



## Painting or renewal of metallic elements and machinery with certified foodgrade paint suitable for direct and indirect contact with food and drinks, as an alternative to stainless steel

### Description of the problem

There are many metal surfaces, painted or unpainted, or galvanised, in the food industry, both indoors and outdoors. Fakolith's FoodGrade range of food paints offers solutions both for OEM painting of new parts and equipment at source, and for the renovation, maintenance and extension of the useful life of existing ones; machinery, robots, housings, supports, hangers and cages, etc.



Fakolith, with Health Registration ES-39.005259/T for the manufacture of materials in contact with food, is periodically inspected by the health authority, and has FoodGrade paints, varnishes and coatings with all the documentation and tests that guarantee their suitability for direct and indirect contact, with solutions tested for all food groups, liquids or solids, for prolonged contact, occasional or indirect contact. Various coating options are available; high performance epoxy food paints, water-based enamels for easy renewal and maintenance, and polyurethanes for exterior surfaces. All Fakolith FoodGrade food coatings are treated with BioFilmStop Green Food Antimicrobial Technology, which helps to inhibit the nesting of bacteria, biofilm and viruses that cause food borne illnesses, thereby increasing food and health safety. We recommend consulting our "[High Solids Epoxy Application Guide](#)" before starting work with the epoxy range.

### Summary of the most common basic solution and procedure

The ideal pretreatment to ensure maximum adhesion to the iron-steel base is based on the complete removal of existing paint layers on the surface, by sandblasting SA 2.5 Roughness Rz>50, in this way we will reach the base metal, clean of rust and with the appropriate roughness to ensure the best possible adhesion of the primer and/or paint. In addition, you can use chemical stripping agents (e.g. [Oxystrip](#)). If this preparation of the base is not feasible, alternatively the existing paint should be sanded superficially and the correct adherence should be checked by Cut-Cross Test Class 0. After sanding, a general cleaning with [FK-111](#) and elimination of rust corrosion spots with [FK-9 Gel](#) should be carried out. After proper drying, the base will be ready for the following process.

#### 1. ANTICORROSIVE PRIMER:

It is always necessary for non-sandblasted metals, and for galvanized or aluminum, in all cases.

· [FK-44 POX](#): Apply 1-2 coats of water based anticorrosive epoxy primer. Alternatively use a compatible anticorrosive epoxy primer, or paint directly if the iron is properly sandblasted SA 2.5 Rz>50 according to the technical data sheet.

#### 2. SURFACE PAINTING:

Final painting between 2 to 4 coats with Fakolith FoodGrade paint, whichever is more convenient in each case.

- **Option A - FAKOLITH FK-100 FOODGRADE:** When the highest physical-chemical resistance in its category is required. Recommended in general and especially when the food or beverage to be contained is liquid and is in metal tanks. It has the most extensive EU and FDA certification in the market. In addition, FK-100 FoodGrade as a partially biobased epoxy paint has an exemption for not being considered dangerous goods for transport by road, sea or air. (Alternatively can still be used [FAKOLITH FK-45 FOODGRADE](#) or [FAKOLITH FK-45 FOODGRADE HYGIENIC](#).)
- **Option B - DISPAINT FOODGRADE:** Innovative water-based enamel, fast drying, thin film and matt-satin finish, suitable for direct and indirect contact with foodstuffs, which is presented as the most versatile option for multiple surfaces. For surfaces requiring good hardness, medium physical-chemical stress, with easy renovation and maintenance. It has double certification EU 10/2011 and FDA 21 CFR 175.300, and CE marking tests, which broadens its field of use.
- **Option C - FAKOPUR FOODGRADE:** 2-component polyurethane paint, especially recommended for outdoor situations or exposed to UV light.

## Application process

### 1.- FK-44 POX

**PRODUCT SUMMARY:** FK-44 Pox is a 2-component waterborne epoxy primer, providing excellent adhesion on a wide range of metals and alloys in general, adding miscellaneous anticorrosive properties of zinc and aluminum phosphate, lamellar fillers and organic anticorrosive agents. It is a low voc primer, easy to apply, low odor, low thickness, very fast drying, able to start drying even at low temperatures.

**FIELDS OF USE:** Primer recommended mainly for open surfaces of iron, steel, stainless steel, copper, galvanized and aluminum, sandwich panel, metal structures, equipment, etc.. It is also recommended for partial repairs of open surfaces, since it can be applied over remains of other compatible primers and paints, properly prepared, well adhered to the base and in good condition. Compatible and recommended for metal surfaces that can be finished with 1 and 2 component Fakolith paints and coatings. For use as an initial waterborne epoxy primer in anti-corrosion systems based on ISO 12944. Used as a regulating and adherence primer it can be applied on consistent mineral bases and other compatible surfaces.

**STANDARD COLOR:** Light Gray RAL 7035 (White, on request)

**APPLICABLE** by brush, roller, Airmix or Airless.

**AVERAGE YIELD:** It is variable, depending on the recommended layer thickness, the texture and absorption of the surface and application method, and its average yield can range between 6.25 and 12.5 m<sup>2</sup> per liter.

- For a thickness of 40 µm dry - 80 ml/m<sup>2</sup> are consumed - yielding 12.5 m<sup>2</sup>/L.
- For a dry thickness of 80 µm - 160 ml/m<sup>2</sup> - yielding 6.25 m<sup>2</sup>/L.

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

### 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) b N/mm<sup>2</sup>. (Without traffic loads) and:  $\geq 2,0$  (1,5) b N/mm<sup>2</sup> (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  $\mu\text{m}$  - consumption is 265 gr/m<sup>2</sup> - a yield of 3,77 m<sup>2</sup>/kg.
- Dry thickness = Wet thickness: 300  $\mu\text{m}$  - consumption is 395 gr/m<sup>2</sup> - a yield of 2,53 m<sup>2</sup>/kg.
- Dry thickness = Wet thickness: 350  $\mu\text{m}$  - consumption is 463 gr/m<sup>2</sup> - a yield of 2,16 m<sup>2</sup>/kg.
- Dry thickness = Wet thickness: 400  $\mu\text{m}$  - consumption is 530 gr/m<sup>2</sup> - a yield of 1,89 m<sup>2</sup>/kg.
- Dry thickness = Wet thickness: 500  $\mu\text{m}$  - consumption is 660 gr/m<sup>2</sup> - a yield of 1,51 m<sup>2</sup>/kg.
- Dry thickness = Wet thickness: 700  $\mu\text{m}$  - consumption is 925 gr/m<sup>2</sup> - a yield of 1,08 m<sup>2</sup>/kg.

**VARNISH AVERAGE YIELD:**

- Dry thickness = Wet thickness: 50  $\mu\text{m}$  - consumption is 51,5 gr/m<sup>2</sup> - a yield of 19,4 m<sup>2</sup>/kg.
- Dry thickness = Wet thickness: 75  $\mu\text{m}$  - consumption is 77,3 gr/m<sup>2</sup> - a yield of 12,9 m<sup>2</sup>/kg.
- Dry thickness = Wet thickness: 100  $\mu\text{m}$  - consumption is 103gr/m<sup>2</sup> - a yield of 9,7 m<sup>2</sup>/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 - DISPAINT FoodGrade

**PROPERTIES:** it is a 1-component aqueous dispersion satin-matt acrylic enamel, thin film and fast air drying, widely certified and suitable for direct and indirect contact with food, according to the European Regulation EU 10/2011 and American FDA 21 CFR 175.300, and its subsequent modifications. Formulated with modified acrylic copolymers, free of Bisphenol A (BPA free), APEO, formaldehyde, phthalates, heavy metals, etc. Dispaint FoodGrade has excellent finish and adhesion on multiple surfaces, with an adequate balance between physicochemical resistance and impermeability in its category. It has no tacking or blocking after curing, class 1 wet scrub resistance, low Voc, and low odor. It is not dangerous goods neither for its use nor for road, sea or air transport. It is a multipurpose aqueous food enamel, easy to apply, renew and maintain. **With Declaration of Conformity, Performance and CE Marking.**

**BIOFILMSTOP SANITARY TECHNOLOGY (Article treated BPR Art.3):** DISPAINT FoodGrade is a treated paint (BPR Art

3 and 58) with BioFilmStop Foodgrade antimicrobial Technology. With effectiveness  $\geq 99,9\%$  and tested in several official R&D&I projects and external reference laboratories, under various regulations ASTM D2574-06, ISO 846, ISO 22196, ISO 15457:201, ISO 21702, etc., against bacteria and biofilm (Staphylococcus aureus MRSA, Listeria monocytogenes, Salmonella enteritidis, Salmonella enterica, Pseudomonas aureuginosa, Legionella pneumophila...) and viruses (Human Coronavirus, Feline Coronavirus). The paints and coatings of Fakolith's sanitary range contribute to comply positively with CE 852/2004, are manufactured under HACCP and Good Manufacturing Practices (GMP) according to CE 2023/2006, improving hygiene and food and sanitary safety of surfaces and environments. FAKOLITH Sanitary Registration: RGSEAA ES-39.005259/T and ROESP E-0043-E.

**MAIN USE:** particularly suitable for the protection and finishing of surfaces of repeated use, and up to medium physicochemical stress, in direct, indirect or occasional contact with food, such as open surfaces of walls, ceilings, skirting boards, installations and various objects. Excellent general adhesion in its category on multiple surfaces, such as surfaces with previous coatings in good condition, 3D printing parts, various plastics, primed metal alloys, wood surfaces and derivatives, mineral surfaces and dry construction gypsum panels, sandwich panels, etc. Mainly used in food and auxiliary industry, health sectors, hospitals, clinics, in industry, civil works and public and private buildings in general.

**PROPERTIES:** Dispaint FoodGrade is an enamel with exceptional hardness and adhesion on multiple surfaces. Resistant to weathering, carbonation and alkalinity of the base. Good average resistance to most of the disinfectants and cleaners in use solution, according to DIN EN ISO 4628-2: 2004-01 (Higher resistance to acid solutions than to basic ones). **Tests CE marked** (Tecnalia) UNE-DIN EN ISO 1504-2:2005 after 7 days of curing applying 2 coats of 162.5 gr:

- Abrasion resistance. Weight loss= 40 mg.
- Permeability to CO<sub>2</sub> Class III Sd >50 m (223)
- Permeability to water vapor Class I Sd <5 m (2.07)
- Liquid water permeability  $w < 0.1 \text{ Kg/m}^2\text{-h}$  0.5 (0.01) Class III
- Tensile strength for rigid systems with traffic loads =3.55 N/mm<sup>2</sup>.

**APPLICATION:** Applicable by brush, roller, Airless or Air-Mix, anilox rollers, industrial spraying.

**SERIAL COLORS:** White. Consult availability, price and minimum quantity for other colors of the FoodGrade chart or other RAL colors).

**AVERAGE YIELD:** DISPAINT FOODGRADE has an approximate average yield of 4-8 m<sup>2</sup>/l. in 2-3 coats. Depending on the desired finish, the texture and absorption of the base can vary considerably.

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

## 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 aureuginosa, 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:  $\geq 1.0$  (0.7) b N/mm<sup>2</sup>. (No traffic loads) and:  $\geq 2,0$  (1,5) b N/mm<sup>2</sup> (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  $\mu\text{m}$  - 100 ml/m<sup>2</sup> are consumed - yielding 10 m<sup>2</sup>/l.

-For a thickness of 100  $\mu\text{m}$  dry - 200 ml/m<sup>2</sup> are consumed - yielding 5 m<sup>2</sup>/l.

-For a dry thickness of 150  $\mu\text{m}$  - 300 ml/m<sup>2</sup> are consumed - yielding 3.3 m<sup>2</sup>/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.