

FK 45 HYGIENIC FORTE

2K High Solid Epoxy Resin-
Hygienic coating with film protection against
mold, virus and bacteria infestation

FAKOLITH®

Type of material



FK 45 HYGIENIC FORTE is a heavy-duty functional 2-component high-solids epoxy resin coating for areas where the highest standards of hygiene are required.

FK 45 HYGIENIC FORTE with BLUE-BIO.FILM.STOP technology complies with the food hygiene requirements of Regulation (EC) 852/2004, Chapter II, "Special provisions applicable to rooms where food is prepared, treated or processed."

As a hygienic coating, FK 45 HYGIENIC FORTE is also recommended for use in operating rooms, laboratories, clean rooms, medical practices.

BIO.FILM.STOP technology protects the coat film against microbial infestation (bacteria, viruses, fungi).

Properties



- Surface protection against mold, virus and bacteria infestation by tested BLUE-BIO.FILM.STOP technology (DIN EN 15457:2014-11, ISO 21702:2019-05, ISO 22196:2011-08).
- FK 45 HYGIENIC FORTE produces a highly resilient surface with good resistance to disinfectants.
- High level of abrasion resistance: UNE EN ISO 5470-1:1999.
- Water impermeable. After drying, FK 45 HYGIENIC FORTE forms a water-impermeable film that is easy to clean.
- No water absorption/not swellable (avoidance of microbial infestation).

FK 45 HYGIENIC FORTE suitable for coating mineral substrates, metals, tiles, plastics, glass fiber as well as intact old coatings (e.g. epoxy coatings, emulsion paints, etc.). See notes on substrate pretreatment.

Sample application with positive cross-cut test of category 0-1 UNE DIN EN ISO 2409:2007 is explicitly recommended.

BLUE-BIO.FILM.STOP Technology

The selected combination of active substances creates a paint film with high qualitative and quantitative resistance to fungi, viruses and bacteria. The tests were carried out in accordance with DIN EN 15457:2014-11 (testing the effectiveness of film protection - Aspergillus, Cladosporium, Penicillium), ISO 21702:2019-05 (measuring antiviral activity on plastics - Feline coronavirus, Strain Munich) and ISO 22196:2011-08 (measuring antibacterial activity on plastics - Escherichia coli, Listeria monocytogenes, Bacillus subtilis, Pseudomonas aeruginosa). BIO.FILM.STOP technology has a preventive effect in the reversible phase. The formation of a biofilm on the surface of the coating is demonstrably inhibited by BioFilmStop prophylaxis.

In addition, the use of BIO.FILM.STOP technology reduces the risk of cross-contamination. BIO.FILM.STOP technology supports existing detection systems and contributes to safety and hygiene in hospitals, sanitary areas, swimming pools and much more.

Areas of application

FK 45 HYGIENIC FORTE is particularly recommended in damp rooms where a heavy-duty ceiling and wall coating is required. BLUE-BIO.FILM.STOP technology protects the surface of the paint film, even under high moisture load, against mold and bacterial attack.

Substrates

Substrate preparation in accordance with the German Construction Contract Guidelines (VOB). Substrates must be dry and free from contamination and separating substances. Observe German Construction Contract Guidelines (VOB), Section C, DIN 18363, part 3. The Substrate pre-treatment depends on the substrate:

- **Concrete:**
Remove release agent residues with FAKOLITH FK 11 Cleaner, if necessary. Remove sanding substances. Pretreat chalking substrates with DISPERLITH PRIMER. On non-chalking substrates apply FK 45 HYGIENIC FORTE directly with approx. 2-4% thinner in the first coat.
- **Mineral substrates:**
Check the strength and absorbency of the substrate. Prime highly to moderately absorbent or chalking substrates with DISPERLITH PRIMER. Otherwise, apply FK 45 HYGIENIC FORTE directly to the mineral substrate.
- **Sheetrock / Aquapanel:**
Prime with DISPERLITH PRIMER or FAKOLITH FK 16 Deep Primer.
- **2K epoxy coatings:**
A sample laying is always required. Clean and sand the surface (>100 grit sandpaper). Direct coating with FK 45 HYGIENIC FORTE.
- **Powder-coated substrates:**
A sample laying is always required. Clean and sand the surface. If necessary, coat directly with FK 45 HYGIENIC FORTE.
- **Substrates made of plastic / GRP:**
A sample laying is always required. Clean and sand the surface. If necessary, coat directly with FK 45 HYGIENIC FORTE.
- **Mold and bacteria infested substrates:**
Clean with FAKOLITH FK 12 diluted 1:4 with water. Then prime with DISPERLITH PRIMER.
- **Yeast and bacteria infested substrates:**
Clean with FAKOLITH FK 39. Then prime with DISPERLITH PRIMER.
- Substrates with **soiling due to grease, oil, soot:**
Clean with FAKOLITH FK 11 diluted 1:20 with water.
- **Coatings that are not load-bearing:**
Remove and clean substrate. Prime with DISPERLITH PRIMER.
- **Load-bearing emulsion paints:**
Clean substrate. It is essential to check the strength and suitability of the old coating(s) by laying samples. Direct coating with FK 45 HYGIENIC FORTE.
- **Wood:** Sand, thoroughly clean off residues, apply FK 45 HYGIENIC FORTE undiluted. A sample application is absolutely necessary due to the different wood types/surfaces.
- **Anti-rust primer and adhesion promoter for iron, steel, stainless steel, aluminum, copper:**

Prepare surface and remove residues of oil, grease, salt or dirt. Recommendation: Apply FAKOLITH FK 11 Cleaner diluted 1:20 with water and clean off immediately. Wipe down with solvent to

prevent corrosion.

Information on surface preparation methods can be found in DIN EN ISO 12944-4.

Remove rust from oxidized surfaces. Coat with FAKOLITH FK 9, allow to react for 10 minutes and wash off again. Dry substrate for 1 hour and wipe with solvent (e.g. Universal Thinner).

Apply FAKOLITH FK 44-POX rust protection primer and adhesion promoter in 1-2 working steps. FAKOLITH FK 44-Pox is odorless and can be applied at temperatures from +4° C.

- **Tiles:**
Clean the tiles and sand them. Remove dust and, if necessary, repair joints. Apply a thin overlapping coat of FK 45 HYGIENIC FORTE + 5% FAKOLITH FK 45 Thinner to highly absorbent joints. After drying (min. 24h) coat at least 2x with FK 45 HYGIENIC FORTE.
- **Container coatings:** Prime steel containers filled with liquid foodstuffs with FAKOLITH FK 44-POX. For drying times of FK 44-POX see technical data sheet. Recommended dry film thickness FK 44-Pox 40-80 μm^2 (= 225-250ml/m²). Subsequently apply FK 45 FOODGRADE with >400 μm dry film thickness in several working steps. This type of coating should only be applied by specialized companies.

Please read the technical information and safety data sheets before application. Observe substrate moisture, check the strength of the old coatings by means of cross-cutting and clarify the spatial/temporal conditions on the object.

Carrying out renovation and maintenance work in industrially used spaces requires sound planning. We recommend inquiring about the individual requirements for the coating and clarifying the conditions on site before starting the work:

- Which cleaning agents are used in which concentration, at which temperature and how often during the daily production process?
- What are the temperatures/humidity during the execution of the renovation works?

We recommend detailed coordination of the work, taking into account the processing conditions and the expected drying times. When will production start up again? What moisture load is to be expected and when will the first cleaning of the renovated section take place?

Processing

Application: The substrate must be clean, dry and load-bearing. The room and substrate temperature must not fall below +12°C and not exceed +30°C during application and drying. The surface temperature of the substrate to be coated should always be 3°C above the dew point. Maximum relative humidity during application: 70%.

Mixing: Stir components A and B separately. This process is important, as both components are highly viscous at rest. Subsequently, slowly stir component B into component A. Stir manually or at lowest speed for approx. 2-3 minutes and then allow to rest for 2 minutes. Avoid mixing in air.

Dilution: The viscosity of the 2K epoxy resin coating varies, depending on the storage and ambient temperatures. Low temperatures increase, high temperatures decrease the viscosity. Accordingly, we recommend to adjust the product on site with FAKOLITH FK 45 THINNER. Addition for manual application up to max. 4%. With dilutions > 4%, there is a risk of the coating running off,

especially on non-absorbent substrates.

Important: Transfer the mixture into a clean bucket for processing. Any residues of component A from the binder can lead to filming problems. Only mix the amount of material that can be processed within 25 minutes (see pot life).

Manual application: Apply with short-floor roller ($\leq 5\text{mm}$) or brush. Application in at least 2 layers. The use of special paint rollers for solvent-based 2-component epoxy resin paints is strongly recommended. Wash out and dry roller well before application.

Airless spraying: Application by spraying should be well planned because of the short pot life. Optimum spraying results were achieved with the Airless unit SF23 Plus from Wagner in the AirCoat process. Nozzle 9/40 flat jet, spray pressure 200bar. AirCoat data: Gun AC 4600, air cap blue, gun filter red, air pressure 3 bar, 5-10 % FAKOLITH FK 45 thinner. Other spray equipment must be tested.

After the pot life has expired, a temperature of up to $+80^{\circ}\text{C}$ may form in the unused mixture (only applies to containers $>5\text{kg}$). Do not leave these containers unattended in exposed areas.

Pot life

A + B (2.5 kg)	10° C	20° C	30° C
Pot life	1 hr. 45 min.	40 min	20 min

VOC content

Category: j (Lb)
Not more than 500 g/l VOC (Directive 2004/42/CE-2010)
The mixture of comp. A+B contains less than 500 g/l VOC

Specific weight

Specific weights of the finished mixture (component A+B):
FK 45 HYGIENIC FORTE white, gray: 1l = ~ 1,36 kg

Solid materials

90 ± 1 % (UNE EN ISO 3233-1:2013) FK 45 HYGIENIC FORTE white and gray

Gloss level

Glossy

Opacity
(UNE-EN 13300)

Dry film thickness 200 μm = Class 2
Dry film thickness 350 μm = Class 1

Colour shade

Standard colors: white, gray (RAL 7004). Please ask for other colors in the contract sector.

Consumption

**Layer thickness and theoretical yield of
FAKOLITH FK 45 HYGIENIC FORTE :**

White / gray			
Coating thickness per working cycle: Approx. 125 μm wet (= 170 g/m ²)			Theoretical Yield
Dry	Wet	g/m ² wet	
75 μm	83 $\mu\text{m} \pm 2\%$	113 g/m ²	8,28 m ² /kg
100 μm	111 $\mu\text{m} \pm 2\%$	151 g/m ²	6.63 m ² /kg
150 μm	166 $\mu\text{m} \pm 2\%$	226 g/m ²	4,14 m ² /kg

Classification of the layer thickness				
	Layer thickness - Consumption			Theoretical Yield*
	dry	wet	Wet*(g/m ²)	
	100 µm	111 µm ± 2%	151 g/m ²	6.62 m ² /kg
Low	200 µm	222 µm ± 2%	302 g/m ²	3,31 m ² /kg
Medium	300 µm	333 µm ± 2%	453 g/m ²	2,21 m ² /kg
High	400 µm	444 µm ± 2%	604 g/m ²	1.66 m ² /kg
Very high	500 µm	555 µm ± 2%	755 g/m ²	1,32 m ² /kg

Material consumption depends on the type of application, environmental conditions, shape and nature of the substrate and technical requirements for the surface. Application in at least 2 layers. **For tank coatings, silos and surfaces with very high mechanical stress, we recommend the application of FK 45 FOODGRADE with a dry film thickness of 400µm only.** For other applications, e.g. as ceiling and wall coating, the minimum layer thickness may vary between 200-300µm.

Adhesion to the substrate

Material	Adhesion FK 45 HYGIENIC FORTE 200 µm Dry film thickness		
	Traction (Kg/cm ²) (UNE-EN ISO 4624:2002)	Demolition (UNE-EN ISO 4624:2002)	Cross cut (UNE-EN ISO 2409:2007)
Concrete	180 ± 10*	100% RCB	-
Wood	140 ± 10*	100% RCB	-
Tile	135 ± 10*	100% RCB	0
Glass	130 ± 10*	100% RCB	0
Sandwich panel	55 ± 5	100% RA	0

Explanations:	DIN EN ISO 4624:2002 Determination of the degree of liability			
	Adhesion values (kg/cm ²)			
	0-30	30-50	> 50	
DIN EN ISO 2409:2007	≥ 3	very low	low	low
	2	low	low	medium
	1	low	medium	high
	0	medium	high	very high

RCB = demolition from substrate / RA = demolition with substrate

The values given are average guide values measured after 7 days drying at 25°C / 50% relative humidity. The application / suitability / transfer to an object must be confirmed by laying samples.

Dilution

FAKOLITH FK 45 Thinner. Alternatively epoxy resin or universal thinner. Thinner for spray application, for pre-treatment of mineral joints and for the 1st coat in floor areas up to 5%.

Drying time

Relative drying times:			
111 µm wet film- 100 µm dry (relative humidity 60-70%)	+ 10° C	+ 20° C	+ 30° C
Non-slip	15-20 h	10-12 h	6-7 h
Can be painted over with FK 45 HYGIENIC FORTE after	24-36 h	12-24 h	8-12 h

The drying times between working cycles are determined by the film thickness, temperature, relative humidity and ventilation. The drying time between working cycles with FK 45 HYGIENIC FORTE should not exceed 48 hours.

The coating shows good general properties at the earliest after a curing time of 72 hours. However, we recommend not exposing the coating to heavy chemical and mechanical loads until after a curing time of at least 2 weeks.

Application temperature

From +12°C substrate temperature.

Storage

Up to 24 months from the date of filling, in well-sealed original packaging. It is recommended to store the product at a temperature between 15°C and 25°C. If stored too cool, crystals may form in component A, which can be dissolved again by heating the container to 20°C. This is a reversible effect which has no influence on the product quality. FK 45 HYGIENIC FORTE must not be stored below +12°C.

Container

2.5kg and 7.5kg containers.

Occupational safety

Exclusive product for professional use. For proper handling, read the safety datasheet, use your personal protective equipment and take the necessary measures.

Disposal

For disposal, the local official regulations must be observed. Liquid materials must be given special treatment in compliance with the official regulations.

Note

A successful renovation requires professional planning and comprehensive documentation. We can offer you the "FAKOLITH Checklists" and the property-related "Renovation Concepts" for this purpose. These documents are available on the internet at www.fakolith.de. Our consultants would be very happy to offer you a personal consultation.

Safety Datasheet:



Safety Datasheet
FK 45 HYGIENIC FORTE
Component A



Safety Datasheet
FK 45 HYGIENIC FORTE
Component B



Safety Datasheet
FAKOLITH FK 45 Thinner

LEGAL NOTICE:

The companies FAKOLITH Farben GmbH and FAKOLITH Chemical Systems S.L.U. are certified according to the quality management system DIN EN ISO 9001:2015 by TÜV Rheinland Cert, Cert. No. 01100071679/01.



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