



Painting floors and pavements in the food industry and health sectors with certified epoxy foodgrade paint for direct and indirect contact with food and beverages

Description of the problem

The application on floors and pavements of Fakolith food epoxy paints suitable for direct and indirect contact with food is increasingly in demand by industry, food certification bodies, health inspection, etc. It is clear that epoxy paints, even with their limitations and advantages over polyurethanes, tend to be the most common type of paint for finishing floors, floors and multilayer floors. Thanks to the high performance FoodGrade epoxy paints such as **FK-100 FoodGrade** (bio-hybrid 100% solids epoxy, EU and FDA certified), which has become the most widely used due to its extensive certifications, as well as its predecessors **FK-45 FoodGrade** (EU certified very high solids epoxy), also **FK-45 FoodGrade Hygienic** (EU certified very high solids epoxy-novolac) and **FK-450 FoodGrade** (EU certified high solids waterborne epoxy), you enjoy CE marking tests, and direct and indirect food contact certification with all food groups. Alternatively, you can also opt for the 2-component polyurethane **FAKOPUR FoodGrade**, especially for exterior applications. All Fakolith FoodGrade coatings are treated with BioFilmStop Green Antimicrobial Technology, which helps to inhibit the nesting of bacteria, biofilm and viruses that cause foodborne illnesses, thus increasing food and health safety. If you are inexperienced with high solids epoxies, we recommend consulting our "[Application guide, problems and solutions for high solids epoxy paints](#)" before starting work with these paints.



Summary of the most common basic solution and procedure

The ideal pre-treatment to ensure maximum adhesion on a concrete pavement that is not new, is to perform adequate shot blasting and vacuuming to achieve a solid support, sanitized and with a proper planimetry and roughness (not polished), and above all free of dust and dirt in the pores, or with traces of old paints poorly adhered that prevent proper adhesion.

1. SURFACE CLEANING:

- **Option A - FAKOLITH FK-12:** If the base has been shot-blasted or is already free of previous paint, the cleaner will be applied with subsequent rinsing with water, to eliminate leaving the pores of the pavement clean and free of dust, moisture damage, saltpetre, microorganisms, etc. After drying, the base is ready for the next treatment.
- **Option B - FAKOLITH FK-111:** If on the other hand, there are layers of previous paints and it has been decided to repaint, we recommend to apply the descaler and cleaner of grease, pollution, industrial dirt, etc., with subsequent rinsing with water, to remove the dirt. Allow to dry completely before painting.

2. SURFACE PAINTING:

Final painting between 2 to 4 coats with Fakolith FoodGrade food epoxy or polyurethane paint, whichever is more convenient in each case. At least for the first coat and depending on the application, environmental and

environmental conditions, we recommend diluting it up to 10% with its solvent, to provide better wetting, leveling and extend the pot-life. If a non-skid finish is required, [FAKOLITH SLIP STOP](#) should be added in the last 2 coats. See application details in its Technical Data Sheet.

· **Option A - [FAKOLITH FK-100 FOODGRADE](#)**: There is no epoxy paint in its category with more food and physical-chemical resistance certifications, so it has become a multi-purpose standard that is also successfully applied on floors. In addition, as a partially bio-based epoxy paint, it is exempt from being considered dangerous goods for transport by road, sea or air, which makes it particularly easy to export. Alternatively (but without the option of shipping by air), the predecessor epoxy references [FK-45 FoodGrade](#) and [FK-45 FoodGrade Hygienic](#) are another option with similar characteristics.

· **Option B - [FAKOLITH FK-450 FOODGRADE](#)**: For surfaces up to medium stress, or with traces of moisture in the base, this water-based epoxy is highly recommended.

· **Option C - [FAKOPUR FOODGRADE](#)**: 2-component polyurethane paint, especially recommended in exterior situations or exposed to U.V. light.

Application process

1.- OPTION A - FK-12

PRODUCT SUMMARY: Concentrated water-based detergent cleaner, free of chlorine and formaldehyde, biodegradable and compatible with moisture. Wide range of applications and sectors, for use both indoors and outdoors, on horizontal and vertical surfaces.

For cleaning moisture damage on surfaces of various materials; saltpetre blooms, lime blooms, surface damage caused by the action of microorganisms such as mould, moss, bacteria and biofilm matrix, as well as medium-grade pollution. Mainly used in industry in general, food industry, health sector, establishments in general, restoration of facades and heritage, civil works.

It presents a notorious descaling power of penetration, leaving the pore of the base, clean, open and receptive for later treatments; consolidators, protectors, waterproofing impregnations, primers, paints and coatings, anti-graffiti protections, etc. Its tensoactive components facilitate the neutralization of the base, after rinsing with water. With Declaration of Conformity.

MODE OF APPLICATION: Application from concentrated to dissolved 1:4 in water as a general rule. Adapt the dissolution according to the needs and conditions of each surface. The higher the concentration, the faster the action, and the higher the capacity to clean the damage. Especially to eliminate lime and microorganisms in wood will be applied without dilution.

Once the dissolution is done, apply preferably from the upper area, with brush, sponge, mop, spray, as appropriate in each case:

- Insist where the reaction is triggered and rub the affected area with brushes.
- Rinse with water before the product and the dissolved dirt dry.
- Allow to dry before proceeding with other treatments.

CONSUMPTION - PERFORMANCE: It is very variable, depending on the solution used, type and absorption of the surface, method of application, type and degree of dirt or affection, so its average performance can vary between 4 m² and 15 m² per litre of concentrate.

1.- OPTION B - FK-111

DESCRIPTION AND MAIN USE: FAKOLITH FK-111 is a detergent cleaner for use with grease-based dirt or grime, pollution, biofilms matrix, scorching or industrial grime in general, on surfaces resistant to alkaline solutions. Mainly

for use in the food industry, industry in general, construction and civil engineering. Health Register FAKOLITH RGSEAA ES-39.005259/T y ROESP E-0043-E.

RECOMMENDED THINNER: 1 part FK-111 to 4 parts water. Can also be used undiluted if necessary, in more contaminated areas or when speed of action is required.

HOW TO APPLY: Carefully protect all surfaces that are not to be treated from splashing. Apply diluted FK-111 using spray guns, brushes or rollers and immediately activate the product by scrubbing with a brush with stiff plastic bristles, working particularly on the worst affected areas. Allow 15-20 minutes to pass, although always before it has dried, and then wash off and rinse thoroughly using water under pressure. If so required the operation can be repeated. Leave to dry before going ahead with possible additional treatments. For further details consult the specifications sheet and/or application guidelines, along with the safety sheet.

AVERAGE YIELD: Undiluted FK-111 provides a yield of approx. 8-12 litres/m², although depending on the extent of the contamination this may vary considerably.

2.- OPTION A - FK-100 FoodGrade

PRODUCT SUMMARY: FK-100 FoodGrade is a 2-component heavy-duty food contact epoxy coating, 100% solids and partially bio-based, and with double certification for direct contact with food, the European EU 10/2011 and the American FDA 21 CFR 175.300. High performance and high thickness coating, low Voc, low odor bio-based, gloss finish, with CE marking tests, and tested excellent anticorrosive and physicochemical resistance in its category. Particularly suitable for the protection, renovation, and painting of surfaces in direct, occasional or indirect contact with food, beverages, water for food processing and drinking water.

FIELDS OF USE: Following the technical indications for each system, FK-100 FoodGrade can be applied inside silos, tanks and pipes, walls, ceilings, skirting boards, floors, metal structures, machinery and equipment, large aquariums and fish farms, cold and freezing rooms, food warehouses, panels, food transport, etc., always indoors. Especially in the food industry and healthcare sectors, hospitals and clinics, and also in industry, civil works and public and private buildings in general. Compatible with most mineral surfaces, concrete, sandblasted metals SA 2,5 Rz>50, metals properly primed, lacquered panels and on other paints and / or compatible primers well bonded and other surfaces resistant to cut-cross test Class 0-1 UNE-DIN EN ISO 2409:2007 and traction EN ISO 4624:2016 Rigid Systems: $\geq 1,0 (0,7) \text{ b N/mm}^2$. (Without traffic loads) and: $\geq 2,0 (1,5) \text{ b N/mm}^2$ (With traffic loads).

Product treated (BPR Art 3 and 58) with BioFilmStop FG antimicrobial technology, specific FoodGrade version, highly effectiveness tested against bacteria and other pathogenic microorganisms such as coronavirus, and always according to EU 10/2011 and FDA 21 CFR 175.300 regulations. ISO 22196 and ISO 21702 effectiveness test (Escherichia coli, Listeria monocytogenes, Bacillus subtilis, Pseudomonas aureginosa, Staphylococcus aureus, Salmonella enteritidis, Legionella pneumophila, Coronavirus Feline). The paints and coatings of the Fakolith FoodGrade range contribute to the positive compliance with CE 852/2004, are manufactured under HACCP and Good Manufacturing Practices (GMP) according to CE 2023/2006 and/or FDA 21 CFR 174.5, improving the hygiene, food and health safety of surfaces and environments.

STANDARD COLORS: Pearl White RAL 1013, Oxide Red RAL 3009 and Grey RAL 7004, Blue RAL 5012, Green RAL 6002 and Transparent Amber Varnish. (Please check availability, price and minimum required quantity for other colors from our FoodGrade chart or other RAL colors, except white which is not available in this product).

APPLICABLE with brush, roller, Airless or AirMix preferably heated.

With Declaration of Compliance, Performance and CE marking.

PAINT AVERAGE YIELD: according to recommended coat thickness, depending on use of FK-100 FoodGrade

- Dry thickness = Wet thickness: 200 μm - consumption is 265 gr/m² - a yield of 3,77 m²/kg.
- Dry thickness = Wet thickness: 300 μm - consumption is 395 gr/m² - a yield of 2,53 m²/kg.

- Dry thickness = Wet thickness: 350 µm - consumption is 463 gr/m² - a yield of 2,16 m²/kg.
- Dry thickness = Wet thickness: 400 µm - consumption is 530 gr/m² - a yield of 1,89 m²/kg.
- Dry thickness = Wet thickness: 500 µm - consumption is 660 gr/m² - a yield of 1,51 m²/kg.
- Dry thickness = Wet thickness: 700 µm - consumption is 925 gr/m² - a yield of 1,08 m²/kg.

VARNISH AVERAGE YIELD:

- Dry thickness = Wet thickness: 50 µm - consumption is 51,5 gr/m² - a yield of 19,4 m²/kg.
- Dry thickness = Wet thickness: 75 µm - consumption is 77,3 gr/m² - a yield of 12,9 m²/kg.
- Dry thickness = Wet thickness: 100 µm - consumption is 103gr/m² - a yield of 9,7 m²/kg.

For a correct application follow the indications in the technical sheets, application guides and safety data sheets. In case of doubt consult our technical service.

2.- OPTION B - FK-450 FoodGrade

DESCRIPTION: FAKOLITH FK-450 FoodGrade is the first high performance waterborne epoxy food paint, which is certified as suitable for direct and indirect contact with food and drinking water. It is high solids, low voc, low odor and has excellent CE marking tests. FK-450 FoodGrade, which generates a film with high resistance to abrasion, impermeable to liquid water but breathable to water vapor, easy to clean and disinfect with hot water. Its excellent insulating qualities and vapor barrier effect, make it work as an excellent waterproofing and long-term anticorrosive treatment for metals in combination with the correct anticorrosive primer system (except immersion where FK-45 or FK-100 FoodGrade is recommended). Compatible with most mineral surfaces, properly primed metals, lacquered sandwich panels, and previous compatible paints and/or primers, well adhered and resistant to Class 0-1 grid cut test, UNE-DIN EN ISO 2409:2007. Resistant to most disinfectant cleaners according to Test DIN EN ISO 4628-2: 2004-01. (For greater safety, please consult our Technical Dept. prior to use). Coverage Class 1 (300 µm dry film) and wet rub Class 1, DIN EN 13300.

CERTIFIED FOOD PAINT SUITABLE FOR DIRECT CONTACT: FK-450 FoodGrade epoxy food paint duly complies with all current European regulations for materials in contact with food, EC Regulation 852/2004, Regulation 1935/2004/EC, EC Regulation 1895/2005, HACCP production and EC Regulation 2023/2006 GMP, as well as RD 847/2011 and Commission Regulation (EU) No. 10/2011 and its subsequent amendments including EU 2018/213 (BPA compliant), on plastic materials and articles intended to come into contact with food such as. To this end, FK-450 FoodGrade is being tested with simulants A, B, C, D2 (OM2-40°C) and C (OM4-100°C), as demonstrated by the tests carried out by Fakolith in independent certified entities, such as Tecnia and the National Center for Food Technology (CNTA) among others, that it complies in all cases tested with the overall and specific migration limits imposed by these regulations for the above-mentioned simulants, which are equivalent to all simulants and therefore suitable for direct contact with all foods and beverages (exception: vinegar damages the resin): vinegar damages the epoxy resin. Not suitable for food intended for infants or young children according to regulation (EU) No 609/2013). FK-450 FoodGrade will have Food Conformity Declaration - Health Registration FAKOLITH RGSEAA ES-39.005259/T. Available in the main industrial colors of the food industry and sanitary sector.

AQUA-FOODGRADE TECHNOLOGY: FAKOLITH FK-450 FoodGrade is the first 2-component, high solids epoxy food paint that does not contain or require additional solvents or alcohols for its application. The A+B mixture incorporates water emulsion as a solvent. This is a milestone that will facilitate room temperature or forced drying, as water is much easier and safer to evaporate. Especially in confined spaces, having no flammable or volatile hazardous materials during application and curing is a great novelty and advantage.

BIOFILMSTOP SANITARY TECHNOLOGY (Treated article BPR Art.3): FK-450 Foodgrade is a food grade paint that combines FoodGrade Technology with BioFilmStop sanitary technology for inhibition and high resistance to biofilm and bacteria, ISO 22196:2011 (Escherichia coli, Listeria monocytogenes, Bacillus subtilis, Pseudomonas aureginosa, Staphylococcus aureus, Salmonella enteritidis, Legionella pneumophila, etc.). ...) also significantly improving HACCP, food safety and asepsis of the user industry. It also includes Fakolith's innovative FOODTECH film protection technology based on food preservatives.

MAIN USE: FK-450 FoodGrade food epoxy is specially formulated for the protection and finishing of mineral

deposits of drinking water or water from food and agricultural processes, solid food deposits, as well as skirting boards, floors, walls, ceilings, objects, machinery, installations, structures, etc. located indoors. In general use in the food industry, health, pharmaceutical and cosmetic sector, industry in general, construction and civil works.

METHOD OF APPLICATION: After adequate preparation of the base and having checked the suitability of the environment, FK-450 FoodGrade can be applied by brush, roller or for optimal finishes and applications with AirMix or Airless spraying equipment. Slowly pour component B over component A, and stir at low revolutions with an electric agitator for at least 2 minutes until its correct homogenization. Let it rest for at least 1 minute before starting to apply. Always mix complete sets of A+B to avoid errors in the mixing ratio. Plan the application well taking into account its possible short pot-life. Can be applied in systems with fiber mesh in tanks and with anti-skid quartz sand in pavements. If necessary adjust the viscosity of the paint by adding 5-10% of potable water.

ATTENTION TO APPLICATION AND CURE CONDITIONS: Drying times and waiting time for the second coat depend on the actual thickness of the layer, temperature, relative humidity and ventilation. The ambient and base temperature, as well as the temperature of the paint should never be lower than +10°C nor higher than 35°C, and the relative humidity should not be higher than 70-75%. The surface temperature of the base to be painted should always be at least 3°C above the dew point to avoid condensation. It is estimated that the ideal application temperature is around 20°C and 60% relative humidity. In case the environmental conditions are not adequate for its application and curing, these should be adapted with air extraction and ventilation, either at room temperature, with cold or heat, with dehumidifiers, etc; until the environmental conditions are adequate and stable during the application and curing, and always avoiding the generation of condensation humidity, since this would prevent the correct curing of the paint, a fact especially to be watched in tanks and confined spaces. The epoxy paint should not receive contact with water or surface condensation during the first 72 hours of curing, or the paint may not cure correctly, appearing "Amine Blush" wash spots.

OTHER GENERAL APPLICATIONS: The paint offers good general performance, at least after 72 hours of curing, although we recommend not to subject the paint film to severe chemical-physical aggressions until it has cured for at least 1 week (walls, floors, ceilings...indirect contact).

For further details see technical data sheet and/or application guides, and safety data sheet.

AVERAGE PAINT YIELD: according to the recommended film thickness depending on the use of FK-450 FoodGrade

- For a dry film thickness of 200 µm - 428 gr/m² are consumed - yielding 2.34 m²/Kg (3 m²/L.).
- For a dry film thickness of 300 µm - 640 gr/m² are consumed - yielding 1.56 m²/kg (2 m²/L.).
- For a dry film thickness of 350 µm - 748 g/m² are consumed - yielding 1.34 m²/kg (1.72 m²/L.)
- For a dry film thickness of 400 µm - 854 g/m² are consumed - yielding 1.17 m²/kg (1.50 m²/L.)
- For a dry film thickness of 500 µm - 1.068 g/m² are consumed - yielding 0.94 m²/kg (1.20 m²/L.)
- For a dry film thickness of 700 µm - 1.494 kg/m² is consumed - yielding 0.67 m²/kg (0.86 m²/L.)

2.- OPTION C - FAKOPUR FoodGrade

PRODUCT SUMMARY: FAKOPUR FOODGRADE is a 2-component, solvent-based, high solids, aliphatic isocyanate acrylic polyurethane food contact paint, certified for direct, indirect and occasional contact with food, in accordance with EU Regulation 10/2011. High performance paint, resistant to outdoors, satin finish, with CE marking tests and excellent physicochemical resistance in its category. Particularly suitable for the protection and painting of surfaces in direct and indirect contact with food, beverages, water for food processing and drinking water.

Product treated (BPR Art 3 and 58) with BioFilmStop FG antimicrobial technology, specific version for food contact, with high effectiveness tested against bacteria and other pathogenic microorganisms such as coronavirus, and always in accordance with EU 10/2011 and FDA 21 CFR 175.300 regulations. Effectiveness test ISO 22196 and ISO 21702 (Escherichia coli, Listeria monocytogenes, Bacillus subtilis, Pseudomonas aureginosa, Staphylococcus aureus, Salmonella enteritidis, Legionella pneumophila, Feline Coronavirus). The paints and coatings of Fakolith's foodgrade contribute to positively comply with EC regulation 852/2004, are manufactured under HACCP and Good Manufacturing Practices (GMP) according to EC 2023/2006 and/or FDA 21 CFR 174.5, improving hygiene and food and sanitary safety of surfaces and environments.

FIELDS OF USE: Following the technical indications for each system, it is mainly applied in outdoor situations of

direct, indirect and occasional contact, in silos and tanks, ponds, culture pools, hoppers, troughs, floors, walls, equipment and tools, food warehouses, panels, food transport, objects, aquaculture... or indoors where a polyurethane is more convenient than an epoxy due to its properties. Especially for use in the food industry and primary sectors of agriculture, livestock and fisheries. Its excellent insulating qualities and vapor barrier effect, make it work as an excellent waterproofing on concrete, as a protective finish for metals in combination with anticorrosive primers compatible. FAKOPUR FoodGrade has in general good adhesion on various consistent bases and suitable roughness, concrete, mineral bases, properly primed metals, wood, compatible primers... Compatible with most consistent surfaces: Tensile strength EN ISO 4624:2016 Rigid Systems: ≥ 1.0 (0.7) b N/mm². (No traffic loads) and: $\geq 2,0$ (1,5) b N/mm² (With traffic loads), Surfaces with adequate roughness $R_z > 50$, both on mineral bases, as well as properly sandblasted (SA 2,5) or primed metals, Lacquered panels and compatible previous paints and/or primers, well adhered and resistant to the ISO 2409:2007- Class 0-1 grating shear test.

SERIAL COLORS: White RAL 9003 and Grey RAL 7004, (Consult availability, price and minimum quantity for other FoodGrade colors or other RAL colors).

APPLICABLE with brush, roller, Airless or Air-Mix preferably heated.

AVERAGE YIELD: according to recommended film thickness depending on the use of FAKOPUR FoodGrade.

-For a dry film thickness of 50 μm - 100 ml/m² are consumed - yielding 10 m²/l.

-For a thickness of 100 μm dry - 200 ml/m² are consumed - yielding 5 m²/l.

-For a dry thickness of 150 μm - 300 ml/m² are consumed - yielding 3.3 m²/l.

For a correct application follow the indications in the technical data sheets, application guides and safety data sheets. In case of doubt consult our technical service.

IMPORTANT NOTE: According to the latest update of [Regulation \(CE\) n.o 1907/2006](#), specific mandatory training is required for a safe use and handling of this product. For further information, consult TDS on its 3rd page.

IMPORTANT NOTE:

This application guide is a general recommendation. On particular cases there may be additional recommendations or variations. Consult your doubts and recommended plan of subsequent maintenance with our Technical Department through the contact form of this web. If you want a Personalized Technical Prescription, [contact us](#) and send us the completed Check List of the Food-Health Industry available in the section "Application Guides".

APPLICATION GUIDES LEGAL ADVICE:

FAKOLITH CHEMICAL SYSTEMS, S.L.U. (FCS) applies a quality management system, and manufactures under HACCP for the food industry and health sectors, among others. Fakolith is certified by TÜV Rheinland Cert GmbH for ISO 9001: 2015 standard. FCS is a company of the FAKOLITH group in Spain, dedicated to developing, manufacturing, importing and commercializing paints and special industrial treatments. As our corporate purpose reflects, the legal responsibility for the application of the products is always out of our reach. FCS has a policy of R.C. of products with international coverage, except USA and Canada, of up to three million euros for damages caused by possible manufacturing defects.