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Painting or renewal of sandwich panel, metals, lacquered metals and similar with certified foodgrade paint or enamel for direct and indirect contact, in the food industry and health sectors.

Description of the problem

Without a doubt, sandwich panels, usually lacquered metal, or synthetic, are increasingly used in the food industry, health sectors and other industrial sectors, whether in cold rooms, clean rooms, production rooms, warehouses, technical rooms, etc. Although sandwich panels initially come factory lacquered, mainly in white, with their use they receive knocks, corrosion due to contact with humidity, wear and tear due to chemical aggression... deteriorating with the passage of time, so it is advisable to renew them properly. But how do we renew the paint or enamel of a sandwich panel? Fakolith has extensive experience in this regard. The first thing to do is to clean the panel properly and remove the rust, and then apply the appropriate anti-corrosion primer, either in general or at least on the corrosion points. Finally, the panel is finished with a food grade paint or enamel certified for direct and indirect contact with food and beverages. All Fakolith FoodGrade 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, thus increasing food and health safety. This solution is generally applicable to other metal elements, such as beams, structures, etc...

IMPORTANT NOTE: *If the surfaces to be painted have a significant risk of mould growth on indirect contact surfaces, then we recommend that you assess whether it is more appropriate to use our other range of* Hygienic Coatings *that are highly resistant to mould, bacteria, biofilm and other pathogenic microorganisms. If in doubt, please consult our technical team.*

Summary of the most common basic solution and procedure

1. SURFACE CLEANING:

· FAKOLITH FK-111: Application of the descaler and cleaner of grease, pollution, industrial dirt and biofilm matrix, and subsequent rinsing with water to remove the dirt. After drying, the base is ready for the next treatment. Alternatively, or if necessary, you can also use BIOFILMSTOP Cleaner fungicide, bactericide and virucide disinfectant with HA Sanitary Registration, for the disinfection and removal of biofilm, bacteria, fungi and viruses.

· FAKOLITH FK-9 GEL: Surface sanding of the overall surface to create texture, insisting on corrosion areas. Application of the oxide cleaner on the corrosion points of the panel. Once the oxidation has been eliminated, clean these surfaces with a cloth with foodgrade solvent FK-45 OEM Solvent or equivalent.

2. SURFACE PRIMER:

· FAKOLITH FK-44 POX: Application of the anticorrosive epoxy primer, either on the entire panel or only on the corrosion points, as appropriate, and finally allow to dry properly before proceeding with the final finish.

3. SURFACE PAINTING:

Final painting with 2-3 coats of FoodGrade food paint or enamel most suitable for the case:

· **Option A -** 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 B -** FAKOLITH FK-45 FOODGRADE: Especially for such situations or on skirting boards and high performance surfaces, this high solids, high gloss food grade epoxy paint, with EU 10/2011 certification and CE marking tests, is often the most widely used choice for high performance surfaces, and also because it is an epoxy paint available in white. It takes more than 10°C to dry. Alternatively, you can also paint with FK-100 FoodGrade (available in FoodGrade colorcard, except white), which is also FDA 21 CFR 175.300 certified, or if you prefer a water-based food grade epoxy paint, FK-450 FoodGrade is also available.

Application process

1.- 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/m^2, although depending on the extent of the contamination this may vary considerably.

2.- FK-9 Gel

DESCRIPTION AND MAIN USE: FAKOLITH FK-9 Gel is a cleaner for the removal of rust from metals and lime-descaler, for use on surfaces resistant to acidic solutions. The gel format makes for easy application, avoids dripping and optimises consumption. 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.

HOW TO APPLY: Carefully protect all surfaces that are not to be treated from splashing. Generally speaking FK-9 Gel is applied abundantly, using synthetic brushes, to the rusty area of the metal and left to soak in until the rust is seen to have been removed. The product can be scrubbed in using a brush with stiff plastic bristles, working particularly on the worst affected areas. The layer of gel, along with the remains of the rust or limescale, must be cleaned off before it can dry, and the surface washed down and thoroughly rinsed using pressurised water. If so required the operation can be repeated. After rinsing with water we recommend that you dry the metallic surfaces

using a solvent impregnated rag, and then either prime it or duly protect it as soon as possible, given that if you do not do so the rust will rapidly reappear. If you want to eliminate limescale make sure that the base is resistant to acidic solutions and proceed as indicated above, although in this case the process will be much faster. For further details consult the specifications sheet and/or application guidelines, along with the safety sheet.

AVERAGE YIELD: FK-9 Gel provides a variable yield although, depending on the extent of the corrosion to be eliminated, this may vary considerably.

3.- 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^2 per liter.

- For a thickness of 40 µm dry - 80 ml/m^2 are consumed - yielding 12.5 m^2/l.
- For a dry thickness of 80 µm - 160 ml/m^2 - yielding 6.25 m^2/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.

4.- OPTION A - 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 ≥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 entirca, Pseudomonas aureuginosa, Legionella pnemophila...) 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 CO2 Class III Sd >50 m (223)
- Permeability to water vapor Class I Sd <5 m (2.07)
- Liquid water permeability w<0.1 Kg/m^2-h 0.5 (0.01) Class III
- Tensile strength for rigid systems with traffic loads =3.55 N/mm2.

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^2/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.

4.- OPTION B - FK-45 FoodGrade

PRODUCT SUMMARY: FK-45 FoodGrade is a 2-component heavy-duty epoxy food contact coating, paint or varnish, with very high solids content, certified for direct and indirect contact with food, according to the European regulation EU 10/2011. High performance paint, low Voc, low odor, gloss finish, with CE marking tests and excellent physicochemical resistance in its category. Especially indicated 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 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 subtillis, Pseudomonas aureginosa, Staphylococcus aureus, Salmonella enteritidis, Legionella pnemophila, 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: Following the technical indications for each system, FK-45 FoodGrade is recommended for direct, indirect and occasional contact with food on open surfaces of walls, ceilings, skirting boards, floors, metal structures, machinery and equipment, cold and freezing rooms, food warehouses, panels, food transport, objects, etc., always indoors. In the food industry, health sectors, hospitals and clinics, industry, civil works, and public and private buildings in general. **Compatible with most consistent surfaces:** Tensile strength EN ISO 4624:2016 Rigid Systems: ≥1,0 (0,7) b N/mm2. (Without traffic loads) and: ≥2,0 (1,5) b N/mm2 (With traffic loads). Surfaces with the adequate roughness Rz>50, both in mineral bases, as well as in duly sandblasted (SA 2,5) or primed metals.

Lacquered panels and previous compatible paints and/or primers, well bonded and resistant to the ISO 2409:2007-Class 0-1 cut-cross test.

For the painting and interior renovation of food, beverage and drinking water tanks and pipes, use from now on the most modern, resistant and certified version "FK-100 FoodGrade", the only one that simultaneously complies with EU and FDA regulations.

STANDARD COLORS: Transparent varnish, White RAL 9003, Light Ivory RAL 1015, Oxide Red RAL 3009 and Grey RAL 7004, Green RAL 6002, Blue RAL 5012, Yellow RAL 1003 and Black RAL 9017 Consult availability, price and minimum quantity of colors FoodGrade chart or other RAL colors.

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

With Declaration of Compliance, Performance and CE marking.

AVERAGE YIELD PAINT: according to recommended coat thickness, depending on use of FK-45 FoodGrade

- Dry thickness 200 µm = wet 302 gr/m² (222 ml/m²) - yield 3,31 m²/kg (4,5 m²/L).
- Dry thickness 300 µm = wet 453 gr/m² (333 ml/m²)- yield of 2,21 m²/kg (3,00 m²/L).
- Dry thickness 350µm = wet 528 gr/m² (389 ml/m²)- yield of 1,90 m²/kg (2,57 m²/L).
- Dry thickness 400 µm = wet 604 gr/m² (444 ml/m²)- yield of 1,66 m²/kg (2,25 m²/L).

AVERAGE YIELD TRANSPARENT VARNISH:

- Dry thickness 50 µm = wet 58 gr/m² (53 ml/m²)- yield of 17,27 m²/kg (18,87 m²/L).
- Dry thickness 75 µm = wet 87 gr/m² (79 ml/m²)- yield of 11,49 m²/kg (12,66 m²/L).
- Dry thickness 100 µm = wet 116 gr/m² (105 ml/m²)- yield of 8,63 m²/kg (9,52 m²/L).

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.

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".