



Easy alternative for painting concrete tanks for drinking water with one-component or two-component water-based FoodGrade paint certified for direct contact.

Description of the problem

Initially, it was only possible to paint drinking water tanks, concrete or equivalent, with our FoodGrade ultra-high-solid food paints. These products are sometimes more complex to apply. As a simpler alternative, Fakolith was the first company to develop a single-component waterborne paint "Disperlith FoodGrade Elastic", or a two-component waterborne epoxy "FK-450 FoodGrade", both suitable for direct contact with food and drinking water according EU 10/2011. Both references with their corresponding declaration of conformity, global migration tests, specific migrations and organoleptic tests, as well as CE marking tests for use on concrete surfaces. Although their use has certain limitations in other cases, they also have other great advantages, and one of the practical applications is their use as paints for concrete tanks that will contain drinking water, or water used in food processing and elaboration. Its advantages are clear: being water-based, it does not require solvents, and therefore, the process, as well as the requirements for protection and application equipment, are much simpler. All Fakolith FoodGrade coatings are treated with BioFilmStop Green antimicrobial food technology, which helps to inhibit the nesting of bacteria, biofilm and viruses that cause food poisoning, thus increasing food and sanitary safety.



Summary of the most common basic solution and procedure

The ideal pre-treatment to ensure maximum adhesion to the base would be the complete removal of previous layers of existing paint, with mechanical processes such as sandblasting, or equivalent, and/or chemical stripping (for example, with *Oxystrip*), until a mineral base with sufficient consistency and tensile strength. If necessary, major damages should be repaired with suitable mortars (*Elite Extreme*) and/or fillers (*FK-45 FG Plaster*).

If repainting is chosen, after testing their compatibility, we recommend at least a superficial sanding of the existing paint and checking its correct adherence by a Class 0 Cut-Cross Test. The following process will involve the adequate cleaning and drying of the base, then painting with one of the following paints from the FoodGrade range, with or without fiberglass reinforcement mesh, as appropriate:

1. SURFACE CLEANING:

· **FAKOLITH FK-12:** Apply the moisture damage cleaner, such as mold, saltpeter, biofilm, and subsequent rinsing with water to eliminate damage, and after drying leave the base ready for the next treatment.

2. SURFACE PRIMER:

· **DISPERLITH PRIMER:** Application of the fixing nano primer with high resistance to humidity, to consolidate the base and prevent the infection from regenerating from the inside. The base will be prepared for the adequate adhesion of the most suitable food-sanitary paint for each case.

3. SURFACE PAINTING:

- **Option A - DISPERLITH FOODGRADE ELASTIC:** Finishing with 3 coats of this single-component water-based FoodGrade paint, with good elasticity, fast drying, and satin finish, suitable for direct and indirect contact with food, for drinking water tanks and multiple surfaces that require a balance of elasticity, medium physical-chemical stress, and easy renovation and maintenance. It has EU 10/2011 certification and CE marking tests.
- **Option B - FAKOLITH FK-450 FOODGRADE:** If you opt for greater physical resistance, the application of 2 to 3 coats of this innovative water-based epoxy food paint is highly recommended, due to its high performance and ease of application. It has EU 10/2011 certification and CE marking tests.

Application process

1.- 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.

2.- DISPERLITH Primer

PRODUCT SUMMARY: DISPERLITH PRIMER is a water-based consolidating primer, with hybrid resins and quartz nano-spheres, ideal as a primer prior to painting with paints from the Disperlith range and dispersion paints in general.

Low Voc, fast drying, breathable and with high penetration in the base. Ideal for fixing, consolidating and bridging surfaces before painting. Can be applied on mineral bases, pladur®, bases painted with dispersion paints, mineral paints, sol-silicate, silicone resin and other paints and coatings that are deteriorated but well adhered to the base.

Highly moisture resistant primer, treated with BioFilmStop antimicrobial technology (BPR Art.3) effective against internal regeneration of bacteria, biofilm, moulds and yeasts.

MODE OF APPLICATION: Those bases that were affected by moisture and microorganisms should be pre-cleaned with the moisture damage cleaner FK-12.

After the cleaning has dried, the primer will be applied, without dilution, and according to the needs of each surface, 1 or 2 coats will be applied by brush, roller, spray or airless.

CONSUMPTION - PERFORMANCE: DISPERLITH PRIMER has a coverage of approximately 4-10 m²/l. Depending on the way of application, texture and absorption of the base coat it can vary considerably.

3.- OPTION A - DISPERLITH FoodGrade Elastic

FEATURES: Disperlith FoodGrade Elastic water-based 1-component paint or colorless varnish, certified for direct and indirect contact with food and drinking water, according to European Regulation EU 10/2011 and its subsequent amendments. Food contact paint formulated with modified acrylic copolymers, Bisphenol A free (BPA free), with good coverage, excellent balance between high impermeability, elasticity and good adhesion, low odor, fast drying, applicable from low temperatures (>3°C). It has EC marking tests that confirms an excellent physicochemical resistance in its category.

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.

FIELDS OF USE: Especially suitable for the protection and painting of surfaces up to medium physical-chemical stress, in direct, indirect or occasional contact with food, water for food processing and drinking water. As a finish for open surfaces such as walls, ceilings at indoors and outdoors, on objects and other surfaces, and in immersion in concrete tanks for drinking water.

Mainly used in the food industry but also in the health sector, hospitals, clinics, industry, civil engineering, and public and private buildings in general. Certified for clean rooms.

SERIAL COLORS: Standard colours: Colorless varnish, White RAL 9003, Light Ivory RAL 1015, Oxide Red RAL 3009, Grey RAL 7004, Green RAL 6002, Blue RAL 5012, Yellow RAL 1003 and Black RAL 9017 (Check availability, price and minimum quantity for other FoodGrade Color card or other RAL colours).

APPLY with brush, roller, Airless or Air-Mix.

AVERAGE YIELD: DISPERLITH FoodGrade Elastic has an approximate yield of 3-5 m²/l. in 2 coats for painting and up to 6-19 m²/l. for varnishing. Depending on the texture and absorption of the base it can vary sensibly.

Product for professional use. For a correct application follow the instructions in the technical sheets, application guides and safety data sheets. In case of doubt, consult our technical service.

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

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.