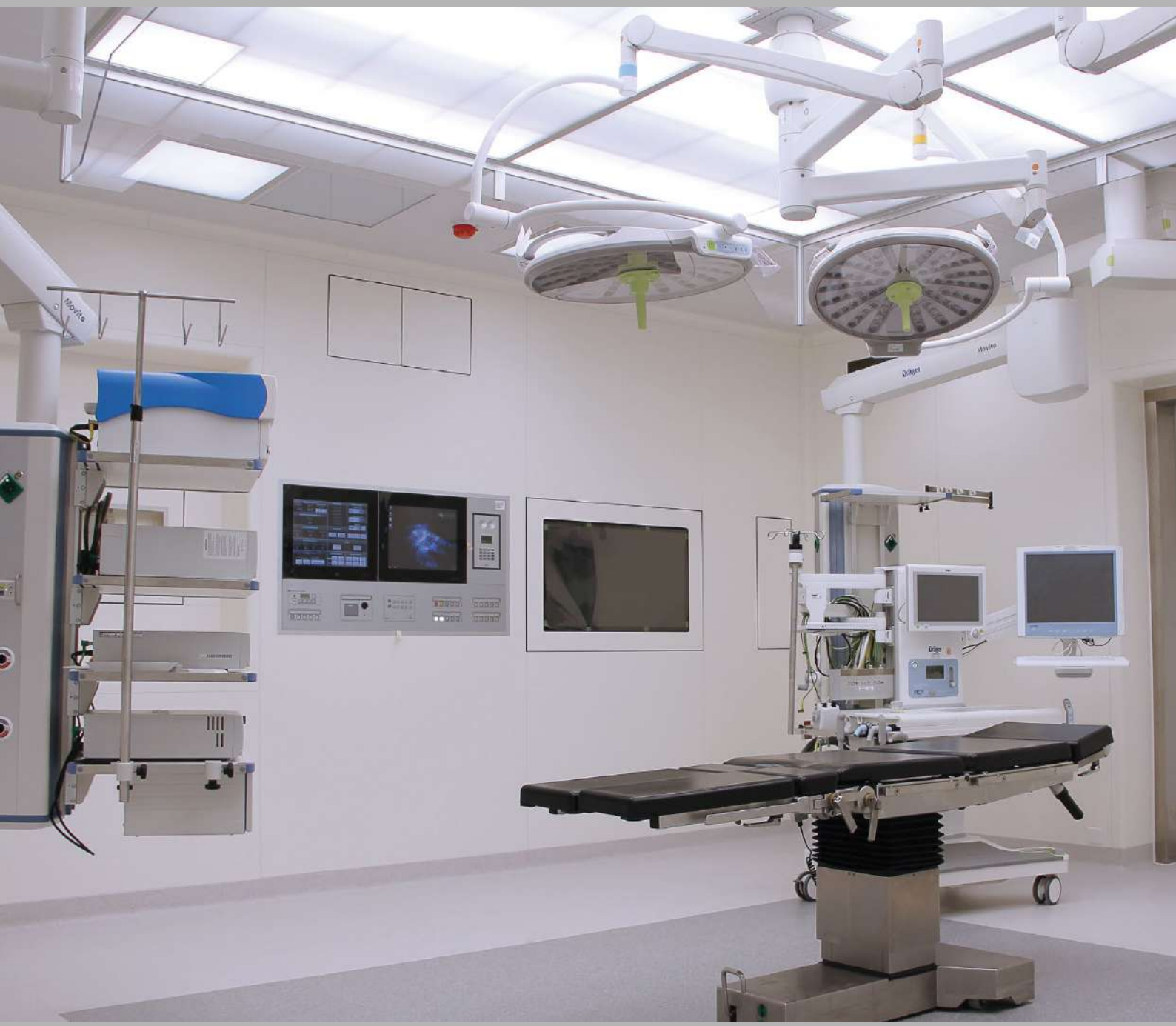
SFIBRAL

FIBER CEMENT PANELS



Resistance to chemicals

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SFIBRAL GAMA | SFIBRAL SKALA

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Technical Leaflet

Resistance to chemicals

Thanks to their excellent decorative and physical properties, SFIBRAL GAMA and SFIBRAL SKALA products have a wide range of applications. By virtue of their robust surface, these products also provide high resistance to most chemicals. This leaflet contains information on the resistance of SFIBRAL GAMA and SFIBRAL SKALA to a range of substances, including their application in laboratories, medical facilities, production sites, and the food industry.

Normative Properties of the Surface

The EN 438 Standard defines special requirements regarding the surface resistance of decorative laminates. This includes testing the laminate surface against various substances for resistance to stains. The test examines how the surface is affected by substances to which the laminate may be exposed during daily use. The laminate surface is brought into direct contact with a range of substances. The exposure times and conditions for the contact between each substance and the specimen are prescribed. At the end of the respective exposure time, the specimens are washed and examined for permanent surface changes.

EN 438 defines the following three groups:

Group 1

Testing is conducted with an exposure time of 16 hours at ambient temperature. SFIBRAL GAMA and SFIBRAL SKALA achieve a rating of 5 = no visible changes.

This group includes the following substances:

- Acetone
- Other organic solvents
- Toothpaste
- Hand cream
- Urine
- Alcoholic beverages
- Natural fruit and vegetable juices
- Lemonade and fruit beverages
- Meat products and sausage
- Animal and plant fats and oils
- Water
- Yeast suspension in water
- Salt (NaCl) solutions
- Mustard
- Lyes, soap solutions
- Commercial disinfectants
- Citric acid (10% solution)
- Stain or paint removers based on organic solvents
- Cleaning solution consisting of: 23% dodecylbenzene sulfonate, 10% alkyl aryl polyglycol ether, 67% water

Group 2

Testing is conducted with an exposure time of 16 hours at ambient temperature. Coffee, tea and milk are tested at a temperature of approximately 80°. SFIBRAL GAMA and SFIBRAL SKALA achieve a rating of 5 = no visible changes.

This group includes the following substances:

- Coffee (120 g coffee per litre of water)
- Black tea (9 g tea per litre of water)
- Milk (all types)
- Cola beverages
- Wine vinegar
- Hydrogen peroxide (3% solution)
- Nail varnish
- Nail varnish remover
- Lipstick
- Watercolours
- Laundry marking inks
- Ballpoint inks
- Alkaline cleaning agents (diluted to 10% concentration with water)
- Ammonia (10% solution of commercial concentrate)

Group 3

Testing is conducted with an exposure time of 10 minutes at ambient temperature. SFIBRAL GAMA and SFIBRAL SKALA achieve a rating of 4 = a slight change in gloss level and/or colour, only visible from certain viewing angles.

This group includes the following substances:

- Sodium hydroxide (25% solution)
- Hydrogen peroxide (30% solution)
- Concentrated vinegar (30% acetic acid)
- Bleach and sanitary cleaners containing bleach
- Cleaning agents based on hydrochloric acid (≤ 3 % HCl)
- Acid-based metal cleaners
- Carbon black suspension in paraffin oil
- Hair colouring and bleaching agents
- Iodine
- Boric acid
- Lacquers and adhesives (except fast curing materials)
- Amidosulphuric acid descaling agents (< 10% solution).
- Mercurochrome (2.7-dibromo-4-hydroxymercur-fluoresein, merbromin disodium salt)

No Surface Change

Additional substances, apart from the Group 1 and 2 substances and reagents listed in the Standard, that cause no change to SFIBRAL GAMA and SFIBRAL SKALA with melamine resin surface, even after an extended

exposure time.

- Activated charcoal
- Aluminium chloride
- Aluminium sulphate
- Formic acid 10%
- Ammonium chloride
- Ammonium sulphate
- Ammonium thiocyanate
- Amyl acetate (acetic acid pentyl ester)
- Aniline
- Arabinose
- Ascorbic acid
- Asparagine
- Asparic acid
- p-aminoacetophenone
- Cocaine
- Caffeine
- Cyclohexane
- Dextrose
- Digitonin
- Dimethyl formamide
- Dulcite
- Soil
- Acetic acid
- Ethanol
- Ether
- Ethyl acetate
- Formaldehyde
- Fructose
- Animal feed
- Galactose
- Gelatine
- Plaster
- Glucose
- Barium chloride
- Barium sulphate
- Lead acetate
- Lead nitrate
- Blood
- Butyl acetate
- Cadmium acetate
- Cadmium sulphate
- Calcium carbonate (chalk)
- Calcium chloride
- Calcium nitrate
- Calcium oxide
- Quinine
- Cholesterol
- Copper sulphate
- Lactose
- Laevulose
- Lithium carbonate
- Magnesium carbonate
- Magnesium chloride
- Magnesium sulphate
- Maltose
- Mannitol
- Mannose
- Meso-inositol
- Lactic acid 85%
- Lactose
- Foodstuffs
- Sodium acetate
- Sodium carbonate
- Sodium chloride
- Sodium citrate
- Sodium diethyl barbiturate

- Glycerine
- Glycocoll
- Glycol (ethylene glycol)
- Uric acid
- Urea solution
- Heparin
- Hexane
- Hydroquinone
- Inositol (=cyclohexane hexol)
- Isopropanol
- Caustic potash solution 10%
- Potassium aluminium sulphate
- Potassium bromate
- Potassium bromide
- Potassium carbonate
- Potassium chloride
- Potassium hexacyanoferrate
- Potassium iodate
- Potassium sodium tartrate
- Potassium nitrate
- Potassium sulphate
- Potassium tartrate
- Potato starch
- Casein
- Garlic
- Common salt
- Caffeine
- Charcoal
- Cosmetics
- Salicylaldehyde
- Salicylic acid
- Saponin
- Soap
- Sorbitol
- Sodium hydrogen carbonate (sodium bicarbonate)
- Sodium hydrogen sulphate
- Sodium hyposulphite
- Sodium nitrate
- Sodium phosphate
- Sodium silicate
- Sodium sulphate
- Sodium sulphide
- Sodium sulphite
- Sodium tartrate
- Sodium thiosulphate
- Sodium hydroxide solution 10%
- Nickel sulphate
- Nicotine
- Oleic acid
- Paraffin
- Paraffin oil
- Phenol phthalein
- Polishes (creams and waxes)
- 1,2-propelene glycol
- Quicksilver
- Raffinose (melitose)
- Common household cleaners
- Rhamnose
- Rochelle salt
- Cane sugar
- Soot
- Saccharose (sucrose)
- Toluol
- Clay
- Dextrose
- Trehalose
- Trypsin

- Starch
- Stearic acid
- Talcum
- Tannin
- Tetrahydrofuran
- Tetralin
- Thiocarbamide
- Tryptophan
- Urease
- Vanillin
- Vaseline
- Tartaric acid
- Zinc chloride
- Zinc sulphate

No Surface Change after Brief Exposure Time

In addition to the Group 3 substances listed in the Standard, the surfaces of SFIBRAL GAMA and SFIBRAL SKALA can also be exposed briefly to the substances listed below without resulting in changes. When these substances are spilled, they should be wiped quickly – within 10 to 15 minutes – using a damp cloth, and the surface should then be dried.

- Aniline dyes
- Ammonium hydrogen sulphate
- Boric acid
- Caustic potash solution 50%
- Potassium chromate
- Potassium dichromate
- Potassium hydrogen sulphate
- Potassium iodide
- Potassium permanganate
- Lithium hydroxide 10 %
- Sodium hydrogen sulphate
- Sodium hydroxide solution 48%
- Sodium thiosulphate
- Oxalic acid
- Silver nitrate

Marked Surface Change

The substances listed below lead to surface changes and/or the destruction of the laminate, even after a very brief exposure time.

- Nitric acid 10%
- Hydrochloric acid up to 10%
- Sulphuric acid up to 10%
- Adhesive (chemically hardening)

Aggressive Gases

Frequent exposure to aggressive gases, e.g. bromine, chlorine, nitrous gases and sulphur oxide, leads to surface changes of SFIBRAL GAMA and SFIBRAL SKALA.

The surfaces of SFIBRAL GAMA and SFIBRAL SKALA must be cleaned regularly during the period of use. More detailed information can be found in our leaflet ”cleaning and use instructions“.

Provisional note:

This technical leaflet has been carefully drawn up to the best of our knowledge. The information provided is based on practical experience, and in-house testing and reflects our current level of knowledge. It is intended for information only and does not constitute a guarantee in terms of product properties or its suitability for specific applications. We accept no liability for any mistakes, errors in standards, or printing errors. In addition, technical modifications may result from the continuous development of SFIBRAL products and changes to standards and public law documents. Therefore, the contents of this technical leaflet should not be considered instructions for use or legally binding.