Type of material

FK 45 FOODGRADE is a heavy-duty 2K high-solid epoxy resin coating. Tested for direct contact with food according to VO (EU) 1935/2004, VO (EU) 10/2011. Odorless, fast drying, for interior use.

FK 45 FOODGRADE is particularly suitable for surfaces that are temporarily or permanently in direct contact with solid or liquid foodstuffs. FK 45 FOODGRADE is also recommended for coating ceilings and walls in production, cold storage and warehouse areas. Ideal for any interior application where a certified and highly resistant hygienic coating is required.

FK 45 FOODGRADE is explicitly recommended by the Federal Association of Food Inspectors Germany e.V. for food processing companies.

Properties

- Certified according to VO (EC) 1935/2004, VO (EU) 10/2011 for direct contact with food.
- Surface protection against virus and bacteria infestation by tested GREEN-BIO.FILM.STOP technology (ISO 21702:2019-05, ISO 22196:2011-08).
- Recommended by the Federal Association of Food Inspectors of Germany e.V.
- Disinfectant resistance (TÜV SÜD).
- FK 45 produces a heavy-duty surface with good resistance to most of the cleaning agents commonly used in the food industry
- High abrasion resistance: UNE EN ISO 5470-1:1999.
- Water impermeable. After drying, FK 45 FOODGRADE forms a water-impermeable film that is easy to clean.
- No water absorption/non-swellable (avoidance of microbial infestation).

In combination with the system primers FK 44-POX (primer / corrosion protection), DISPERLITH PRIMER (deep primer for microbially contaminated substrates) and FK 16 Tiefgrund, FK 45 FOODGRADE is suitable for coating mineral substrates, metals, tiles, plastics, glass fiber as well as intact old coatings (e.g. epoxy coatings, emulsion paints). Sample application with positive cross-cut test of category 0-1 UNE DIN EN ISO 2409:2007 is expressly recommended.

GREEN-BIO.FILM.STOP Technology
The selected combination of active substances creates a colored film with high qualitative and quantitative resistance to viruses and bacteria. The tests were performed in application of 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). 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.

Recommended by the Federal Association of the food inspectors Germany e.V.

Areas of application

FK 45 FOODGRADE is particularly recommended as a heavy-duty, antibacterial ceiling and wall coating in production and cold rooms in the food industry. FK 45 FOODGRADE is also ideally suited as a renovation coating for metal panels/sandwich panels which show damage due to daily cleaning as well as chemical and mechanical loads.

Other recommended applications are interior coatings of tanks and silos in which food and feed are stored. Also, the coating of machines/boilers in which food is produced. To be noted: Minimum dry film thickness for coating tanks and silos = 400µ.

When using strongly acidic/alkaline cleaning agents or filling materials, we recommend consulting our application technology department. The aim is to check whether FK 45 FOODGRADE has the optimum properties for the intended use. A possible alternative could then also be FK 100 FOODGRADE. With the double certification according to VO (EU) 10/2011 and FDA 21 CFR 175.300, FK 100 FOODGRADE is a variant with maximum chemical resistance, especially in the field of tank and silo coatings (see product information FK 100 FOODGRADE).

HACCP

FAKOLITH Chemical Systems is an associate member of CNTA and a participating partner in official R&D projects related to technically advanced coatings for the food industry and the healthcare sector.

FAKOLITH Chemical Systems is registered both in the Health Registry of the Food Industry of the Spanish Province of Catalonia (Registro Sanitario de Industrias y Productos Alimenticios de Cataluña, RSIPAC) under the number 39.05377/CAT and in the Spanish Health Registry of the Food Industry (Registro General Sanitario de Empresas Alimentarias y Alimentos, RGSEAA) under the number ES-39.005259/T. FAKOLITH Chemical Systems guarantees the production of products of impeccable quality as part of the implementation of the company's internal HACCP concept. According to VO (EU) 1935/2004/EG the traceability of the production is guaranteed.

FAKOLITH Farben GmbH and FAKOLITH Chemical Systems are certified according to the quality management system DIN EN ISO 9001:2008 since 2006. Cert. no. 01100071679/01.

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 FOODGRADE 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 FOODGRADE directly to the mineral substrate.

- **Sheetrock / Aquapanels:**
  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 FOODGRADE.

- **Powder-coated substrates**:
  A sample laying is always required. Clean and sand the surface. If necessary, direct coating with FK 45 FOODGRADE.

- **Substrates made of plastic / GRP:**
  A sample laying is always required. Clean and sand the surface. If necessary, direct coating with FK 45 FOODGRADE.

- **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 FOODGRADE.

- **Wood:** Sand, thoroughly clean off residues, apply FK 45 FOODGRADE undiluted. A sample application is absolutely necessary due to the different wood types/surfaces.

- **Rust protection primer and adhesion promoter for, aluminum, copper, stainless steel with signs of use/rust marks:**

  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 with solvent to prevent corrosion.

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

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

- **Iron, steel, stainless steel:**
  Surface preparation according to DIN EN ISO 12944-4. Direct coating with a minimum layer thickness of 250µm dry.

- **Tiles:**
  Clean the tiles and sand them. Remove dust, repair joints if necessary. Apply a thin overlapping coat of FK 45 FOODGRADE + 5% FK 45 Thinner to highly absorbent joints. After drying (min. 24 h), coat at least 2x with FK 45 FOODGRADE.

- **Vessel 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 µ/m² (= 225-250ml/m²). Subsequently apply FK 45 FOODGRADE with >400µm total

film thickness (dry) in several work 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 DILUTION. Addition for manual application up to max. 4%. At dilutions >4%, there is a risk of running of the coating during manual application, 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 (<= 5mm) or brush. Application in at least 2 layers. The use of special paint rollers for solvent-based 2C 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 180bar. AirCoat data: Gun ACF 3000, 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°C may form in the unused mixture (only applies to containers >5kg). 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

A + B (5.0 kg)	10°C	21° C	32° C
Pot life	1 hr. 35 min.	35 min.	15 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 FOODGRADE white, gray: 1l = ~ 1,35 kg
FK 45 FOODGRADE transparent: 1l = ~ 1,10 kg

The weight-related mixing ratio depends on the color shades:
2,44kg A : 1kg B = white (approx. RAL 9003), grey (approx. RAL 7004), telegrey (approx. RAL 7047), black (approx. RAL 9017), dark green (approx. RAL 6002), ochre brown (approx. RAL 8001), signal yellow (approx. RAL 1003), light ivory (approx. RAL 1015), ivory (approx. RAL 1014), oxide red (approx. RAL 3009)

2.55 kg A : 1kg B = white
2.03 kg A : 1 kg B = light blue (approx. RAL 5012)
1.56 kg A : 1 kg B = micaceous iron oxide (approx. RAL 9006)
1.33 kg A : 1 kg B = transparent

Solid materials

90 ± 1 % (UNE EN ISO 3233-1:2013) FK 45 FOODGRADE white/grey
95 ± 1 % (UNE EN ISO 3233-1:2013) FK 45 FOODGRADE transparent

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 (approx. RAL 9003), gray (approx. RAL 7004), transparent.

Other shades in FOODGRADE quality:

From an order quantity of **7.5kg**: light ivory (approx. RAL 1015), light blue (approx. RAL 5012), oxide red (approx. RAL 3009).

From an order quantity of **100kg**: black (approx. RAL 9017), dark green (approx. RAL 6002), ivory (approx. RAL 1014), ochre brown (approx. RAL 8001), signal yellow (approx. RAL 1003), telegrey (approx. RAL 7047), micaceous iron ore (approx. RAL 9006). Please note that longer delivery times may be required for these color shades.

Please note: The color shades do not match 100% with the RAL shades mentioned. For the tinting of FAKOLITH FK 45 in FOODGRADE quality, we use only powder pigments approved for food contact.

Tinting FAKOLITH FK 45 with suitable liquid color concentrates is possible in principle. However, FAKOLITH FK 45 then does not meet the requirements of VO (EC) 1935/2004, VO (EU) 10/2011, VO (EC) 1895/2005 for products in direct contact with food. A declaration of compliance cannot be issued in this case. Possible compatibility problems should be excluded by prior sampling.

Consumption

Layer thickness and theoretical yield of FK 45 FOODGRADE:

Transparent			
Coating thickness per working cycle: Approx. 75µm wet (= 82.50 g/m²)			**Theoretical Yield**
dry	**wet**	**g/m² wet**	
50 µm	54 µm ± 2%	58 g/m ²	17,27 m²/kg
75 µm	79 µm ± 2%	87 g/m ²	12,95 m²/kg
100 µm	105 µm ± 2%	116 g/m ²	8,63 m²/kg

White / gray			
Coating thickness per working cycle: Approx. 125µm wet (= 170 g/m²)			**Theoretical Yield**
dry	**wet**	**g/m² wet**	
75 µm	83 µm ± 2%	113 g/m ²	8,28 m²/kg
100 µm	111 µm± 2%	151 g/m²	6.63 m²/kg
150 µm	166 µm ± 2%	226 g/m ²	4,14 m²/kg

Classification of the layer thickness				
	Layer thickness - Consumption			**Theoretical Yield***
	dry	**wet**	**wet*(g/m²)**	
	100 µm	111 µm ± 2%	151 g/m²	6.62 m²/kg
Low	200 µm	222 µm ± 2%	302 g/m ²	3,31 m²/kg
Medium	300 µm	333 µm ± 2%	453 g/m ²	2,21 m²/kg
High	400 µm	444 µm ± 2%	604 g/m ²	1.66 m²/kg
Very high	500 µm	555 µm ± 2%	755 g/m ²	1,32 m²/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 subject to very high mechanical loads, we recommend the application of FK 45 FOODGRADE in white/grey with a dry film thickness of 400µm only**. For other applications, e.g. as ceiling and wall coating, the minimum layer thickness can vary between 200-300µm.

Dilution

FAKOLITH FK 45 Thinner. For manual application approx. 2.5%. For machine application 5-max. 10%. For floor application approx. 5% for the first coat. We generally recommend ordering FK 45 Thinner as well in order to optimally adjust the 2-component coating to the conditions on the object and the best processing properties. As an alternative to FK 45 Thinner, an epoxy resin or universal thinner not belonging to the FOODGRADE system can also be used. The compatibility

must be checked. The coating is then no longer compliant with VO (EU) 10/2011.

Drying time

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

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

Containers for liquid food: The coating in the colors white/grey shows complete curing for contact with liquid food from 28 days (conditions: 23ºC, 50% rel. humidity, layer thickness 400 µm dry). The lower the temperature or the higher the humidity and the film thickness, the more the ideal curing time increases. During the application, an additional ventilation possibility must be provided. Warm air accelerates curing. Before filling a container with food, clean the coating with clean water. Maximum permanent temperature of the metal container in operation (inside and surface): 40°C.

Other applications: 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.

Test criteria

VO (EC) 1935/2004, VO (EC) 1895/2005, VO (EC) 2023/2006, VO(EU) 10/2011, VO (EU) 1282/2011, EN 11861:2002, EN 1186-3:2002, EN 11.86-14:2002

Declaration of Conformity

Please request the declaration of conformity from the factory.

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 25ºC. 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 FOODGRADE must not be stored below +12°C.

Container

1.0 kg, 2.5 kg and 7.5 kg. In the contract sector, 15 kg containers are also available.

Occupational safety

Exclusive product for professional use. For proper handling, read the safety data sheet, 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 detailed documentation. For this purpose, we offer you the "FAKOLITH Checklists" as well as object-related "Renovation Concepts". The documents are available on the Internet at www.fakolith.de. Our application technology department will be happy

to provide you with personal advice.

Safety datasheet

Safety Datasheet
FAKOLITH FK 45 A

Safety Datasheet
FAKOLITH FK 45 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.

Management System ISO 9001:2015
TÜVRheinland ZERTIFIZIERT
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