



1. concrete substrate
2. priming layer
3. epoxy quartz coating (screed)

EPIDIAN® FLOOR C1

Flooring system designed to make thin (0.15-0.5 mm), aesthetic, and easy to maintain coloured floors on a concrete substrate in order to protect them against dust as well as mechanical and chemical impact. Ensures, among others, resistance to water, alkali, petrol, diesel oil, and light loads from tyre vehicles.

Applications

- bays and aisles in industrial plants
- garages and bus depots
- technical rooms in offices and schools
- warehouses, dairies, breweries, food processing plants
- staff facilities
- sterile rooms in pharmaceutical plants

Properties

- the highest class of abrasion resistance (BCA AR 0.5)
- high chemical resistance
- good mechanical resistance
- water resistance
- possible application on walls and other vertical surfaces
- possible spray application on horizontal surfaces
- does not contain nonylphenol

Mixing Proportions

Priming Solution:

- EPIDIAN® FLOOR G1 ....100 parts by weight
- HARDENER U1..... 40 parts by weight

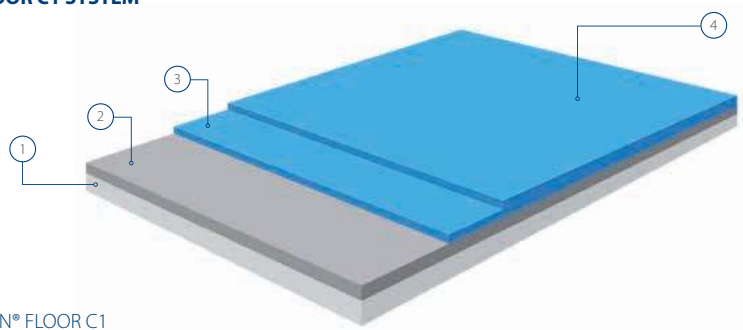
Pigmented Composition:

- EPIDIAN® FLOOR C1.....100 parts by weight
- HARDENER U1.....25 parts by weight

Material Consumption

- priming solution – EPIDIAN® FLOOR G1 with HARDENER U1: material consumption depends on the absorbency of the substrate and equals approx. 0.2-0.4 kg/m^2
- main coat – EPIDIAN® FLOOR C1 with HARDENER U1: material consumption depends on the structure of the substrate and equals approx. 0.2-0.3 kg/m^2 for one layer (0.15-0.25 mm); recommended to apply in two layers

STRUCTURE OF EPIDIAN® FLOOR C1 SYSTEM



1. concrete substrate
2. primer EPIDIAN® FLOOR G1 + HARDENER U1
3. main coat (first layer) EPIDIAN® FLOOR C1 + HARDENER U1
4. main coat (second layer) EPIDIAN® FLOOR C1 + HARDENER U1

Application

The system should be applied to a previously cleaned and primed surface. Resin and hardener should be mixed in the amount that can be used relatively quickly, that is within approx. 15 mins.

The components should be mixed in appropriate weight proportions using a drill at a maximum speed of 400 rpm.

Mixing should be carried out in the following manner:

- mix EPIDIAN® FLOOR C1 thoroughly (due to the partial sedimentation of the fillers),
- add HARDENER U1 and mix with a low-speed mixer until a homogeneous mass is obtained.

Streaks indicate that the mass has been insufficiently mixed. It is also necessary to pay attention that part of it does not adhere to the walls or the bottom of the vessel. The mixing time should be kept as short as possible, usually about 3-5 minutes to avoid overaerating.

Afterwards, the mixture should be poured into another vessel, preferably made of polyethylene. The mixture should then be stirred again and applied onto the primed concrete, using a roller or a paint brush.

After application, the coating should be left to cure for 24 hours at 20 °C. After this time and after making sure that the resin has hardened, the surface should be made slightly matt with fine abrasive paper, in order to remove surface contamination; it should then be thoroughly vacuum-cleaned. The second layer should be applied in the same way as the first layer was applied. Allow for the surface to harden.

The floor can be used by pedestrians after a minimum of 24 hours after the last coat was applied if the entire surface is evenly hardened. The surface can be used for full loads after 7 days and may be washed for the first time after 14 days.

EPIDIAN® FLOOR C1 PLUS

Flooring system designed to make 0.7-1.5 mm thin anti-slippery epoxy flooring. Aesthetic and easy to maintain clean, this pigmented epoxy flooring protects concrete from dust, mechanical, and chemical impact with a long lasting anti-slippery finish. Resistant to water, alkali, petrol, diesel oil, and light loads from vehicles on rubber tyres.

Applictions

- bays and aisles in industrial plants
- driveways
- garages and bus depots
- technical rooms in offices and schools
- warehouses, dairies, breweries, food processing plants
- staff facilities
- sterile rooms in pharmaceutical plants

Properties

- anti-slippery finish
- increased abrasion resistance
- high chemical resistance
- good mechanical resistance
- water resistant
- does not contain nonylphenol

Mixing Proportions

Priming Solution:

- EPIDIAN® FLOOR G1 ....100 parts by weight
- HARDENER U1.....40 parts by weight

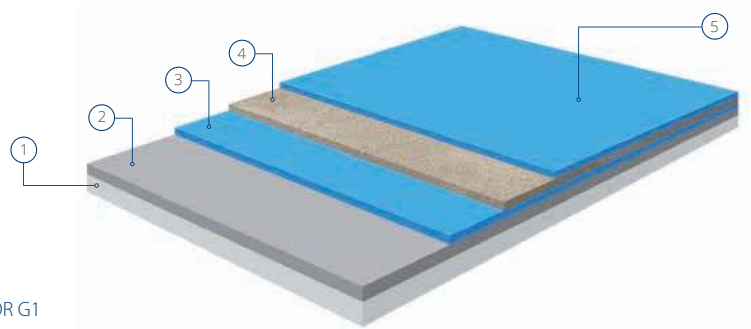
Pigmented Composition:

- EPIDIAN® FLOOR C1.....100 parts by weight
- HARDENER U1.....25 parts by weight

Material Consumption

- priming solution – EPIDIAN® FLOOR G1 with HARDENER U1: material consumption depends on the absorbency of the substrate and equals approx. 0.2-0.4 kg/m^2
- first layer of EPIDIAN® FLOOR C1 with HARDENER U1: material consumption depends on the structure of the substrate and equals approx. 0.4 kg/m^2 (single application)
- second (top) layer of EPIDIAN® FLOOR C1 with HARDENER U1: material consumption depends on the intended effect and amounts 0.8-1.0 kg/m^2
- quartz sand: material consumption equals approx. 3 kg/m^2

STRUCTURE OF EPIDIAN® FLOOR C1 PLUS SYSTEM



1. concrete substrate
2. primer EPIDIAN® FLOOR G1 + HARDENER U1
3. main coat (first layer) EPIDIAN® FLOOR C1 + HARDENER U1
4. natural quartz sand (0.4-0.8 mm)
5. main coat (second layer) EPIDIAN® FLOOR C1 + HARDENER U1

Application

The system should be applied to a previously cleaned and primed surface. Resin and hardener should be mixed in the amount that can be used relatively quickly, that is within approx. 15 mins.

The components should be mixed in appropriate weight proportions using a drill at a maximum speed of 400 rpm.

Mixing should be carried out in the following manner:

- mix EPIDIAN® FLOOR C1 thoroughly (due to the partial sedimentation of the fillers),
- add HARDENER U1 and mix with a low-speed mixer until a homogeneous mass is obtained.

Streaks indicate that the mass has been insufficiently mixed. It is also necessary to pay attention that part of it does not adhere to the walls or the bottom of the vessel. The mixing time should be kept as short as possible, usually about 3-5 minutes to avoid overaerating.

Afterwards, the mixture should be poured into another vessel, preferably made of polyethylene. The mixture should then be stirred again and applied onto the primed concrete, using a roller or a paint brush, making sure that the material consumption is approximately 0.4 kg/m^2.

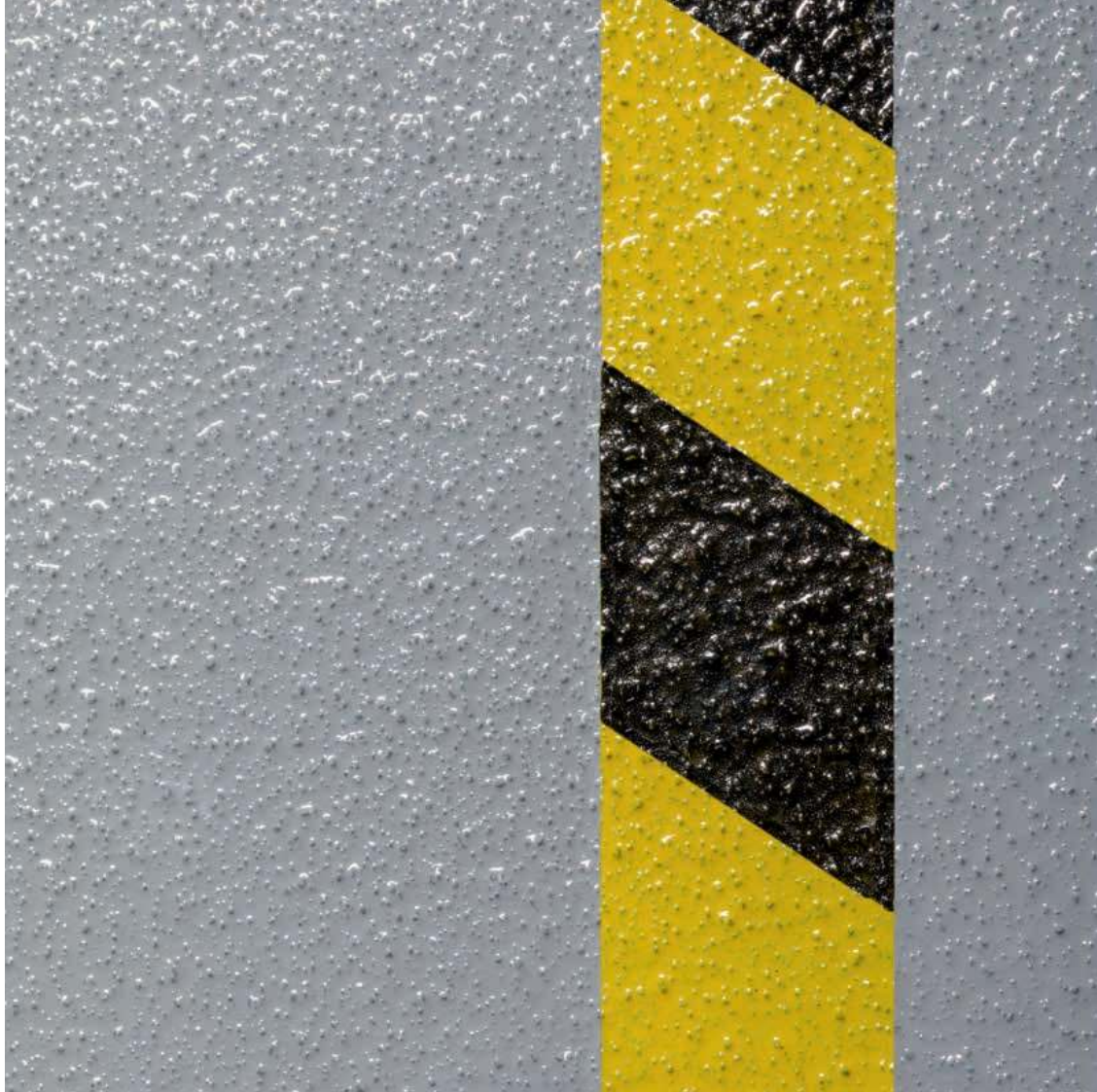
Right after application, the resin should be fully covered with natural quartz sand (0.4-0.8 mm fraction) and left to harden. Consumption of sand equals approx. 3 kg/m^2. This layer should be left to harden for approx. 24 hours at 20 °C.

After making sure that the resin has fully hardened, the excess sand should be removed with a broom. The surface should be evened out with abrasive paper, a trowel or a grinder to remove excess bumps and other surface irregularities.

The top coat, that is EPIDIAN® FLOOR C1 and HARDENER U1, may be applied in various techniques, depending on the desired effect:

- with a velour roller (fully non-slip, rough surface),
- with a steel float (smooth surface with increased anti-slip properties),
- with a rubber trowel (for an in-between effect).

The floor can be used by pedestrians after a minimum of 24 hours after the last coat had been applied if the entire surface is evenly hardened. The surface can be used for full loads after 7 days and may be washed for the first time after 14 days.



EPIDIAN® FLOOR C1 FLAKES

Designed to make thin (up to 1.0 mm) floors on a concrete substrate in rooms exposed to light loads.

Applications

- bays and aisles in industrial plants
- garages and bus depots
- technical rooms in offices and schools
- warehouses, dairies, breweries, food processing plants
- staff facilities
- sterile rooms in pharmaceutical plants

Properties

- high mechanical resistance
- good chemical resistance
- increased abrasion resistance
- bright, textured finish
- may be applied on walls or other vertical surfaces
- may be applied to surfaces with major inclination angle and possible declines
- does not contain nonylphenol
- increased UV resistance

Mixing Proportions

Priming Solution:

- EPIDIAN® FLOOR G1 ....100 parts by weight
- HARDENER U1.....40 parts by weight

Colour Composition:

- EPIDIAN® FLOOR C1.....100 parts by weight
- HARDENER U1.....25 parts by weight

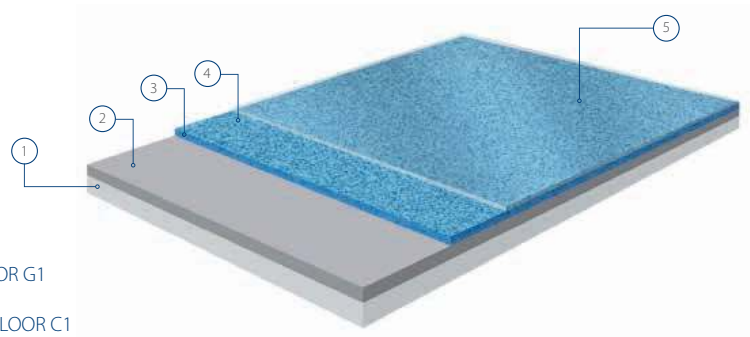
Top Coat:

- EPIDIAN® TOP FINISH.....100 parts by weight
- HARDENER TOP FINISH.....40 parts by weight

Material Consumption

- priming solution – EPIDIAN® FLOOR G1 with HARDENER U1: material consumption depends on the absorbency of the substrate and equals approx. 0.2-0.4 kg/m^2
- main coat – EPIDIAN® FLOOR C1 with HARDENER U1: material consumption depends on the structure of the substrate and equals approx. 0.2-0.3 kg/m^2
- acrylic flakes: consumption equals approx. 0.1-0.5kg/m^2 for a single application (0.15-0.25 mm layer) but also depends on the intended effect
- top layer – EPIDIAN® TOP FINISH combined with the TOP FINISH HARDENER: material consumption equals approx. 0.15-0.4 kg/m^2

STRUCTURE OF EPIDIAN® FLOOR C1 FLAKES SYSTEM



1. concrete substrate
2. primer EPIDIAN® FLOOR G1 + HARDENER U1
3. main coat EPIDIAN® FLOOR C1 + HARDENER U1
4. acrylic flakes
5. top coat EPIDIAN® TOP FINISH + HARDENER TOP FINISH

Application

The system should be applied to a previously cleaned and primed surface. Resin and hardener should be mixed in the amount that can be used relatively quickly, that is within approx. 15 mins.

The components should be mixed in appropriate weight proportions using a drill at a maximum speed of 400 rpm.

Mixing should be carried out in the following manner:

- mix EPIDIAN® FLOOR C1 thoroughly (due to the partial sedimentation of the fillers),
- add HARDENER U1 and mix with a low-speed mixer until a homogeneous mass is obtained.

Streaks indicate that the mass has been insufficiently mixed. It is also necessary to pay attention that part of it does not adhere to the walls or to the bottom of the vessel. The mixing time should be kept as short as possible, approx. 3-5 minutes to avoid overaerating.

Afterwards, the mixture should be poured into another vessel, preferably made of polyethylene. The mixture should then be stirred again and applied onto the primed concrete, using a roller or a paint brush.

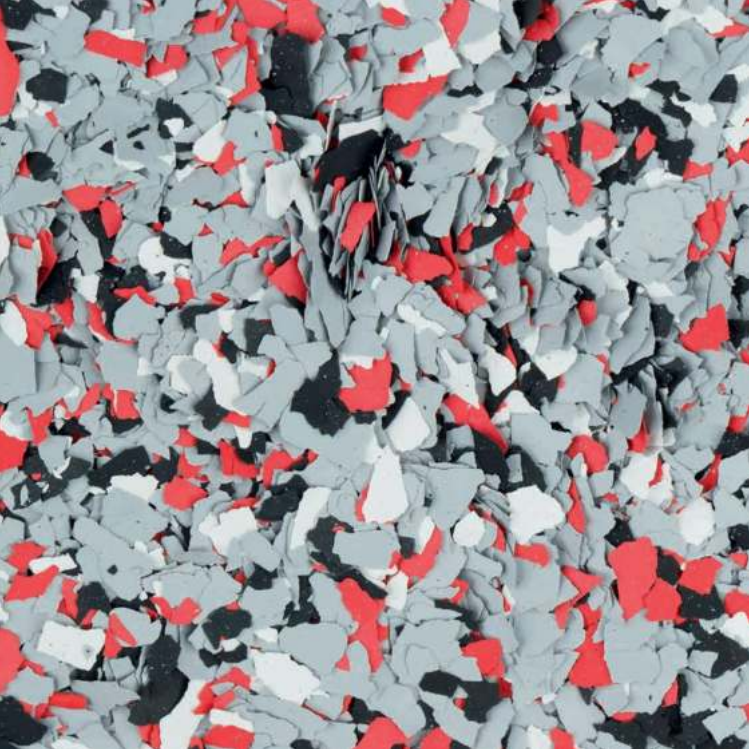
Right after application, the resin should be covered with acrylic flakes (about 0.1-0.5 kg/m^2, depending on the desired effect). This layer should be left to harden for approx. 24 hours at 20 °C. After having made sure that the resin is fully hardened, the excess flakes should be removed.

Mix the components of the top coat before use in accordance with abovementioned weight proportions.

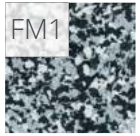
The solution should be applied with a steel float or a rubber squeegee. Use a roller to evenly distribute the varnish over the entire surface by rolling „crosswise". Allow for the surface to harden.

The floor can be used by pedestrians after a minimum of 24 hours after the last coat had been applied if the entire surface is evenly hardened. The surface can be used for full loads after 7 days and may be washed for the first time after 14 days.

Acrylic Flakes Colour Palette



Ready-Made Mixes



FM1 = 1 x F1 + 2 x F2 + + 2 x F12

FM2 = 1 x F1 + 1 x F9 + + 1 x F12

FM3 = 2 x F1 + 1 x F4 + + 2 x F12

FM7 = 1 x F1 + 1 x F2 + + 1 x F7 + 1 x F12

FM8 = 1 x F1 + 1 x F5 + + 3 x F7 + 1 x F8 + 1 x F12

FM9 = 1 x F1 + 1 x F5 + + 1 x F7 + 3 x F8

FM13 = 1 x F1 + 4 x F2 + + 1 x F9 + 1 x F12

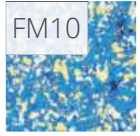
FM14 = 1 x F1 + 1 x F2 + + 1 x F5 + 4 x F11

FM15 = 1 x F1 + 3 x F2 + + 1 x F3 + 1 x F12

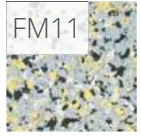
FM4 = 2 x F1 + 3 x F11 + + 2 x F12

FM5 = 3 x F2 + 1 x F9 + + 1 x F11

FM6 = 1 x F1 + 3 x F4 + + 1 x F11



FM10 = 1 x F1 + 1 x F5 + + 4 x F10



FM11 = 1 x F1 + 4 x F2 + + 1 x F5 + 1 x F12

FM12 = 1 x F1 + 4 x F2 + + 1 x F10 + 1 x F12

FM16 = 4 x F1 + 1 x F2 + + 3 x F5 + 1 x F11 + 1 x F12

All proportions are measured in parts by weight.

EPIDIAN® FLOOR S1

Epoxy system designed for making self-levelling 1 to 5 mm thick floors. Protects the substrate against mechanical and chemical impact and allows to achieve a uniform, even surface in a colour of your choice.

Applications

- bays and aisles in industrial plants
- garages and bus depots
- technical rooms in offices and schools
- warehouses, dairies, breweries, food processing plants
- staff facilities
- sterile rooms in pharmaceutical plants
- housing, stately buildings, museums, and galleries

Properties

- the highest class of abrasion resistance (BCA AR 0.5)
- high chemical resistance
- high mechanical resistance
- watertight
- easy to clean
- does not contain nonylphenol

Mixing Proportions

Priming Solution:

- EPIDIAN® FLOOR G1 ....100 parts by weight
- HARDENER U1.....40 parts by weight

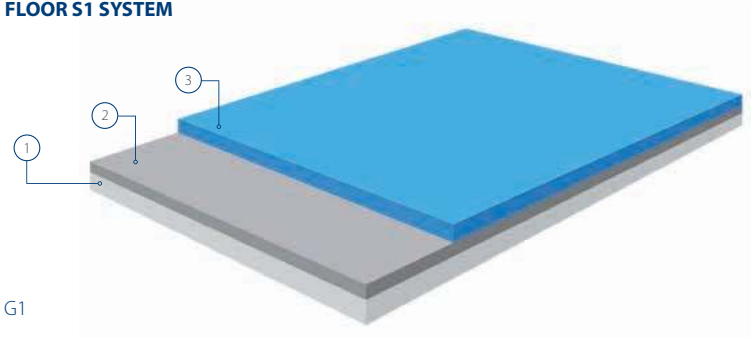
Colour Composition:

- EPIDIAN® FLOOR S1 .....100 parts by weight
- HARDENER U1.....25 parts by weight

Material Consumption

- priming solution – EPIDIAN® FLOOR G1 with HARDENER U1: material consumption depends on the absorbency of the substrate and equals approx. 0.2-0.4 kg/m^2
- main coat – EPIDIAN® FLOOR S1 with HARDENER U1: material consumption depends on the structure of the substrate and required parameters of the flooring and equals on average, 1.3-1.4 kg/m^2/mm

STRUCTURE OF EPIDIAN® FLOOR S1 SYSTEM



1. concrete substrate
2. primer EPIDIAN® FLOOR G1 + HARDENER U1
3. main coat EPIDIAN® FLOOR S1 + HARDENER U1

Application

The system should be applied to a previously cleaned and primed surface.

The components should be mixed in appropriate weight proportions using a drill at a maximum speed of 400 rpm.

Mixing should be carried out in the following manner:

- mix EPIDIAN® FLOOR S1 thoroughly (due to the partial sedimentation of the fillers),
- add HARDENER U1 and mix with a low-speed mixer until a homogeneous mass is obtained.

Streaks indicate that the mass has been insufficiently mixed. It is also necessary to pay attention that part of it does not adhere to the walls or to the bottom of the vessel.

The mixing time should be kept as short as possible, approx. 3-5 mins to avoid overaerating.

Afterwards, the mixture should be poured into another vessel, preferably made of polyethylene. The mixture should then be stirred again and applied onto the primed concrete, using a toothed trowel or a squeegee.

Right after application the flooring should be deaerated with a spike roller. The mixture should be evenly spread across the surface within over a dozen minutes.

The floor can be used by pedestrians after a minimum of 24 hours after the last coat had been applied if the entire surface is evenly hardened. The surface can be used for full loads after 7 days and may be washed for the first time after 14 days.
.

EPIDIAN® FLOOR Q

System based on colourless resin and coloured quartz sand, designed to be used in industrial buildings and factories, including food industry. It can also be used in rooms exposed to heavy loads caused by movement of vehicles on tires.

Applications

- factory halls
- garages and bus depots
- technical and social rooms
- warehouses, dairies, breweries, food factories
- wholesalers, cold stores
- sterile rooms

Properties

- very good abrasion resistance (BCA AR 0.5)
- very good mechanical resistance
- good chemical resistance
- rich colour palette of quartz sand
- allows primer application at lower temperatures
- may be applied on substrates with high inclination angle (on slopes)
- watertight
- easy to maintain clean
- does not contain nonylphenol

Mixing Proportions

- EPIDIAN® FLOOR G2 ....100 parts by weight
- HARDENER U1 .....40 parts by weight

Material Consumption

- priming solution – EPIDIAN® FLOOR G2 with HARDENER U1: material consumption depends on the substrate absorbency and equals approx. 0.2-0.4 kg/m^2
- main coat – EPIDIAN® FLOOR G2 with HARDENER U1: material consumption equals approx. 0.4-2 kg/m^2
- top coat – EPIDIAN® FLOOR G2 with HARDENER U1: material consumption equals approx. 0.3-1 kg/m^2

Application

The system should be applied to a previously cleaned and primed surface.

STRUCTURE OF EPIDIAN® FLOOR Q SYSTEM

1. concrete substrate
2. primer EPIDIAN® FLOOR G2 + HARDENER U1
3. main coat EPIDIAN® FLOOR G2 + HARDENER U1 + coloured quartz sand
4. top coat EPIDIAN® FLOOR G2 + HARDENER U1

Trowel Application

Add quartz sand in following proportions:

- EPIDIAN® FLOOR G2 + HARDENER U1 .....10 parts by weight
- coloured quartz sand (0.4-0.8 mm) .....60 parts by weight

Resin and hardener should be mixed in the amount that can be applied relatively quickly. Apply the composition onto primed concrete substrate using a bull float, then spread the mixture with a squeegee or a trowel until you achieve the desired thickness. Leave to cure for 16-24 hours at 20 °C.

Pour the top coat onto a previously hardened surface and spread evenly with a squeegee until it is completely leveled. Leave to cure for 24 hours at 20 °C.

The mixture should be applied within approx. 10 minutes from mixing.

Sprinkle Application

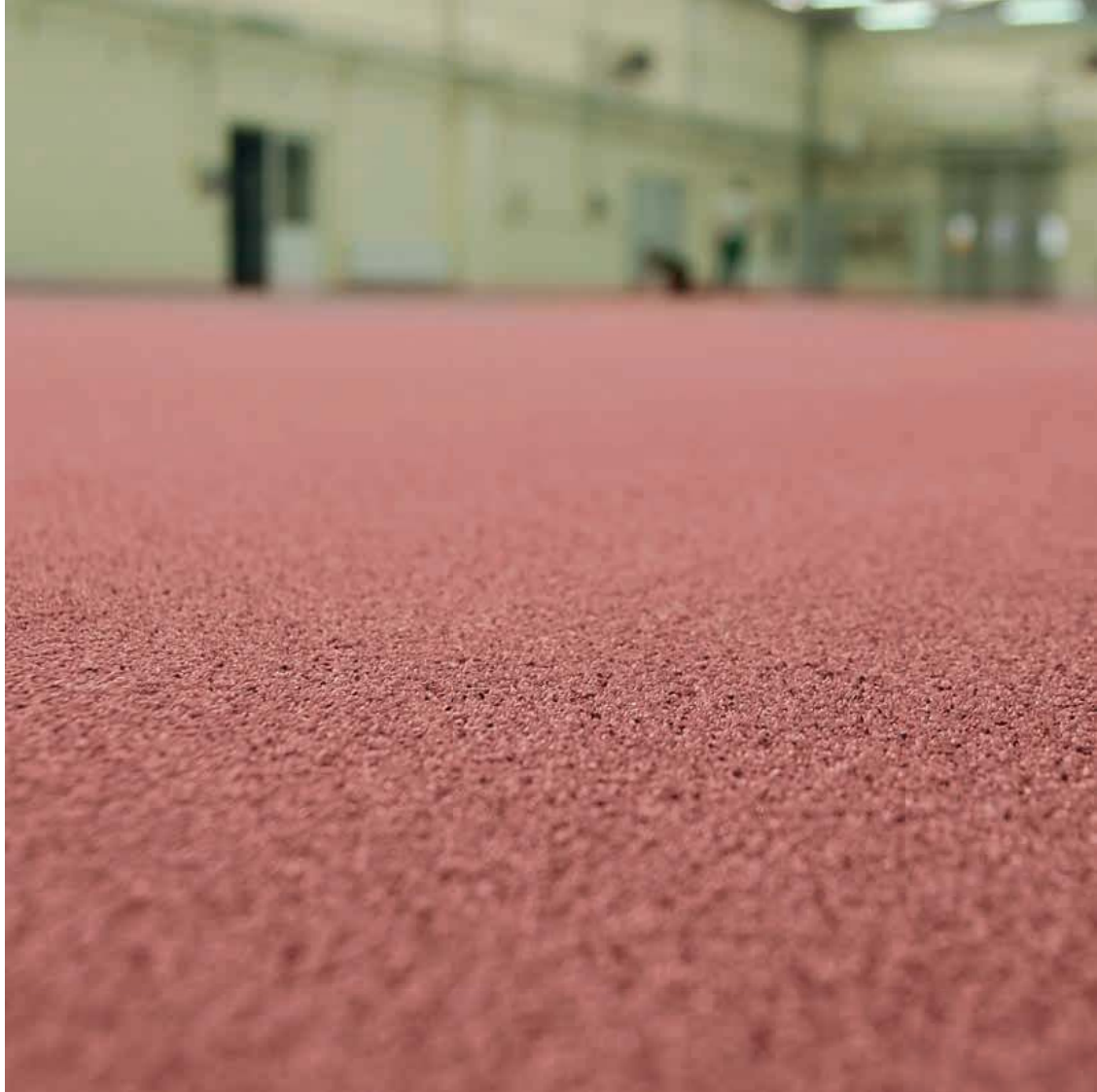
After mixing, the composition should be poured into another vessel, preferably made of polyethylene. The mixture should then be stirred again and applied onto the primed concrete, using a roller or a paint brush, making sure that the material consumption equals approx. 0.4 kg/m^2.

Right after application, the resin should be fully covered with natural quartz sand (0.4-0.8 mm fraction) and left to harden. Consumption of sand equals approx. 3 kg/m^2. This layer should be left to harden for at least 24 hours at 20 °C.

Based on the desired result, the top coat layer should be applied:

- with a velour roller (fully non-slip, rough surface),
- with a steel float (smooth surface with increased anti-slip properties),
- with a rubber trowel (for an in-between effect).

The floor can be used by pedestrians after a minimum of 24 hours after the last coat had been applied if the entire surface is evenly hardened. The surface can be used for full loads after 7 days and may be washed for the first time after 14 days.



EPIDIAN® FLOOR QF

System based on colourless resin and coloured quartz sand, designed to be used in industrial buildings and factories, including food industry. It can also be used in rooms exposed to heavy loads caused by movement of vehicles on tires.

Applications

- factory halls
- garages and bus depots
- technical and social rooms
- warehouses, dairies, breweries, food factories
- wholesalers, cold stores
- sterile rooms

Properties

- very good abrasion resistance (BCA AR 0.5)
- very good mechanical resistance
- good chemical resistance
- rich colour palette of quartz sand
- allows primer application at lower temperatures
- may be applied on substrates with high inclination angle (on slopes)
- watertight
- easy to maintain clean
- does not contain nonylphenol

Mixing Proportions

Priming Solution:

- EPIDIAN® FLOOR G2 ....100 parts by weight
- HARDENER MTB .....37 parts by weight

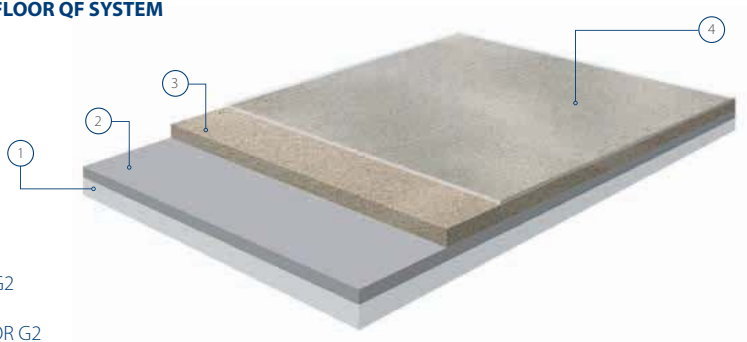
Main Coat and Top Coat:

- EPIDIAN® FLOOR G2 ....100 parts by weight
- HARDENER U1 .....40 parts by weight

Material Consumption

- priming solution – EPIDIAN® FLOOR G2 with HARDENER MTB: material consumption depends on the substrate absorbency and equals approx. 0.2-0.4 kg/m^2
- main coat – EPIDIAN® FLOOR G2 with HARDENER U1: material consumption equals approx. 0.4-2 kg/m^2
- top coat – EPIDIAN® FLOOR G2 with HARDENER U1: material consumption equals approx. 0.3-1.0 kg/m^2

STRUCTURE OF EPIDIAN® FLOOR QF SYSTEM



1. concrete substrate
2. primer EPIDIAN® FLOOR G2 + HARDENER MTB
3. main coat EPIDIAN® FLOOR G2 + HARDENER U1 + coloured quartz sand
4. top coat EPIDIAN® FLOOR G2 + HARDENER U1

Application

The system should be applied to a previously cleaned and primed surface.

Trowel Application

Add quartz sand in following proportions:

- EPIDIAN® FLOOR G2 + HARDENER U1 .....10 parts by weight
- coloured quartz sand (0.4-0.8 mm) .....60 parts by weight

Resin and hardener should be mixed in the amount that can be applied relatively quickly. Apply the composition onto primed concrete substrate using a bull float, then spread the mixture with a squeegee or a trowel until you achieve the desired thickness. Leave to cure for 16-24 hours at 20 °C.

Pour the top coat layer onto a previously hardened surface and spread evenly with a squeegee or a float tool until it is completely leveled. Leave to cure for 24 hours at 20 °C.

The mixture should be applied within approx. 10 minutes from mixing.

Sprinkle Method

After mixing, the composition should be poured into another vessel, preferably made of polyethylene. The mixture should then be stirred again and applied onto the primed concrete, using a roller or a paint brush, making sure that the material consumption is approx. 0.4 kg/m^2.

Right after application, the resin should be fully covered with natural quartz sand (0.4-0.8 mm fraction) and left to harden. Consumption of sand equals approx. 3 kg/m^2. This layer should be left to harden for at least 24 hours at 20 °C.

Based on the desired effect, the top coat should be applied:

- with a velour roller (fully non-slip, rough surface),
- with a steel float (smooth surface with increased anti-slip properties),
- with a rubber trowel (for an in-between effect).

The floor can be used by pedestrians after a minimum of 24 hours after the last coat had been applied if the entire surface is evenly hardened. The surface can be used for full loads after 7 days and may be washed for the first time after 14 days.

DRAINAGE SYSTEM

An environmentally friendly system based on a transparent resin and stone, designed to make floors without the need to introduce any additional drainage solutions on various types of substrate. Allows to create a durable water-permeable coating that may also be used outside thanks to its enhanced UV resistance.

Applications

- bicycle paths
- pedestrian paths
- balconies, terraces
- stairs
- pool surroundings
- tree/bush protection

Properties

- water-permeability
- frost resistance
- enhanced UV resistance
- mechanical resistance
- chemical resistance
- environmentally friendly
- natural finish
- easy to maintain clean

Mixing Proportions

Priming Solution

- EPIDIAN® FLOOR G1 ....100 parts by weight
- HARDENER U1.....40 parts by weight

Drainage Coat

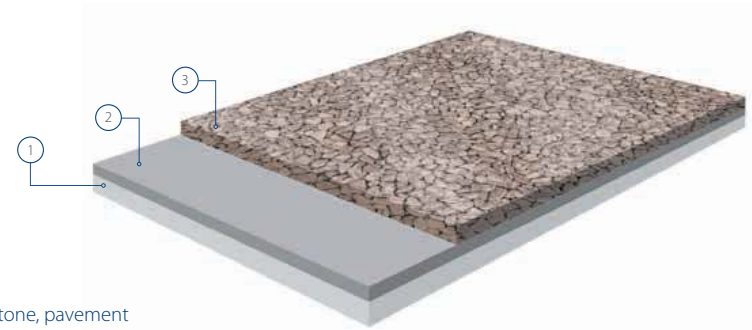
- EPIDIAN® 6293 .....100 parts by weight
- HARDENER 6293.....45 parts by weight

Material Consumption

- priming solution – EPIDIAN® FLOOR G1 with HARDENER U1: material consumption depends on the substrate absorbency and equals approx. 0.2-0.4 kg/m^2
- drainage coat – EPIDIAN® 6293 with HARDENER 6293: material consumption depends on stone fraction and desired coating thickness and equals approx. 0.6-1.1 kg/m^2

Stone Fraction	Layer Thickness	Indicative Stone Consumption	Indicative Binder Consumption
[mm]	[mm]	[kg]	[kg]
1-2	4-5	12-14	0.6-0.7
2-4	8-10	14-18	0.7-0.9
4-8	16-22	18-22	0.9-1.1

DRAINAGE SYSTEM STRUCTURE



1. concrete substrate, stone, pavement
2. primer EPIDIAN® FLOOR G1 + HARDENER U1
3. main coat EPIDIAN® 6293 + HARDENER 6293 + grit

Application

The system should be applied to a previously cleaned and primed surface. The prepared resin composition should be mixed with the stone according to the guidelines. Afterwards, the mixture should be applied onto the primed concrete using a metal trowel, occasionally wiping it with acetone.

If case of a larger areas or multiple colours/patterns, dilatation strips or other formworks need to be implemented. On the following day those may be removed and application may be resumed.

The floor can be used by pedestrians after a minimum of 24 hours after the last coat had been applied if the entire surface is evenly hardened. The surface can be used for full loads after 7 days and may be washed for the first time after 14 days.

Caution! The coating may not be in contact with water for at least 14 days after application of the last layer.

EPIDIAN® 431

This system is a homogeneous, dense grey mass with glue-like consistency, based on modified epoxy resin and mineral fillers. Designed to install chemically resistant floor covering made with acid-resistant tiles in industrial facilities. It may also be used to join various materials (e.g. wood, metal) after respective preparation of glued surfaces and application tests.

Applications

- joining chemically resistant tiles and fittings in industrial facilities where high mechanical and chemical resistance is required
- bonding of various materials like metal or wood

Properties

- high chemical resistance
- very good adhesion to concrete surfaces
- pressure application
- may be used as joint filler
- high thermal resistance

Mixing Proportions

- EPIDIAN® 431.....100 parts by weight
- HARDENER U1.....12 parts by weight

Material Consumption

Material consumption of EPIDIAN® 431 and HARDENER U1 composition equals 8-12 kg/m^2 depending on the size and structure of the back of the tiles.

Application

Glue processing should be carried out at temperatures above 15 °C. Optimal working and curing conditions are obtained at approx. 20 °C and relative humidity up to 65%.

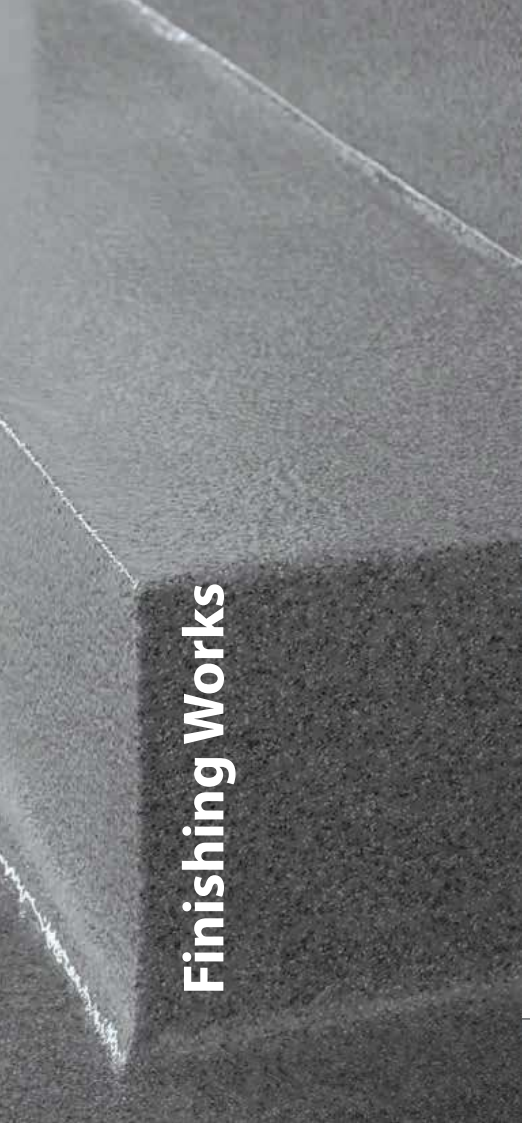
When installing the floor covering made of acid resistant tiles or fittings, the substrate must be dry (humidity max. 4%), dedusted and degreased with the minimum compressive strength of 25 MPa and tensile strength of 1.5 MPa. Fresh concrete needs to be seasoned for at least 28 days.

Right before the preparation of the glue, in which a partial sedimentation of fillers may occur, all ingredients must be thoroughly mixed. The glue is prepared by thorough mixing of EPIDIAN® 431 and HARDENER U1.

The average lifetime of 100 g of resin putty at room temperature equals approx. 80 minutes. Ingredients must be mixed thoroughly, within the minimum time necessary for the ingredients to combine. Only small amounts of the mixture ought to be prepared at a single time due to the short lifetime of the mass.

Tiles Fitting by Pressure Method

Tiles need to be laid so that the space between them and the substrate is completely filled with the glue. The adhesive should be applied on the back of the tiles and substrate. Excess glue must be immediately removed with a trowel or a putty knife. The thickness of the layer should not exceed 6 mm. The joint width should not reach more than 2-3 mm. The adhesive fully hardens after 7 days at room temperature.



Finishing Works

Plinths

The implementation of any epoxy flooring system often requires setting up fillets i.e. plinths where the walls meet the floor. The surface on which the plinth is to be laid, must first be cleaned and primed (both wall and floor).

Plinth Surface Finish

The plinth surface is usually finished with the same system that is used for the floor. It is also possible to use the fast curing system with HARDENER MTB, which requires appropriate skill and experience to process the prepared mass efficiently and safely before it cures.

In order to obtain a homogeneous mass, fillers such as quartz flour, fine quartz (0.1-0.3 mm), Aerosil®, Cab-O-Sil® or HDK® silica may be added.

Base Plinth Shaping

To make a plinth it is recommended to use one of the following compositions:

- EPIDIAN® FLOOR G1 + HARDENER U1 + quartz sand
- EPIDIAN® FLOOR G2 + HARDENER U1 + quartz sand

Stairs

When applying epoxy floors on communication routes, it is often necessary to make stairs using the same system.

Horizontal surfaces should be prepped similarly to epoxy flooring application preparations. First, the surface needs to be cleaned, primed, and evened out. After that the chosen epoxy flooring system may be applied.

Vertical surfaces require use of thixotropic epoxy composition in order to minimize running down of the mixture.

When reinforcing or leveling the substrate with additional layers under the main coat, it is also possible to use the fast curing HARDENER MTB.

When making the stairs, the following compositions may be used in below mentioned proportions:

- EPIDIAN® FLOOR G1 ..... 100 parts by weight
  HARDENER U1 ..... 40 parts by weight
- EPIDIAN® FLOOR G2 ..... 100 parts by weight
  HARDENER U1 ..... 40 parts by weight

Occupational Health and Safety During Application of Epoxy Flooring Systems

While hardened epoxy flooring systems are physiologically neutral for the human body, some of the ingredients are unquestionably hazardous before hardening. Therefore during the application of epoxy flooring systems certain precautions need to be taken:

- rooms, in which the ingredients are mixed and poured onto the substrate, need to be well ventilated, especially if they are small,
- the personnel responsible for the application of epoxy flooring systems ought to wear appropriate protective gear such as clothing, shoes, eyewear and gloves.

Exceptional care should be taken while mixing and pouring the flooring compositions. The hardeners are caustic (alkaline) substances, therefore in case of any contact with the skin the exposed area needs to be thoroughly rinsed with water, washed with soapy water, and greased with rich body cream. In case of contact with the resin composition, the exposed area has to be carefully cleaned with acetone, rinsed with water, washed with soapy water, and greased with rich body cream.

In some cases the components of the epoxy composition may cause an allergic reaction. If that happens to be the case, see a doctor immediately.

Exploitation of Epoxy Flooring

Epoxy flooring can be used by pedestrians after hardening, but no earlier than 24 hours after the last coat had been applied if the entire surface is evenly hardened. Full mechanical strength is reached after 7 days and full chemical resistance after 14 days. The first washing of epoxy floor may be carried out once the surface reaches its full chemical resistance (14 days from the application of last layer). Most conventional cleaning products may be used for washing of epoxy floor. Only products with strong oxidizing properties ought to be avoided.

Scrubbing pastes, scouring milks, and similar products are not recommended as continuous use will cause the surface to become dull, matte or even partially damaged.

Storage Conditions and Warranty Period

Individual components of any flooring system should be stored in closed packaging in a dry, cool place. Under the above conditions, the shelf life of all products listed in this catalogue is 12 months.

Comments

The data contained in this catalogue is based on our own research and represents our best knowledge. Our aim is to convey the necessary basic information regarding the applicability of EPIDIAN® products. The user should adapt the given data to actual circumstances and conditions. We cannot accept any liability for losses caused directly or indirectly by the use of our products, as conditions of their application and usage are beyond our control.

It is the user's responsibility to check the safety, quality, and characteristics of the product before its application. This catalogue does not replace the Safety Data Sheet and Hazardous Substance/Mixture Technical Sheet, which are superior documents available upon request.

Tools for Flooring Systems Application

In order to ensure safe and successful application of any epoxy flooring system, appropriate basic tools are essential. They allow for proper components preparation, application of separate layers and finally, the application of a floor that lasts and demonstrates all expected properties.

- shot blasting machine
- industrial vacuum cleaner
- mechanical mixer
- humidity measuring kit
- concrete hardness measuring kit
- deaerating roller
- sweeping brush
- rubber squeegee
- regulated squeegee
- protective gloves
- spike shoes
- protective eyewear
- protective knee pads

Air Temperature °C	Dew Point Temperature in °C Depending on the Relative Humidity											
	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%
30	14.9	16.8	18.4	20.0	21.4	22.7	23.9	25.1	26.2	27.2	28.2	29.1
28	13.1	15.0	16.6	18.1	19.5	20.8	22.0	23.2	24.2	25.2	26.2	27.1
26	11.4	13.2	14.8	16.3	17.6	18.9	20.1	21.2	22.3	23.3	24.2	25.1
24	9.8	11.3	12.9	14.4	15.8	17.0	18.2	19.3	20.3	21.3	22.3	23.1
22	7.8	9.5	11.1	12.5	13.9	15.1	16.3	17.4	18.4	19.4	20.3	21.3
20	6.0	7.7	9.3	10.7	12.0	13.2	14.4	15.4	16.4	17.4	18.3	19.2
18	4.2	5.9	7.4	8.8	10.1	11.3	12.5	13.5	14.5	15.4	16.3	17.2
16	2.4	4.1	5.6	7.0	8.2	9.4	10.5	11.6	12.6	13.5	14.4	15.2
14	0.6	2.3	3.7	5.1	6.4	7.5	8.6	9.8	10.6	11.5	12.4	13.2
12	-1.0	0.4	1.9	3.2	4.5	5.7	6.7	7.7	8.7	9.6	10.4	11.2
10	-2.6	-1.2	0.1	1.4	2.6	3.7	4.8	5.8	6.7	7.6	8.4	9.2

Contact Us

Jan Strzałkowski
Business Development Manager
Jan.Strzalkowski@ciechgroup.com
tel. +48 500 213 965
GREAT BRITAIN | IRELAND | BENELUX
SPAIN | PORTUGAL| CANADA | USA | ISRAEL
UEA | ASIA | AFRICA

Szymon Szpak
Business Development Manager
Szymon.Szpak@ciechgroup.com
tel. +48 609 125 507
CZECH REPUBLIC | SLOVAKIA | HUNGARY
GREECE | TURKEY | CROATIA | SERBIA
MACEDONIA | ROMANIA | BULGARIA

Arletta Wrona
Key Account Manager
Arletta.Wrona@ciechgroup.com
tel. +48 667 770 377
ITALTY | SWITZERLAND | FINLAND
SWEDEN | NORWAY | DENMARK

Rajmund Plawgo
Sales Manager
Rajmund.Plawgo@ciechgroup.com
tel. +49 152 33716750
GERMANY | AUSTRIA

Yuriy Dolgykh
Sales Manager
Yuriy.Dolgykh@ciechgroup.com
tel. +380 95 648 4047
UKRAINE | BELARUS

Denis Soldatov
Sales Manager
Denis.Soldatov@ciechgroup.com
tel. +7 911 758 8307
RUSSIA | BALTIC COUNTRIES

Damian Halasa
Technical Sales Manager
Damian.Halasa@ciechgroup.com
tel. +48 669 600 233
POLAND

Piotr Majder
Technical Sales Manager
Piotr.Majder@ciechgroup.com
tel. +48 667 948 316
POLAND

Marek Jędras
Key Account Manager
Marek.Jedras@ciechgroup.com
tel. +48 667 772 680
POLAND