# FK 45 HYGIENIC FORTE

# 2-component high-solid epoxy resin Hygienic coating with film protection against mold, viruses and bacteria



# Type of material



FK 45 HYGIENIC FORTE is a high-performance, functional 2-component highsolid epoxy resin coating designed for areas with the most demanding hygiene requirements.

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 for rooms in which food is prepared, treated or processed".

As a hygiene coating, FK 45 HYGIENIC FORTE is particularly recommended for use in medical facilities, operating theaters, laboratories, clean rooms and doctors' surgeries.

BIO.FILM.STOP technology protects the paint film from microbial contamination, including bacteria, viruses, and fungi.

#### **Properties**



- Surface protection against mold, viruses and bacteria thanks to tested BLUE-BIO.FILM.STOP technology (DIN EN 15457:2014-11, ISO 21702:2019-05, ISO 22196:2011-08).
- FK 45 HYGIENIC FORTE forms a highly durable surface with excellent resistance to disinfectants.
- High abrasion resistance: UNE EN ISO 5470-1:1999.
- Impermeable to water. After drying, FK 45 HYGIENIC FORTE forms a waterimpermeable film that is easy to clean.
- Suitable for daily cleaning and disinfection
- Impermeable to water and non-swelling, which helps prevent microbial growth.

FK 45 HYGIENIC FORTE is suitable for coating mineral substrates, metals, tiles, plastics, fiberglass and intact old coatings (e.g. epoxy coatings, emulsion paints, etc.). See notes on substrate pre-treatment.

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

#### **BLUE-BIO.FILM.STOP** technology

The selected combination of active substances produces 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 (Measurement of antiviral activity on plastics - Feline coronavirus, Strain Munich) and ISO 22196:2011-08 (Measurement of antibacterial activity on plastics - Escherichia coli, Listeria monocytogenes, Bacillus subtillis, Pseudonomas aeruginosa). The 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 the 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 highly durable ceiling and wall coating is required. The BLUE-BIO.FILM.STOP technology protects the surface of the paint film against mold and bacterial infestation, even when exposed to high levels of moisture.



#### Substrates

Substrate pre-treatment according to VOB. The substrates must be dry, free of dirt and separating substances. Observe VOB, Part C, DIN 18363, Para. 3. The substrate pre-treatment depends on the substrate:

# • Concrete:

If necessary, remove release agent residues with FAKOLITH FK 11 Cleaner. Remove sanding substances. Pre-treat chalking substrates with DISPERLITH PRIMER. Apply FK 45 HYGIENIC FORTE directly to non-chalking substrates 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 / Aquapanels:

Prime with DISPERLITH PRIMER or FAKOLITH FK 16 Deep Primer.

#### 2K epoxy resin coatings:

It is always necessary to lay a sample. Clean and sand the surface (>100 grit sandpaper). Direct coating with FK 45 HYGIENIC FORTE.

#### • Powder-coated substrates:

It is always necessary to lay a sample. Clean and sand the surface. If necessary, coat directly with FK 45 HYGIENIC FORTE.

# • Plastic / GRP substrates:

It is always necessary to lay a sample. Clean and sand the surface. If necessary, coat directly with FK 45 HYGIENIC FORTE.

#### • Substrates infested with mold and bacteria:

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.

# Surfaces soiled with grease, oil, soot: Surfaces soiled with grease, oil, soot:

Clean with FAKOLITH FK 11, diluted 1:20 with water.

# Non-load-bearing coatings:

Remove and clean the substrate. Prime with DISPERLITH PRIMER.

#### • Sustainable emulsion paints:

Clean the substrate. It is essential to test 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 types of wood/surfaces.
- Rust protection primer and adhesion promoter for iron, steel, stainless steel, aluminum, copper:

Prepare the 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 with solvent to prevent corrosion.



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

Remove rust from oxidized surfaces. Coat with FAKOLITH FK 9, leave to act for 10 minutes and wash off again. Allow the surface to dry for 1 hour and wipe with a solvent (e.g. universal thinner).

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

#### Tiles:

Clean and sand the tiles. Remove dust, repair joints if necessary. Apply a thin, overlapping coat of FK 45 HYGIENIC FORTE + 5% FAKOLITH FK 45 Thinner to highly absorbent joints. After drying (at least 24 hours), coat at least twice with FK 45 HYGIENIC FORTE.

• Container coatings: Prime steel containers that are 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 µ/m² ( = 225-250ml/m²). Subsequently apply FK 45 FOODGRADE with >400µm dry film thickness in several coats. This type of coating should only be applied by specialized companies.

Please read the technical information and safety data sheets before application. Note the substrate moisture, check the strength of the old coating using a crosscut and clarify the spatial/temporal conditions on the property.

Carrying out renovation and maintenance work in rooms used for industrial purposes requires sound planning. We recommend asking about the individual coating requirements and clarifying the conditions on site before starting work:

- Which cleaning agents are used in which concentration, at which temperature and how often during the daily production process?
- How high are the temperatures/humidity during the renovation work?

We recommend coordinating the work in detail, taking into account the processing conditions and the expected drying times. When will production start 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 sound. 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 must always be at least 3°C above the dew point. Maximum relative humidity during application: 70%.

**Mixture:** Stir components A and B separately. This process is important as both components are highly viscous at rest. Then slowly stir component B into component A. Stir manually or at <a href="mailto:the lowest speed">the lowest speed</a> for approx. 2-3 minutes and then leave 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 the viscosity, high temperatures reduce it. Accordingly, we recommend adjusting 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, especially on non-absorbent substrates.

**Important:** Pour the mixture into a clean bucket for processing. Any residue of component A from the edge of the container 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 a short pile roller (<= 5mm) or brush. Apply in at least 2 coats. The use of special paint rollers for solvent-based 2K epoxy resin paints is expressly recommended. Wash out roller well and dry before application.

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

After the pot life expires, the unused mixture may heat up to +80°C (applies to containers over 5 kg). Do not leave unattended in exposed areas.

#### Pot life

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

#### VOC content

Category: j (Lb)

Maximum 500 g/I 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:  $11= \sim 1.36 \text{ kg}$ 

Solids content

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

Gloss level

Shiny

Opacity (UNE-EN 13300)

Dry film thickness 200  $\mu$ m = class 2 Dry film thickness 350  $\mu$ m = class 1

Shade

Standard colors: white, grey (RAL 7004). Please enquire about other colors for commercial projects.

# Consumption

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

White / gray			
Layer thickness per c	Theoretical		
Dry	Wet	g/m² wet	Yield
75 µm	83 µm ± 2%	113 g/m <sup>2</sup>	8.28 m²/kg
100 μm	111 μm± 2%	151 g/m²	6.63 m²/kg
150 µm	166 µm ± 2%	226 g/m <sup>2</sup>	4.14 m²/kg



Classification of the layer thickness				
	Layer thickness - Consumption			Theoretical
	dry	wet	Wet*(g/m²)	Yield*
	100 µm	111 µm ± 2%	151 g/m²	6.62 m²/kg
Low	200 µm	222 µm ± 2%	302 g/m <sup>(2</sup> )	3.31 m²/kg
Medium	300 µm	333 µm ± 2%	453 g/m <sup>(2</sup> )	2.21 m²/kg
High	400 µm	444 µm ± 2%	604 g/m <sup>2</sup>	1.66 m²/kg
Very high	500 µm	555 µm ± 2%	755 g/m <sup>2</sup>	1.32 m²/kg

The material consumption depends on the type of application, the ambient conditions, the shape and condition of the substrate and the technical requirements of the surface. Apply in at least 2 coats. For tank coatings, silos and surfaces subject to very high mechanical loads, we recommend using only FK 45 FOODGRADE with a dry film thickness of 400 $\mu$ m. For other applications, e.g. as a ceiling and wall coating, the minimum layer thickness can vary between 200-300 $\mu$ m.

# Adhesion to the substrate

	Adhesive strength FK 45 HYGIENIC FORTE 200 µm dry film thickness			
Material	Tractive force (kg/cm2) (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*	40 ± 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 Determining the degree of liability		
		Adhesion values (kg/cm²)		
		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  $25^{\circ}$ 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 the pre-treatment of mineral joints and for the first coat in floor areas up to 5%.



#### Drying time

Relative drying times:			
111 µm wet layer- 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 according to	24-36 h	12-24 h	8-12 h

The drying times between coats are determined by the coat thickness, temperature, relative humidity and ventilation. The drying time between coats of FK 45 HYGIENIC FORTE should not exceed 48 hours.

The coating exhibits good general properties after a curing time of 72 hours at the earliest. However, we recommend only exposing the coating to heavy chemical and mechanical loads 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 at too low a temperature, crystals may form in component A, which can be dissolved again by heating the container to 20°C. This is a reversible effect that cannot be reversed. This is a reversible effect which has no influence on the product quality. Do not store FK 45 HYGIENIC FORTE below +12°C.

#### Container

2.5 kg and 7.5 kg containers.

#### Occupational safety

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

# Waste disposal

The local official regulations must be observed for disposal. Liquid materials must be subjected to special treatment in accordance with official regulations.

# Note

A successful renovation requires professional planning and detailed documentation. We offer you the "FAKOLITH checklists" and property-related "renovation concepts" for this purpose. The documents are available on the Internet at www.fakolith.de. Our application technology team will be happy to provide you with personal advice.

#### Safety data sheet:



Safety Data Sheet FK 45 HYGIENIC FORTE Component A



Safety Data Sheet FK 45 HYGIENIC FORTE Component B



Safety Data Sheet FAKOLITH FK 45 Dilution

www.fakolith.de



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