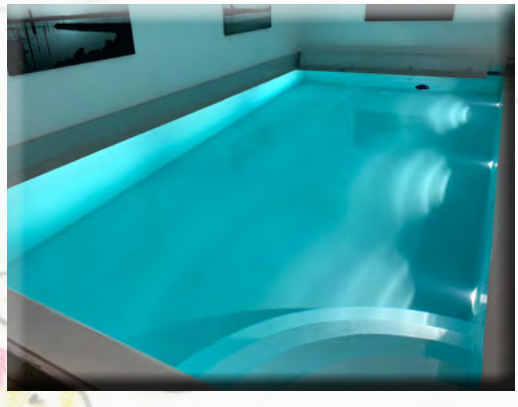
DeinTeich.de

Teich Pool Dach

pond & pool coatings
with glass fibre-reinforced plastic (GRP)



work instruction "step-by-step"

3 layers biaxial glass fibre

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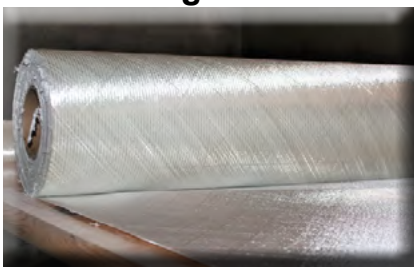
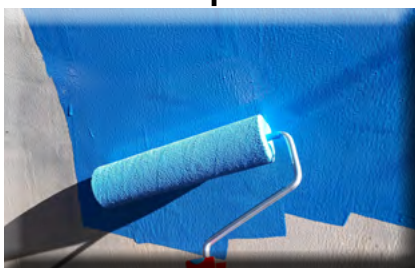
Our biaxial glass fibre in combination with our epoxy resins and polyurethane topcoats offers a high quality alternative to conventional materials for pond and pool coatings.
Below you will find detailed information:

epoxy resin

biaxial glass fibre



PU-topcoat



epoxy resin

Epoxy resins consist of 2 components (resin and hardener). Through the connection of the components, a reaction occurs which results in a cured plastic. Especially in the field of pond and pool construction, the properties prove to be very advantageous:

- ✓ **very good mechanical properties and high chemical resistance**
- ✓ **low water absorption / excellent osmosis protection**
- ✓ **can also be applied in sunlight**
- ✓ **free from solvents**
- ✓ **very good adhesion properties**

... here you will find tips & tricks for processing of epoxy resins - just scan!

glass fibre-reinforced plastic (GRP)

"GRP" stands for "glass fibre-reinforced plastic" -
a composite material made of a plastic matrix (epoxy resin) and glass fibre.

- ✓ **more durable than any conventional film**
- ✓ **wrinkle-free pool design**
- ✓ **problem-free "do it yourself" system solution**
- ✓ **redesign or expansion possible at any time**

PU-topcoat

The 2-component polyurethane topcoat HP-PUR-PLUS was specially developed for permanent water loads in pond and pool construction.
It has a long-lasting colour stability and an excellent fullness of the paint film.

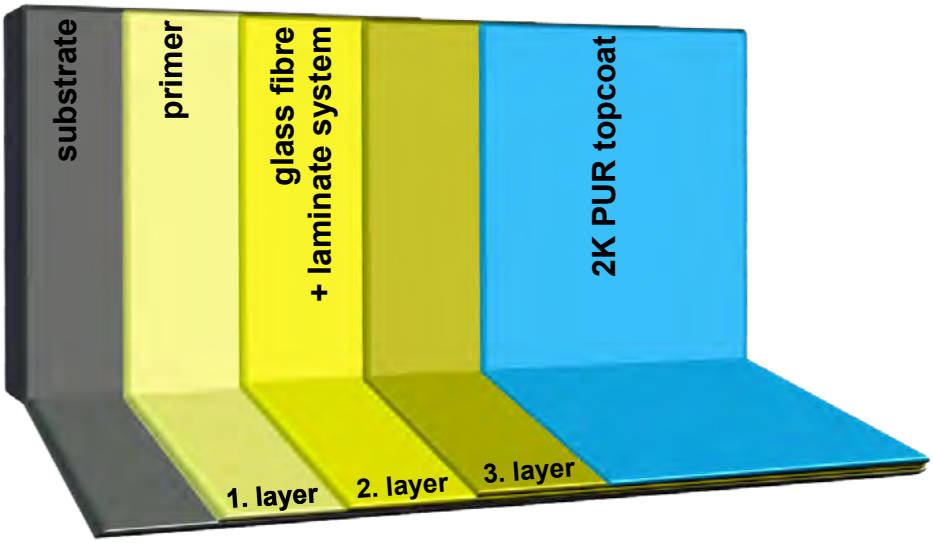
- ✓ **brilliant colours & long-lasting UV protection**
- ✓ **very good resistance**
- ✓ **easy application**
- ✓ **available in almost all RAL colours**

... here you will find further information about the HP-PUR-PLUS - just scan!

coating in layers

Our GRP coatings for pond and pool construction are always applied in several layers.

structure of the individual layers:



coating intervals

	product	ambient temperature (optimum)	substrate	working time **(at 20°C)** / mixing ratio	consumption
primer	epoxy resin HP-E80FS	15-25°C max. 70% air humidity	concrete/screed/ brick **(max. 6% residual moisture)** free from grease & oil, free from loose parts	approx. 35 min* **100**(resin):**60**(hardener)	0,15-0,2 kg/m² (if subsoil is porous, add 10% thinner XB)
waiting time*: max. 24h at 20°C | otherwise grinding and cleaning is necessary					
laminate	epoxy resin HP-E30TLS	15-25°C max. 70% air humidity	primer **processing "wet-in-wet" is possible**	approx. 30 min* **100**(resin):**60**(hardener)	1,4 kg/m²
	biaxial glass fibre HP-B320/635E				3 layers: 900 g/m²
waiting time*: max. 24h at 20°C | otherwise grinding and cleaning is necessary					
topcoat	HP-PUR-PLUS	15-25°C max. 70% air humidity	walk-on laminate **(not older than 24h)**	approx. 3-5h* **100**(resin):**50**(hardener)	0,15-0,2 kg/m² (in 2 coatings)**
	HP-PUR-PLUS -TEXTUR	15-25°C max. 70% air humidity	walk-on laminate **(not older than 24h)**	approx. 6-8h* **100**(resin):**50**(hardener)	0,2-0,25 kg/m² (in 2 coatings)

** higher temperatures shorten pot life and curing!*

*** for white shades: double the amount in 3 - 4 coats*

tool selection

It is particularly important to use the appropriate tool.
The higher the quality of the tool, the easier and more material-saving to work with during coating!

We offer tool sets already assembled for coating with polyurethane top coat!

	article	designation	characteristics	use
	rollers			
	HP-L1015	velour roller, 10cm	low resin absorption	laminating suitable for plug bracket HP-L1030
	HP-L1016	polyamide roller, 10cm	high resin absorption	applying of resin for large surfaces, laminating suitable for plug bracket HP-L1030
	HP-L1017	polyamide roller, 15cm		
	HP-L1022	polyamide roller, 25cm	high stability	applying of resin for large surfaces suitable for plug bracket HP-L1023
	HP-L1032	paint roller, 25cm	lint-free & solvent resistant	paint with PU-topcoat suitable for plug bracket HP-L1023
	HP-L1034	paint roller, 10cm		paint with PU-topcoat suitable for plug bracket HP-L1030
	plug bracket			
	HP-L1030	6mm	reusable	suitable for 10-16cm rollers
	HP-L1023	8mm	reusable	suitable for 18-25cm rollers
	plastic bucket			
	HP-L1050	14L, square	with scale	mixing and applying of the systems
	HP-L1048	10,8L, round	out of PP-nature	
	HP-L1036	8L, square	optionally with insert	
	HP-L1037	12L, square		
	accessories			
	HP-L1051	stirrer	metal stirrer with adapter for drill machine	for a mixture up to 15kg
	HP-L1054	scissor	stainless	cutting glass fibre scrim
	HP-L1002	brush-set	6 brushes incl. brush container	finishing touches, corners, connectors
	HP-L1024	telescope extension	aluminium, telescopic up to 2m	larger coatings of walls and floors
	HP-L1053	nitrile gloves	reusable	suitable for all activities
	diverse	disposable glows		

shaping of the substrate

near-natural, curved geometries:

- after compressing, plaster the hole in the ground with mortar, concrete or screed
- if necessary, install screed mats

straight lines and contours:

- use shuttering blocks or conventional timber formworks
- 90° corners should be avoided; sharp corners should be chamfered by a cove former, otherwise the glass fibre material might peel off in the corners
- you can also build walls (with bricks or shuttering blocks)
- if the substrate is sufficiently smooth, plastering is not necessary over the entire surface.
  (smoothing of joint areas or other uneven spots is sufficient, e.g. with tile adhesive)

condition of the substrate

- must be load-bearing, free of loose parts and free of oil and grease
- optimal: solid, mineral, slightly porous substrates (e.g. masonry, concrete, plaster, screed, wood, or similar)
- We strongly advise against direct coating on the ground!
- for larger projects with concrete substrates we recommend the use of an electronic concrete mixer, for smaller projects mixing in a wheelbarrow is often sufficient

"The smoother and more careful the work on the substrate, the easier & the more resin-saving the further coating!"

sun and rain protection

- for large and long lasting projects we advise to construct a tent roof (preferably with standing height)

TIPP **Use white or light-coloured cover to avoid heat accumulation and the formation of condensation**

- for smaller projects and constant weather, keep a cover on hand for rain protection

- direct rain, morning dew, fog and other indirect early water loads should be avoided
  Generally important is sufficient air circulation!

primer

The primer protects the epoxy laminate against moisture in the ground and improves the adhesion between substrate and laminate. Concreted and masonry substrates must dry for at least four-six weeks before coating. (Drying time varies depending on concrete type and ambient temperature).
The residual moisture in the concrete must be below 6%!

what is needed:

- ✓ **epoxy primer system HP-E80FS**
- ✓ **laminating roller HP-L1022 / L1016 / L1017**
- ✓ **telescope extension HP-L1024**
- ✓ **acetone HP-AC**
- ✓ **thinner HP-XB**
- ✓ **bucket HP-L1048 / HP-1036 / L1037 (+inserts)**
- ✓ **plug bracket HP-L1030 / L1023**
- ✓ **optional: stirrer HP-L1051**

technical data sheet
HP-E80FS

STEP 1.1) cleaning substrate

- remove loose parts and dust residues from the entire substrate and clean with an industrial vacuum cleaner

STEP 1.2) dosing single components

- empty resin and hardener components for the required quantity into the bucket

procedure for partial quantities:

- partial quantities must be accurately weighed using a digital scale
- dose resin and hardener components for the required quantity observing the mixing ratio

to be considered for the epoxy primer system HP-E80FS:

- **mixing ratio: 100 (resin) : 60 (hardener)**
- **working time: approx. 35min**
- **working temperature: 15-25°C**
- **substrate-temperature: mind. 15°C**
- **residual moisture: <6%**
- **air humidity: max. 70%**

STEP 1.3) stirring the mixture

TIPP **use the stirrer to drill the mixing (HP-L1051)**

- stir the components thoroughly and intensively including the outer rim and the bottom
  (max. 300 revolutions per minute, to avoid blistering)

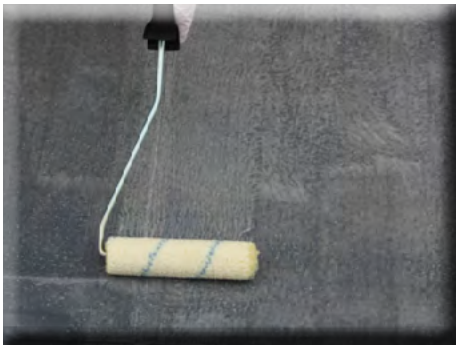
- add thinner HP-XB (approx. 10% of the total quantity) and mix again
- dilution with HP-XB makes the mixture easier to apply and penetrates the pores better

STEP 1.4) repotting the mixture

- pour the mixture in a separate bucket and mix well again
- by repotting the mixture, it is ensured that the components are mixed homogeneously

STEP 1.5) applying the mixture

- spread the mixed laminate resin evenly on the surface using a laminate roller
- for a clean transition, the roller should always be applied to the freshly applied surface



- consumption is approx. 0,15-0,2 kg/m²

- <u>waiting time until the next step (the laminate):</u>
  minimum: approx. 8h at 20°C (primer should be slightly dried, at best "sticky")
  maximum: approx. 24h at 20°

laminate

As soon as the primer has been applied and slightly dried, the laminate must be applied within 24h (at 20°C).
If longer, grinding and cleaning with acetone is necessary!

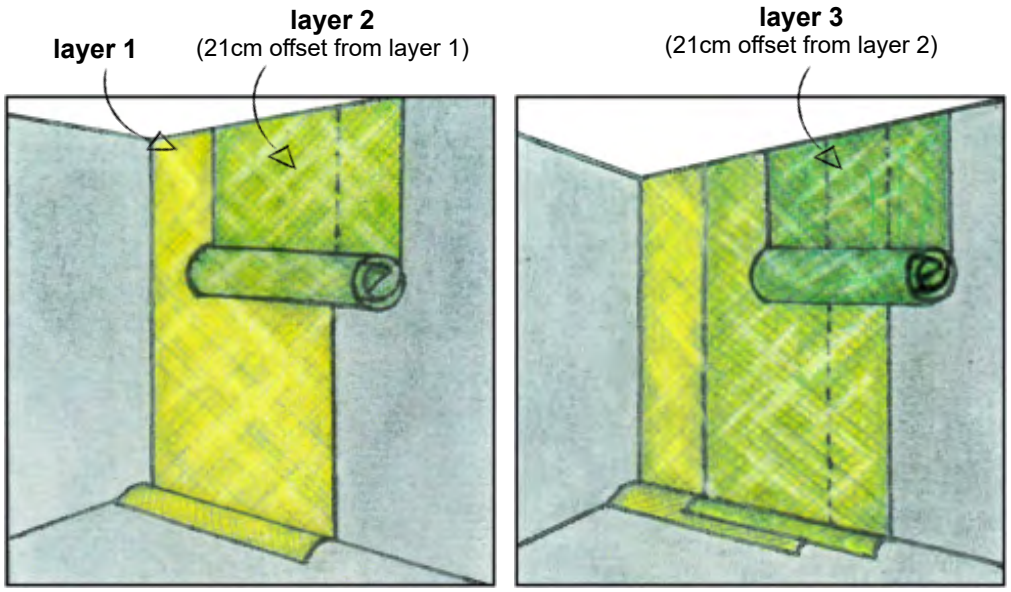
what is needed:

- ✓ **epoxy laminate system HP-E30TLS**
- ✓ **biaxial glass fibre HP-B320/635E**
- ✓ **laminating roller HP-L1022 / L1016 / L1017**
- ✓ **plug bracket HP-L1030 / L1023**
- ✓ **telescope extension HP-L1024**
- ✓ **bucket HP-L1048 / HP-1036 / L1037 (+inserts)**
- ✓ **stirrer HP-L1051**
- ✓ **scissor HP-L1054**

technical data sheet
HP-E30TLS

layer structure

"...like wallpapering, but in three layers!"



STEP 2.1) prepairing the biaxial glass fibre

- cut biaxial glass fibre to size using suitable scissor (z.B. HP-L1054)
  (we recommend setting up a cutting table as for wallpapering)
- to accelerate the laminating process, several sheets of the biaxial glass fibre should be prepared
  (cut to length and roll up)

TIPP
work with 3 people:
prs. 1: mixing resin
prs. 2+3: cutting and applying glass fibre scrim

STEP 2.2) work in connectors

The connectors should be sanded and degreased using acetone. This procedure improves the adhesion to the GRP. It is often useful to laminate these connectors at first before laminating the larger areas.
The exact procedure for mixing the required laminating resin can be found on p. 12.

connectors (sticking out): overflows, columns / pillars, railings, ...

cutting layers

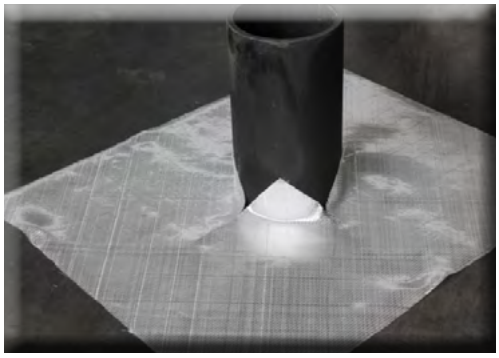
- the first layer of biaxial glass fibre should be about 30cm wider than the respective connector

- cut a cross in the middle of the piece
- the cutting length should correspond to the diameter of the connector

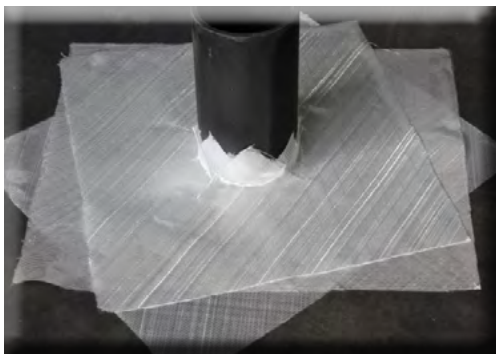
putting over trial

We recommend to put the already cut layers over before laminating in order to be able to make adjustments if necessary.

- put the first layer biaxial glass fibre over the connector



- the following layer should be 5-10cm smaller
- thus, you create the stepped structure
- then cut the following layers according to this scheme
- make sure, that the cuttings of the layers lie offset to each other
- afterwards this layer can also be put over the connector (here: the pipe) as a way of trial



This results in a step-shaped structure!

laminating

- when all the layers are cut, they can be impregnated layer by layer
- carefully vent after the respective application

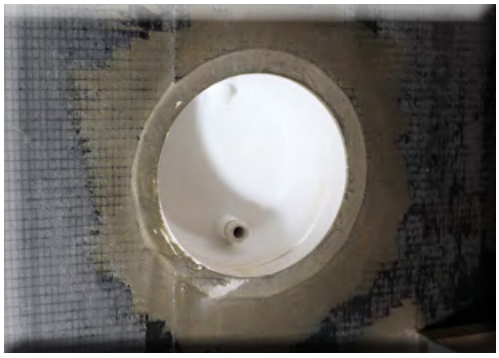
wrapping with glass fibre strips

- the pulled-up triangles can now be wrapped by a strip of glass fibre and then laminated
- for this purpose either cut from the supplied biaxial glass fibre HP-B320/635E approx.10cm wide strips cut or optionally order the glass fibre tape HP-B320E / HP-B420E

connectors (embedded): floor drains, underwater spotlights, nozzles, ...

sanding and degreasing

- ideally you use components, that also consist of GRP or ABS plastics
- these should be sanded and degreased before laminating them



laminating

- cut a hole, corresponding to the connector diameter, in the biaxial glass fibre
- coat the surface with laminating resin
- place the biaxial glass fibre around the connector

- thoroughly impregnate the biaxial glass fibre with laminating resin
- seal elements made of other plastics/metals additionally with sealant/flange sealant (e.g. Innotec Adheseal, Sikaflex)
- only apply sealant after the laminate has cured, not wet-in-wet!

STEP 2.3) dosing single components

- the HP-E30TLS is delivered in the correct ratio of component A and B
- thus, both components A and B can be fully emptied into a bucket, (HP-L1048) in compliance with the safety instructions

to be considered for the epoxy laminate system HP-E30TLS:

- **mixing ratio: 100 (resin) : 60 (hardener)**
- **working time: approx. 30min**
- **working temperature: 15-25°C**
- **substrate temperature: min. 15°C**
- **air humidity: max. 70%**
- **processing: wet-in-wet**

STEP 2.4) stirring the mixture

TIPP **use the stirrer to drill the mixing (HP-L1051)**

- stir the components thoroughly and intensively including the outer rim and the bottom
  (max. 300 revolutions per minute, to avoid blistering)

- place the bucket insert in the bucket (HP-L1036 / L1037)

- pour the mixture in a separate bucket (HP-L1036 / L1037) and mix well again
- by repotting the mixture, it is ensured that the components are mixed homogeneously

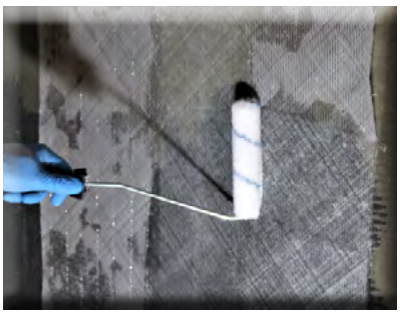
STEP 2.5) applying the mixture

- as soon as the primer is gelled, apply the mixed laminate resin evenly on the surface using a laminating roller
  (the surface should be approximately as wide as the cutting)

STEP 2.6) applying biaxial glass fibre

- then apply the biaxial glass fibre section by section on the liquid laminating resin
- make sure, that there are no creases left
- for the connection to the floor coating apply the layer a few cm into the floor area
- before impregnating fibres completely: cut fabrics in floor or corner areas and let them overlap again (in this way you avoid unevenness or tension in the fabric)

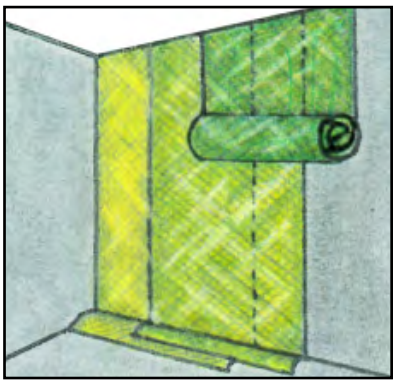
STEP 2.7) impregnating biaxial glass fibre

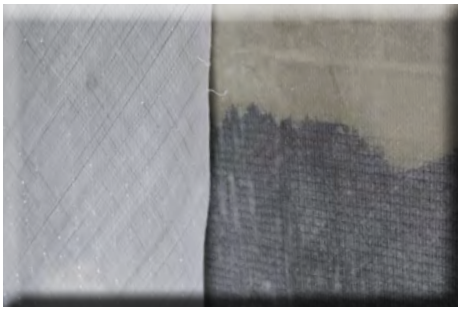


- impregnate the biaxial glass fibre with laminating resin quickly from the inside out

Where wetted sufficiently, the material gets quickly more transparent!

STEP 2.8) applying further layers of biaxial glass fibre





- apply following layers biaxial glass fibre wet-in-wet and offset by one third from the previous position

- for the connection to the floor coating apply all layers of biaxial glass fibre a few cm into the floor area
- <u>waiting time until the next step (the topcoat):</u>
  minimum: as soon as the laminate is walkable
  maximum: approx. 24h at 20°

3) topcoat HP-PUR-PLUS

If the 24h waiting time (at 20°C) has been exceeded, the laminate must first be grinded and cleaned with acetone!

topcoat

The topcoat is applied as a final layer on the laminate and ensures that your project becomes a colourful eye-catcher! In addition to the colouring, it protects the laminate from external influences and stresses and provides UV protection.
Our range includes a polyurethane-based topcoat, and a texture can also be applied for non-slip surfaces.

topcoat with polyurethane coat HP-PUR-PLUS (HP-PP)

Our PU topcoat HP-PP is available in almost all RAL colours and offers long-lasting colour stability due to its high UV protection. It also has very good resistance to weathering and continuous water loads.

what is needed:

- ✓ **polyurethane-topcoat HP-PP**
- ✓ **polyamide roller HP-L1032 / L1034**
- ✓ **plug bracket HP-L1030 / L1023**
- ✓ **telescope extension HP-L1024**
- ✓ **bucket HP-L1048 / HP-1036 / L1037 (+inserts)**
- ✓ **stirror HP-L1051**
- ✓ **optional: brush**

technical data sheet
HP-PP

preparation (optional)

For the topcoat with PU coat, you can optionally apply an additional layer of HP-E30TLS laminating resin to the laminate before applying the HP-PP (supplied in the set). This results in a smoother surface in the end result.

to be considered for the PU-topcoat HP-PP

- **mixing ratio: 100 (Harz) : 50 (Härter)**
- **working time: ca. 3-5h**
- **working temperature: 15-25°C**
- **substrate temperature: mind. 15°C**
- **air humidity: max. 70%**

STEP 3.1) dosing single components

- empty the resin and hardener components of the HP-PP into the bucket for the required quantity

procedure for subsets:

- partial quantities must be accurately weighed with a digital scale
- dose the resin and hardener components for the required quantity under consideration of the mixing ratio

STEP 3.2) mixing and repotting the mixture

TIPP **use the stirrer to drill the mixing (HP-L1051)**

- stir the components thoroughly and intensively including the outer rim and the bottom (max. 300 revolutions per minute, to avoid blistering)

- pour the mixture in a separate bucket and mix well again
- by repotting the mixture, it is ensured that the components are mixed homogeneously

STEP 3.3) applying topcoat

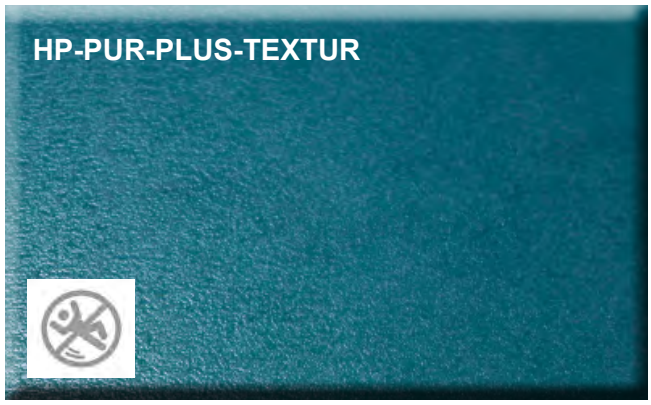
- apply mixture with roller / brush as soon as the surface is walkable
  <u>difficult areas:</u> (e.g.: corners / connections): application with brush
  <u>large areas:</u> application with roller (mandatory HP-L1032 / L1034!)

- apply second coat within 24h (at 20°C)
  (same procedure as for the first coat)
  For white shades, a third and possibly fourth coat is necessary due to the opacity; these are applied using the same procedure.
- if the waiting time has been exceeded:
  first coat must be grinded and cleaned with acetone

3) topcoat HP-PUR-PLUS-TEXTUR

optional: non-slip layer with texture

Our HP-PP-TEXTUR is also available in almost all RAL colour shades; each matched to the PU top coat HP-PP. The texture forms a structured and non-slip surface and is therefore particularly suitable well for stair and floor areas in pool and pond construction.



what is needed:

- ✓ **polyurethane-coat HP-PP-TEXTUR**
- ✓ **polyamide roller HP-L1016 / L1017 / L1022**
- ✓ **plug bracket HP-L1030 / L1023**
- ✓ **telescope extension HP-L1024**
- ✓ **bucket HP-L1048 / HP-1036 / L1037 (+inserts)**
- ✓ **stirrer HP-L1051**
- ✓ **optional: brush**

technical data sheet
HP-PP-TEXTUR

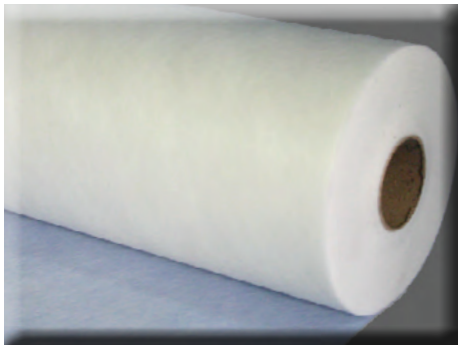
procedure

After the two coats of HP-PP have been applied (see p. 14-15), one coat of HP-PP-TEXTUR follows.
For optimum adhesion without intermediate grinding, the previous layer of HP-PP should still be slightly tacky.
If the coating is applied later, the surface must be sanded, otherwise the adhesion may be too low.
When applying, please note that other rollers (see above) must be used than for HP-PP!

to be considered for the PU-topcoat HP-PP-TEXTUR

- **mixing ratio: 100 (Harz) : 50 (Härter)**
- **working time: ca. 6-8h**
- **working temperature: 15-25°C**
- **substrate temperature: mind. 15°C**
- **air humidity: max. 70%**

glass fleece for smooth surfaces



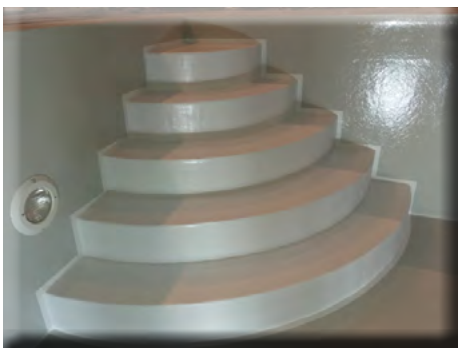
- for particularly smooth surfaces and high chemical protection: C-glass fleece (HP-VJ50C)

- apply C-glass fleece as additional last laminating layer (according to STEP 2.8, see p.13)

steps in the basin

- build steps in desired form and plaster with tile adhesive
- mix and apply epoxy primer system HP-E80FS according to specifications (see p.8)

- apply epoxy laminate system HP-E30TLS and glass fabric according specifications (see p.12)
- optionally apply a layer of HP-VJ50C glass fleece for even steps



- for non-slip surfaces apply HP-PP-TEXTUR as topcoat

nature stone walls for special optical effects

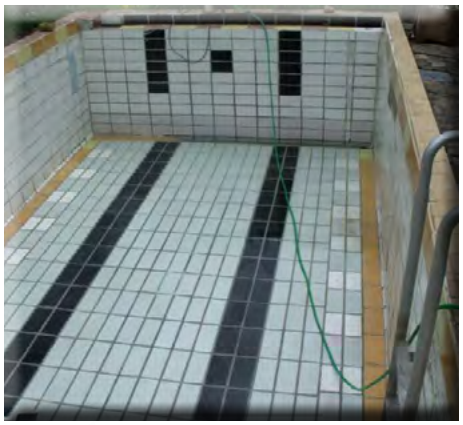
- at first, laminate the entire basin
- after curing:
  sand the areas where you will build the stone wall up
- by building the wall on the laminate, you avoid leaks
- the grout of the nature stones must cure according to the instructions beforehand, otherwise components such as lime might flush out
  residual mositure: <6%

- to minimise cleaning time in the future:
  nature stone walls can be sealed with the epoxy resin HP-E80FS
- to improve the light and UV-rays stability:
  apply HP-E30TDS transparent inclusive approx. 3% UV stabilizer HP-BEL91

renovation

Besides building completely new pools, you can also renovate existing pools.
The basis of the renovation are existing GRP pools, already sealed concrete or steel pools, where only a coloured surface refreshment should be carried out.

Due to the variety of subsoils and individual conditions, we recommend you a prior consultation on the phone.



- before -

- after -

Do I have to pay attention to certain occupational safety during processing?

- do not allow children to handle
- prevent inhalation of fumes and contact with bare skin
- wear appropriate protective gloves and goggles
- if ingested do not eat, drink or smoke
- please refer to the safety instructions given in the safety data sheets

Where can I find more detailed information about the products?

- information about our products can be found in our online shop www.deinteich.de
- if required, we can provide you with the technical data sheets as well as safety data sheets for the individual materials at your disposal

What is the best way to store the products?

- storage of epoxy resins before processing is best in a cool and dry place (e.g. cellar at approx. 15°C)
- shelf-life at least 12 months with optimal storage

What do I have to consider when disposing the products?

- do not dispose through the sewerage system, on areas of open water, or in the soil
- non-hardened remains of the product should be disposed of as hazardous waste
- the hardened product waste should be treated as building rubbish or household rubbish

How do I clean the tools?

- unhardened product remains can be removed from tools by means of acetone or thinner XB
- tools should be given a good airing after being cleaned with these solvents
- hardened remains can only be removed by mechanical means such as sanding

Is the coating dangerous for my fish?

- if our processing instructions are followed, the cured material does not release any substances into the water and is therefore not critical for humans or animals

Is chlorine pollution or the addition of salt problematic?

- if the dosage instructions for the chemicals used for swimming pool hygiene are observed, it is not a problem
- if the dosage is too high, the surface or the colour may be affected or changed

How long do I have to wait before I can add water?

- the entire laminate structure (incl. topcoat) must cure for at least 7 days at 20° before the first exposure to water
- higher temperatures over a longer period of time can shorten this time
- a reliable statement on the time reduction cannot be given due to the wide variety of conditions

... you will find further questions and answers in our FAQ`s in the online shop:

You still have questions or need support for your project?
Please contact us...

...by phone: 05905/94541-10

...by mail: info@deinteich.de

...or via our request form:

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