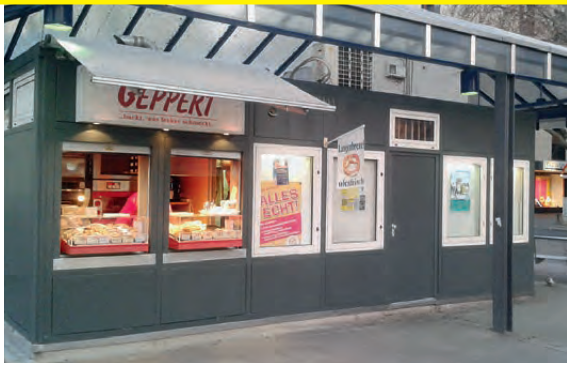
PERMA-Guard

Graffiti-Protection-System



Technical Data Sheet

with Quick-Start-Guide

Graffiti-Guard
Anti-Graffiti-System

Quick-Start-Guide

Brief Instructions for PERMA-Guard – Graffiti-Protection-System

① Temperature

- The air and subsurface temperature **must be between + 10 °C and + 35 °C** during the application and drying process

② Weather

- Do **not** use in rain or high humidity (> 85 %)
- **Avoid strong sunlight**

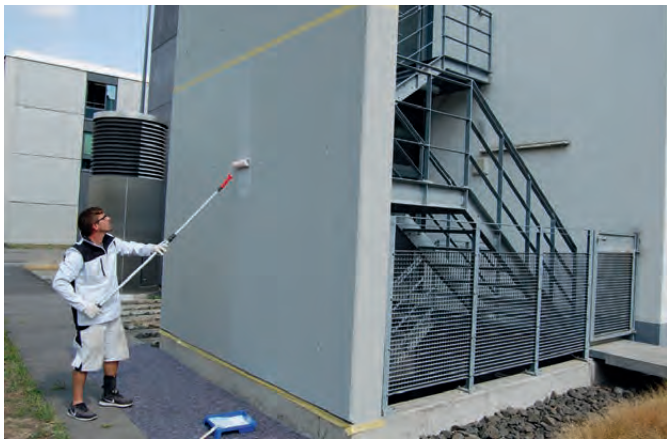
③ Subsurface

- **The surface must be clean, dry, stable and free of grease!**
- **Subsurface moisture** may not exceed max. 5 %!
- **Primer XT recommended?** Please refer to the table “Coating Structure” on page 8

④ Mixing / Blending

- **2 : 1 auf Volume basis** (Coating : Hardener)
- Add Component B (Hardener) to Component A (Coating) and stir / mix well with a stiring stick or something similar for **at least 2 minutes**
- 5-kg-containers must be mixed mechanically (e.g. with an electric screwdriver / power drill and paint whisk)
- **Processing time** after mixing: approx. 45 minutes

You can find the processing video here: https://youtu.be/GMP7gCeu9Yk

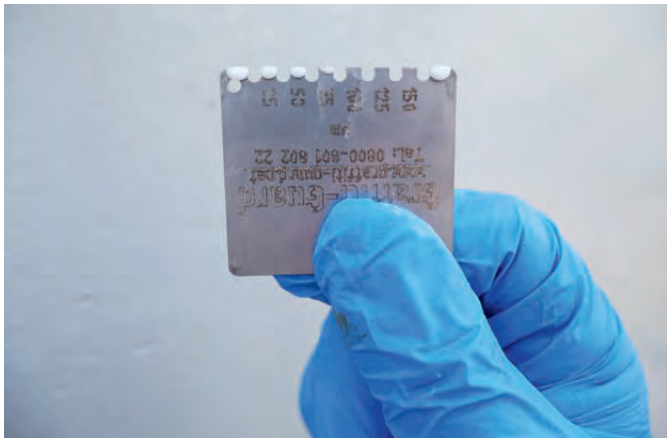


⑤ Application with Roller

- Only use **microfiber rollers** – stacking height: 4 – 6 mm 2 layers! Apply – **Per layer** a wet – layer – thickness of **approx. 50 µ (micron) / max. 75 µ (micron)**
- **Drying time between layers: aprox.** 4 – 6 hours at 25 °C
- Stir the Ultramatt/Matt repeatedly during the processing to avoid a gloss build-up

⑥ Application with Spray Method

- Spray method: HVLP / airless / spray gun
- **Only 1 layer!** Wet-on-wet-layer of thickness of **approx. 100 µ (micron). / max. 120 µ (micron)**
- Dry after approx. 4 – 6 hours at 25 °C
- In the spraying proccess, the solution can be diluted with max. 5 – 7 % demineralized water



⑦ 2. Layer Thickness Measurement

- Order the layer thickness measuring comb here: **www.graffiti-guard.net/messkamm**
- Layer thickness note – more on page 12

⑧ Protection against Driving Rain

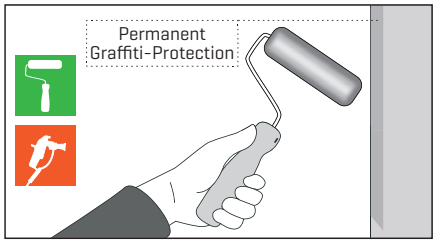
- After the top coat has dried, apply a water repellent/ hydrophobization (e.g. SEMI-Guard) to the transition lines between the facade paint and the surface which has been protected
- This reduces rain / moisture from running behind the protective layer
- More on page 13

Layer thickness measurements:
https://www.youtube.com/watch?v=eYxNxHkdyzM

Product Description

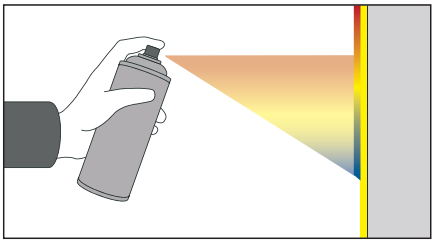
PERMA-Guard is a powerful permanent anti-graffiti protection system. It is a water based 2 Component-PU-coating (polyurethane). The graffiti protective layer enables graffiti to be removed up to 100 times without renewing the protective layer and thus offers high-quality and permanent protection against graffiti. The material does not turn yellow and is UV-resistant. It is available in clear, white and many RAL and NCS tones as well as in the limit grades glossy, satin matt, matt and ultra matt. **PERMA-Guard** is listed in the directory of tested anti-graffiti systems (RAL).

Functionality

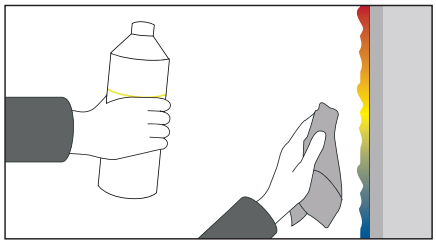


① **Permanent Graffiti-Protection is** applied to the subsurface.

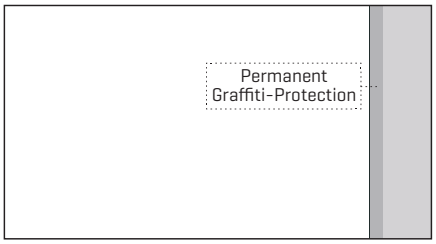
② **Medium diffusion** with Permanent Graffiti-Protection applied.



③ **Paint / Graffiti attack** on Permanent Graffiti-Protection. Graffiti-Paint is held onto the surface. No deep penetration of the color into the substrate.



④ Graffiti is easily removed with **Graffiti-Remover** and a rag. The protective layer is not damaged.



⑤ Permanent Graffiti-Protection does not have to be renewed. Over 100 cleanings are possible.

Application areas

Mineral Substrates (with / without paint):
- Plaster, rough plaster, colored stone plaster
- Facade paints, varnishes
- Powder coating
- Wood, metal, all plastics, tarpaulins, banners
- Tiles, bricks, painted clinker and bricks
- Concrete, exposed concrete
- Painted sand-lime brick
- Fiber cement panels

Natural stone substrates (with paint):
- Sandstone
- Marble / Granite
- Travertine
- Other Natural stones

There is an adhesive primer for some substrates (PERMA-Primer XT) which is necessary to increase the substrate adhesion or to reduce the darkening of the substrate.

Product Features

- Over 130 cleanings possible without renewing the protective layer
- Eco-friendly and easy Graffiti-Removal
- Water-based 2C-PU-Graffiti-Protection-Coating
- Protects against salt, dirt, moss and mold
- Graffiti-Protective-Varnish without harmful or dangerous ingredients – can also be applied in indoor areas
- Available in transparent and many RAL and NCS colors
- Hardly any visible change of the surface
- Available in four degrees of gloss: ultramatt, matt, satin und high gloss
- Reduces the adhesion of posters and stickers
- Can be used on almost any surface
- Functionality of the protective varnish for up to 10 years.

Approvals / Tests

- PERMA-Guard is listed in the Directory of Tested Anti-Graffiti Systems – certified by RAL 841/2 (Gütegemeinschaft Anti-Graffiti)
- Tested according to DIN EN ISO 7783-2: Water Vapor Permeable according to class 2 (Medium Vapor Permeable)
- Tested and certified in Building Material class B1 (Flame Retardant) according to DIN 4102-1

Hazard Warnings

Security Data

See safety data sheet. Download at: **www.graffiti-guard.net**

Legal Notices

The information and data in this technical brochure are based on our practical experience and knowledge.
Due to different prerequisites in practice, general liability is excluded.

Individual testing in regards to suitability and the usage should be carried out by the user. With the publication of a new technical data sheet, previous editions lose their validity.

Delivery Form

Container

Article Description	Characteristic	Article-Nr.	Container
Perma-Guard	clear – Ultramatt	GS-009-01	1 kg
Perma-Guard	clear – Ultramatt	GS-009-05	5 kg
Perma-Guard	clear – Matt	GS-010-01	1 kg
Perma-Guard	clear – Matt	GS-010-05	5 kg
Perma-Guard	clear – Satin	GS-011-01	1 kg
Perma-Guard	clear – Satin	GS-011-05	5 kg
Perma-Guard	clear – High gloss	GS-012-01	1 kg
Perma-Guard	clear – High gloss	GS-012-05	5 kg

RAL- and NCS-Shades

Our Permanent Graffiti-Protection PERMA-Guard can be mixed in almost all RAL and NCS colors.
Graffiti-Protection can thus be integrated into painting and varnishing work. In this way, a colored background design is possible, which also provides permanent and effective protection against graffiti.

RAL-/NCS- colors can be ordered seperately. For production reasons, when ordering RAL-/NCS-colors, a minimum order quantity of 6 x 1 liter or 1 x 5 liter is specified.

Application Examples for Graffiti Protection in RAL Colors

Facade Design

Traffic Sign Systems

Distribution Boxes

Technical Data			
Gloss level	Glossy	> 85	Degree of gloss at 60°-angle
	Semi-gloss	40 – 50	Degree of gloss at 60°-angle
	Matt	15 – 20	Degree of gloss at 60°-angle
	Ultramatt	< 5	Degree of gloss at 60°-angle
Shade	Transparent (clear), RAL-Colors, NCS-Colors		
Consumption	The consumption depends on the absorbency and structure of the substrate The average consumption is around 150-200ml/m² (in total)		
Material basis	Water-based – 2 Component-PU-Coating (Polyurethane)		
Processing time / drip time	Approx. 45 Minutes at 20 °C		
pH value	7,5 – 8,5		
Dilution	When applying with the roller: max. 5 % with demineralized water When applying by spraying: max. 7 % with demineralized water		
Density	1,35 – 1,40 g/cm³ (20 °C)		
Water hazard class	Class: 1 (slightly hazardous to water)		
Mixing ratio	Component A (Coating) : Component B (Hardener) = 2 : 1 auf volume basis (ml)		
Flash point	> 100 °C		
VOC	< 140 g/l		
Drying times	Can be painted over (2nd layer) after approx. 6 – 8 hours (20 °C) Complete hardening after 7 days		
Diffusibility	DIN EN ISO 7783-2: Class 2 – medium open to vapour diffusion		
Shelf life	In well-sealed, unopened packaging, shelf life is 12 months Store containers in a cool, dry place and protect from frost		
Reversibility / revision	Difficult to remove / easy to rework		
Processing temperature	Lowest application and substrate temperature: +10 °C Highest application and substrate temperature: +35 °C		
Processing methods	Roller HVLP / Airless / Spray Gun		
Disposal	Only empty containers can be recycled. Allow liquid material residues to harden and dispose of as construction and demolition waste or as municipal waste / household waste		
Fire protection class	Flame retardant – certified according to B1 according to DIN 4102-1		

Note

In the Graffiti-Scene, additives (acids, very strong solvents and extra pigments) have recently been added to some of the inks, which can also soften the graffiti protection for a short time. However large shadows can be removed by bleaching.

This problem only occurs with markers and inks, as these products could have been changed.
This problem does not occur with any type of paint spray. Paint sprays can generally be removed quickly and without shadows.

Coating Structure

Subsurface		Recommended Layer Structure		Note
		PERMA-Primer (XT) Primer for PERMA-Guard	PERMA-Guard permanent 2C-PU-WB	
Color/facade paint		+	+	PERMA-Primer XT not required if paint is acrylic-based
Lacquers/spray lacquers		+	+	PERMA-Primer XT not required if paint is acrylic-based
Plaster	uncoated	+	+	
	coated	+	+	PERMA-Primer XT not required if paint is acrylic-based
ETICS	uncoated	+	+	
	coated	+	+	PERMA-Primer XT not required if paint is acrylic-based
Fiber cement panels/ facade panels	uncoated	–	–	With factory hydrophobic treatment Recommended: Graffiti-Protection SEMI-Guard
	coated	+	+	Without factory hydrophobic coating
Concrete/exposed concrete	uncoated	+ [1]	+ [1]	[1] Indoor areas
	coated	+	+	
Sand-lime brick	uncoated	–	–	Recommended: Graffiti-Protection SEMI-Guard
	coated	+	+	
Natural stones (Sandstone, travertine ...)	uncoated	–	–	Recommended: Graffiti-Protection SEMI-Guard
	coated	+	+	
Wood	uncoated	+	+	Without hydrophobic-treatment
	coated	+	+	
Plastics	uncoated	+	+	
	coated	+	+	
Metal	uncoated	+	+	
	coated	+	+	
Asphalt/tar (streets)	uncoated	–	–	Recommended: Graffiti-Protection SEMI-Guard
Tiles	uncoated	–	–	Recommended: Graffiti-Protection SEMI-Guard
Glass	uncoated	–	–	
Clinker	uncoated	–	–	Recommended: Graffiti-Protection SEMI-Guard
Ksynthetic resin/colored stone plaster	uncoated	+	+	
Masonry/exposed masonry	uncoated	–	–	Recommended: Graffiti-Protection SEMI-Guard
Plexiglas/PMMA/acrylic glass	uncoated	+	+	
Exposed aggregated concrete	uncoated	–	–	Recommended: Graffiti-Protection SEMI-Guard
Advertising tarpaulins /tarpaulins/ PVC-banner	uncoated	–	+	
Bricks	uncoated	–	–	Recommended: Graffiti-Protection SEMI-Guard
Powder coating	coated	+	+	Possible without PERMA-Primer if necessary

uncoated = without paint or varnish coating
coated = with paint or lacquer coating

We cannot include all substrates used in practice and their processing in this data sheet. If your subsurface is not listed here, we recommend that you consult our technicians or create a test area. We would be happy to advise you or create project-related samples for you.

CAUTION! PERMA-Guard cannot be applied to facade paints a with lotus effect or strong hydrophobic properties, as well as facades that have been subsequently impregnated.

Processing Instructions – Perma-PRIMER XT

Perma-PRIMER XT is a single-layer primer which is used to improve the adhesion of PERMA-Guard and to reduce darkening on absorbent substrates. **Perma-PRIMER XT** can be used on porous and absorbent surfaces as well as smooth and sensitive surfaces such as: PVC, plastics, metals, old facade lacquer/paints and wood.

Application Areas

Mineral Substrates (with/without paint)

- Plaster, rough plaster
- Facade paint (if not acrylic based)
- Bricks, Clinker (with paint)
- Concrete (exposed concrete)
- Fiber cement panels (without hydrophobic treatment)
- Synthetic resin and colored stone plaster
- Lacquer (if not acrylic based)
- Plastics, plexiglass / PMMA / acrylic glass
- Metal
- Wood

▸ Please note the table "Coating Structure"

Features

- Excellent adhesion to almost all surfaces
- Odorless
- Barely visable changes to the surface
- 1 component primer / adhesive primer
- Suitable for a wide range of sensitive substrates
- Can be used indoors and outdoors

Technical Data

Color	Milky – transparent, clear after drying
Consumption	Consumption is dependent on the porosity of the subsurface approx. 10 m²/L
Drying	Dust dry after approx. 30 minutes, can be painted over after 3 – 4 hours
Dilution	Do not dilute
Density	Approx. 1.03 g/cm³
Gloss level	Silky gloss

Processing Instructions

Weather

The air and substrate temperature **must** be above **10 °C and under 30 °C**. Do not use in rain or high humidity (> 85 %).

Subsurface

- The substrate must be stable, dry, clean and free of any seperating substances (oil, grease, wax)
- Do not use on fresh concrete (pH value < 8), plaster or facade paints.

Processing

- Stir well before use. Use ony suitable rollers (e.g. microfiber)!
- DO NOT use foam / foam core rollers for this job!
- Depending on the absorbeny of the substrate, a thin layer of Perma-PRIMER XT should be applied
- Wet layer thickness of at least 40µ (micron) = Dry layer thickness min. 20µ (micron)

Article-Description	Characteristics	Article-Nr.	Container
Perma-PRIMER XT	clear	GS-040-01	0,75 L
Perma-PRIMER XT	clear	GS-040-02	2,5 L

You can find more information about the Perma-PRIMER XT here:
www.graffiti-guard.net

Processing Instructions – PERMA-Guard

Processing Conditions

- **Areas of application:** can be used outside and inside (in well ventilated rooms)
- **Do not apply in rain or high humidity** (> 85 %)
- **The air and substrate temperature** must be between 10 °C and 35 °C during the application and drying process.
- Avoid direct sunlight

Substrate Testing /-Preparation

The substrate must be clean, dry, stable, free of grease and free of seperating substances (e.g. oil, grease, wax ...)!

Substrate moisture may not exceed 5 %!
The base paint must be dry! Do not apply to fresh concrete or fresh plaster! Do not process below the dew point.

Primer XT recommended? Please refer to the table "Coating Structure" on page 8. If you do not know the facade paint / lacquer or if it is NOT an acrylic-based facade paint, we recommend that you apply PERMA-Primer XT as a primer.

Graffiti protection cannot be applied to surfaces with a lotus effect or strongly hydrophobic properties, as well surfaces which have been impregnated. This also applies to oiled, waxed or impregnated wood. For alternatives, you can contact our technical service.

For substrates with rising moisture (e.g. protected monumental facades, masonry ...) or if moisture can penetrate from the back (e.g. L-stones ...), contact our technical service.

Service-Hotline: 0800 – 801 802 22

When processing large areas, we always recommend creating a test area to determine the substrate adhesion, degree of gloss and any change in color.

Preparation of the Material

Mixing

- Pour Component B (Hardener) into Component A (Coating) and mix well, using a wide spatula, for at least 2 minutes
- Transfer the mixed material into a clean container and apply immediately
- **CAUTION!** 5-kg-Containers must be mixed mechanically with a power drill and a paint wisk
- Always mix only as much material as you can use within the specified pot life (approx. 45 minutes)!
- It is advisable to stir the mixed material during the processing / application
- Danger: Variation in the degree of gloss! The material is milky in the liquid state and transparent after drying
- **CAUTION!** Do not store mixed materials in closed containers
- Only use color shades / degrees of gloss from the same production (batch) on joined surfaces, or mix the two different batches with one another to create one shade
- In the case of RAL-/NCS-Colors, always check the color before processing

Mixing ratio

The mixing ratio is 2 : 1 (Coating : Hardener)
on a volume basis
Example: 200 ml Coating (A) : 100 ml Hardener (B)

Processing with a Roller

- When applying with a roller, the solution can be diluted with a maximum of 5 % demineralized water
- Add the demineralized water only after mixing the Component B (Hardener) and Component A (Coating)
- Only use suitable rollers (e.g. microfibre, pile height: 4 – 6 mm)! DO NOT use foam / foam core rollers
- Change the roller after the processing time has ended
- The processing time (drip time) is approx. 45 minutes at 20 °C. After the time has elapsed or if the viscosity increases, the material can no longer be used
- The Anti-Graffiti-Coating **must** be applied in 2 layers using a Cross-Coat technique
- CAUTION! Apply the second layer only after the first layer has dried
- Drying time: 4 – 6 hours at 25 °C
- With heavily structured substrates (e.g. grain size over 3 mm) it is advised to apply a thin 3rd layer of PERMA-Guard or to apply a first (1) layer of Perma-PRIMER XT
- In order to guarantee functionality, the second layer **must** be applied within 2 days – after the first layer has dried!

Layer Thickness for Roller Application

1. Layer: Wet layer thickness of at least 50 µ (microns)	= Dry layer thickness at least 25 µ (microns)
2. Layer: Wet layer thickness of at least 50 µ (microns)	= Dry layer thickness at least 25 µ (microns)
= Total layer thickness	= Dry layer thickness at least 50 µ (microns)

Application with HVLP Method

- When using the HVLP spraying method, the mixture **should** be diluted with max. 7 % demineralized water
- Add the demineralized water only after mixing the Component B (Hardener) and Component A (Coating)
- The Anti-Graffiti-Coating must be applied in (2) layers (wet-on-wet) using a Cross-Coat technique
- Suitable nozzle and pressure settings depend on the device manufacturer and should be determined using a test area
- The processing time (drip time) is approx. 45 minutes at 20 °C. After the time has elapsed or if the viscosity increases, the material can no longer be used
- Drying time: 4 – 6 hours at 25 °C

Layer Thickness for HVLP Application

1. Layer: wet-on-wet layer thickness of at least 100 µ (microns)	= Dry layer thickness at least 50 µ (microns)
= Total layer thickness	= Dry layer thickness at least 50 µ (microns)

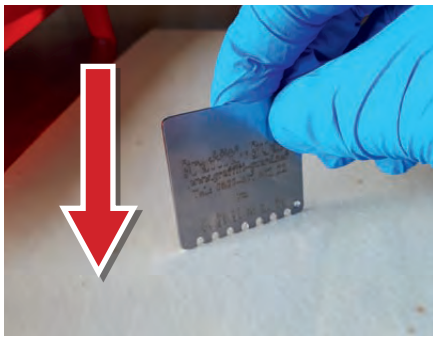
Drying Times / Waiting Times between Work Steps

- Dust dry after approx. 2 hours
- Can be painted over (2nd layer) after approx. 4 – 6 hours at 25 °C
- Complete hardening after 7 days at 20 °C
- The drying time is longer at lower temperatures, poor ventilation and / or higher air humidity

You can find the processing video here: https://youtu.be/GMP7gCeu9Yk

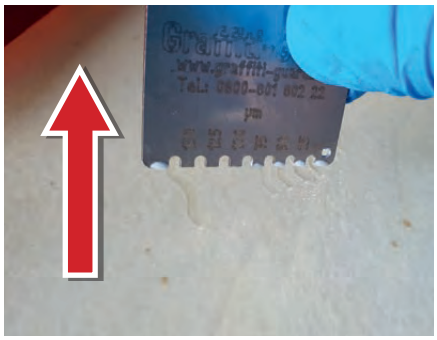
Processing Instructions – PERMA-Guard

Layer Thickness Measurement

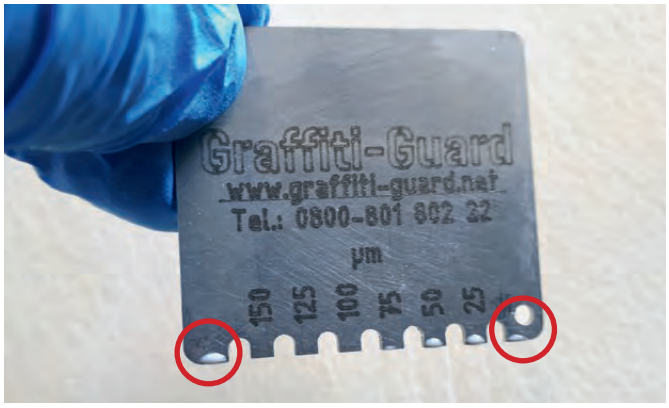


The wet layer comb is placed vertically in the "wet" coating immediately after the coating has been applied.

The measuring comb is then guided forward approx. 1 – 2 cm vertically.



Finally, the measuring comb is removed vertically from the substrate to read the measurement result.



For a correct measurement, both outer prongs must be covered with paint / varnish.

Read the wet layer thickness: The last point covered with paint / varnish shows the wet layer thickness.

Layer Thicknesses for Roller Application

1. Layer: Wet layer thickness of at least 50 µ (microns)
2. Layer: Wet layer thickness of at least 50 µ (microns)

Layer Thickness for HVLP Application

1. Layer: Wet-on-wet layer thickness of at least 100 µ (microns)

Layer Thicknesses must Adhere to:

Too thin = System cleaners or solvents in the paint sprays damage the coating

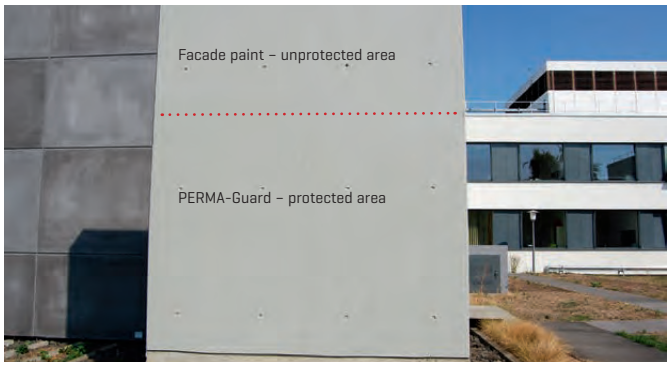
Too thick = Water / CO_2 can not diffuse out of the coating

- Coating cannot harden properly
- Blistering can occur
- Coating can remain milky

Layer thickness measurement:
https://www.youtube.com/watch?v=eYxNxHkdyzM

Order the layer thickness measuring comb:
www.graffiti-guard.net/messkamm

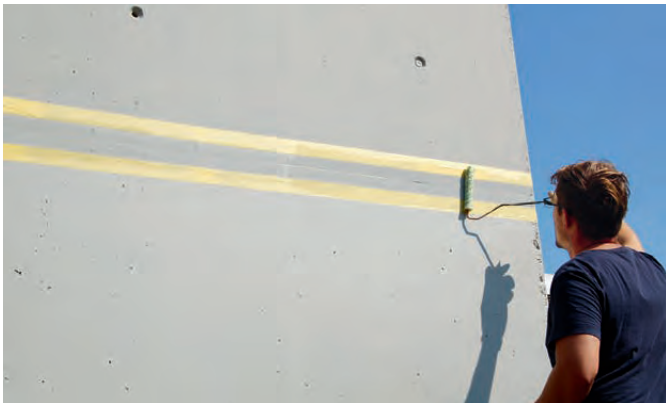
Protection against Driving Rain / Moisture



Unprotected / protected facade areas.

Transition / edge from facade paint to PERMA-Guard-protected surface.

Approx. 15 cm wide strip / overlap at the transition / edge.



Apply impregnation / hydrophobization (e.g. SEMI-Guard) overlapping on the transition / edge.

The rainwater that runs off the facade surface when it rains can cause small amounts of moisture to get behind the graffiti protection. By applying an impregnation / water repellent in the transition area, the risk is reduced.

Renewal

Renewing PERMA-Guard with Paint / Laquers

On structured and / or painted plaster facades or similar

1. PERMA-Guard – Graffiti-Protection leaching – e.g. with a lye from the company Molto, PUFAS or similar
2. Apply adhesion promoter – z. B. 2K-Aqua Epoxy-Primer 2373 (Brillux), 481 Uniprimer (Disbon) or similar

On smooth and / or lacquered surfaces

1. PERMA-Guard – Graffiti-Protection thoroughly sand or apply lye
2. Apply adhesion promoter (see above)

Renewing PERMA-Guard with PERMA-Guard

On structured and / or painted plaster facades or similar

1. PERMA-Guard – Graffiti-Protection leaching – e.g. with a lye from the company Molto, PUFAS or similar.
2. Apply a new layer of PERMA-Guard – dry layer thickness: approx. 30 µ / wet layer thickness: approx. 60 µ

On smooth and / or lacquered surfaces

1. PERMA-Guard – Graffiti-Protection thoroughly sand or apply lye
2. Apply a new layer of PERMA-Guard – dry layer thickness: approx. 30 µ / wet layer thickness: approx. 60 µ

Graffiti-Removal with PERMA-Guard

Graffiti-Removal

STEP 1 STEP 2 STEP 3

Remover BLUE – Graffiti-Remover
All spray paints can be easily removed with this cleaner

STEP 1 STEP 2 STEP 3

Shadow G – Graffiti-Shadow-Remover
For remaining color shadows and stubborn inks and felt markers

STEP 1 STEP 2 STEP 3

NACLO 13 – Pigment-Bleach
For light color shadows due to extreme inks

The specified +130 cleanings can only be guaranteed with the specified system cleaners!
Please note that improper cleaning or the use of third-party cleaning chemicals will void the warranty!

Apply Remover BLUE with a sponge or microfiber cloth and allow to take effect for approx. 5 – 10 minutes. Always work in partial sections with larger graffiti!

Absorb the dissolved spray paint with a microfibre cloth and water.

If color shadows / color clouds remain – apply **Shadow G** with a sponge / microfibre cloth and allow it to take effect for approx. 3 – 5 minutes. Then wash / neutralize with water.

Remove possible residual shadows from extreme inks with **NACLO 13 / BLEACH G**. Finally wash / neutralize the surface with water.

Environmental Conditions

Outside temperature at least 10 °C – no rain – dry surface.

Working Material

Soft sponge (white pad) to avoid scratching the graffiti protection paint, microfibre cloth, paintbrush or soft brush for structured surfaces and water.

Occupational Safety

Protective gloves and safety glasses.
Perform work in ventilated aras.
Do not use a pump atomizer.

You can find the cleaning video here: www.graffiti-guard.net/perma-ge

Starter-Set (UE) – Graffiti-Removal

With the starter set (UE), different types of color sprays and markers (e.g. edding) which hs been used on insenstitive surfaces such as: concrete, glass, clinker, metal, ceramic, natural stone, masonry or **surfaces already protected with PERMA-Guard** can be removed.

- Graffiti-Removal according to the 3-Step-Method
- Removal of spray, felt pen and ink colors
- **Suitable for PERMA-Guard – Graffiti-Protection**
- Sufficient for approx. 8 – 10 m² of Graffiti-Removal

More information here:
https://www.graffiti-guard.net

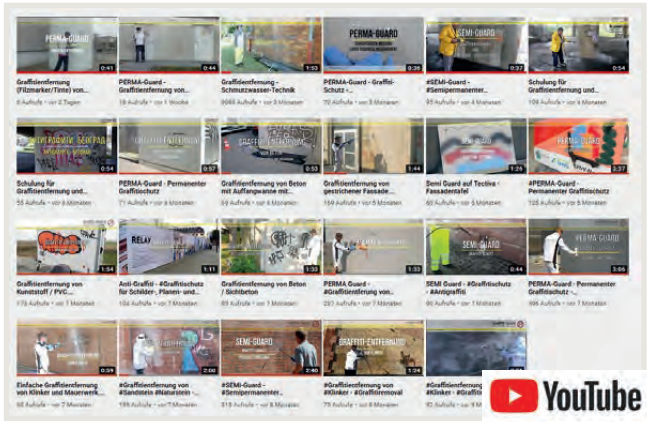
Videos

Application Videos for Practice

We have created short application videos for Graffiti-Removal and Graffiti-Protection. These will give you a good overview of:

- Graffiti-Removal from different surfaces
- Step-by-step instructions
- What you should consider in advance
- Useful tips and hints for application

https://www.graffiti-guard.net/youtube



Training

Training and Workshops

We offer training courses and lectures on the topic “Graffiti” for product users, architects and municipalities.
The training courses and workshops are 1-day and 2-day with an intensive practical block.

We convey the practice with a self-sufficient Graffiti-Removal vehicle.

More information can be found here:
https://www.graffiti-guard.net

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Graffiti-Guard
Anti-Graffiti-System

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