

Freestyle® 12mm Surfaces

Freestyle® 12mm Surfaces sheet material is manufactured from a polyester/ acrylic hybrid resin, pigments for colour and alumina trihydrate as the filler. Sheets are made using a batch sheet cast forming line.

Freestyle 12mm Surfaces can be fabricated using standard wood working equipment.



APPLICATIONS

Freestyle 12mm Surfaces are suitable for many interior surfaces or interior cladding applications. It is ideal for kitchen and bathroom benchtops, counters, reception desks, wall and column cladding, commercial bars and many other vertical and horizontal applications.

Freestyle 12mm Surfaces comes in 5 colour ranges:

- Solid colours
- Speckle colours
- Special colours
- Mica colours
- Artifacts

(Please refer to the Freestyle 12mm Surfaces brochure for a complete range of colours and availabilities.)

Freestyle 12mm Surfaces construction is non-porous with consistent colour throughout the sheet. It cannot delaminate, is UV stable and resists many stains. It has excellent hygienic performance.

SUPPLY AND WARRANTY

Freestyle 12mm Surfaces is supplied only through authorised fabricators. The product is covered by a 15 year limited warranty by Laminex when fabricated and installed according to the Installation Manual.

PROPERTY SPECIFICATIONS

Property	Test Method	Units	Typical Results
Specific Gravity	ASTM D792	g/cm ³	1.7
Flexural Strength	ASTM D790	MPa	42
Flexural Modulus	ASTM D790	GPa	9.5
Water Absorption	ASTM D570	% wt	<0.13%
Rockwell M Hardness	ASTM D785	Rockwell units	92
Thermal Expansion	ASTM D696	mm/mm°C	3.24x10 ⁻⁵
UV Stability	NEMA LD3		slight effect
Wear and Cleanability	ANSI Z124.6	Visual rating	3-4
Gloss (60° Gardner)	ANSI Z124	Gloss units	5 - 20
Impact Resistance	NEMA LD3	Drop ht. = 2.4m Ball wt. = 224g	no fracture with backer
Boiling Water			
Surface Resistance	NEMA LD3	Visual rating	very slight effect
High Temperature Resistance	NEMA LD3	Visual rating	Excellent
Colour consistency	L.a.b	Units	ΔE < 1.0
Stain Resistance	ANSI Z124.6	Visual rating	passes
Stain Resistance	ANSI Z124.3	Visual rating	passes
Fungi & Bacteria	ANSI Z124		Excellent

FREESTYLE CHEMICAL COMPOSITION

Material	Remark
MMA Methyl Methacrylate	Resin
PET Polyester	Resin
Alumina Trihydrate	Filler
UV Absorbers, Cross Linking Agents, Stabilisers, Curing Agents, Etc	Additives

FREESTYLE ADHESIVE CHEMICAL COMPOSITION

Base Component	Remark
	MMA Methyl Methacrylate
	LMA (Lauryl Methacrylate)
	Fillers & Additives
	SBS Block Rubber
Hardner	DBP (Di Butyl Phthalate)
	Benzoyl peroxide

FIRE TESTS

(Typically achieved when tested to AS/NZS 1530.3)

Indices	Result	Range
Ignitability	9	0-20
Spread of Flame	0	0-10
Heat Evolved	1	0-10
Smoke Developed	4	0-10

Cone Calorimeter AS/NZS 3837 (Irradiance of 50kW/m²)

Classification	Result	Unit/Range
Group Number	3	1-3
Average Specific Extinction Area	117.8	m ² / kg
Average Heat Release Rate	63.9	kW/m ²

Note:

Test Results may vary due to colour and particle size.

PRODUCT RANGE

- Standard sheet size:
Length = 3683 -0/+10 mm
Width = 762 -0/+5 mm.
- Standard thickness: 12 mm - 0/+ 0.5mm

WHEN SPECIFYING SHEETS

Ask for: Freestyle 12mm Surfaces from Laminex in colour:

FABRICATION

The fabrication and installation of all components using Freestyle Surfaces should be carried out by an authorised Freestyle Surfaces Fabricator:

LIMITATIONS

Freestyle Surfaces withstand normal wear and tear. Here are some guidelines to assist in Freestyle Surfaces application and use:

- Avoid leaving hot appliances or utensils in direct contact with Freestyle Surfaces; use a trivet for hot pans or utensils to protect the surface.
- Freestyle Surfaces are intended for interior use only.

Freestyle Surfaces have good resistance to many chemicals. However, due to the wide variety of chemical types and

concentrations, it is recommended to test on a sample piece of Freestyle Surfaces to confirm the suitability for the application.

Note: Test results may vary due to colour and exposure time. It is highly recommended that all spills are removed as quickly as possible to reduce staining or damage of the surface.

- To minimise scratching, refrain from sliding hard or heavy objects across the bench top surface. Scratching on dark or vibrant coloured surfaces will be more visible than on lighter colours and will require more ongoing maintenance. Refer to the Maintenance section.
- It is not possible to create a seamless join when fabricating Mica colours due to the randomness of the design.
- Do not allow dry ice to come into contact with Freestyle Surfaces.**
- Do not cut directly on Freestyle Surfaces.**

MAINTENANCE AND CLEANING GUIDELINES

LEVEL 1

Daily cleaning should use a sponge or microfiber cloth with soapy water. This technique will not alter the surface finish.

LEVEL 2

For more thorough cleaning and removing stubborn stains, consider using baking soda, sugar soap, methylated spirits, mineral turpentine/white spirit or eucalyptus oil. This technique should not alter the surface finish unless very aggressive scrubbing action is applied that could alter the gloss and appearance of the treated area.

LEVEL 3

If removing stains using the above cleaning agents is unsuccessful, abrasive domestic cleaners in cream or powder form, or a wet Scotchbrite pad, may be used. However, this cleaning technique is likely to produce micro scratching, resulting in changes to the surface appearance and gloss levels of dark and

vibrant colours. The effects of this cleaning technique need to be blended into the surrounding area to maintain a uniform appearance.

LEVEL 4

For more severe stains, burns, scratches or large chips, the surface may be able to be refurbished by a series of sanding and polishing techniques. For this, an authorised Freestyle Surfaces Fabricator should be contacted. The final appearance after this treatment will be a return to the original smooth satin finish.

Should further information on Freestyle Surfaces be required, contact Laminex on 132 136 from anywhere in Australia for fabricator, display and general advice.

FOOD SERVICE COUNTERTOPS Bain Marie

Food service countertops will require different design, fabrication and installation techniques due to the Freestyle Surfaces bench top's possible exposure to greater temperature stresses than the normal residential installation.

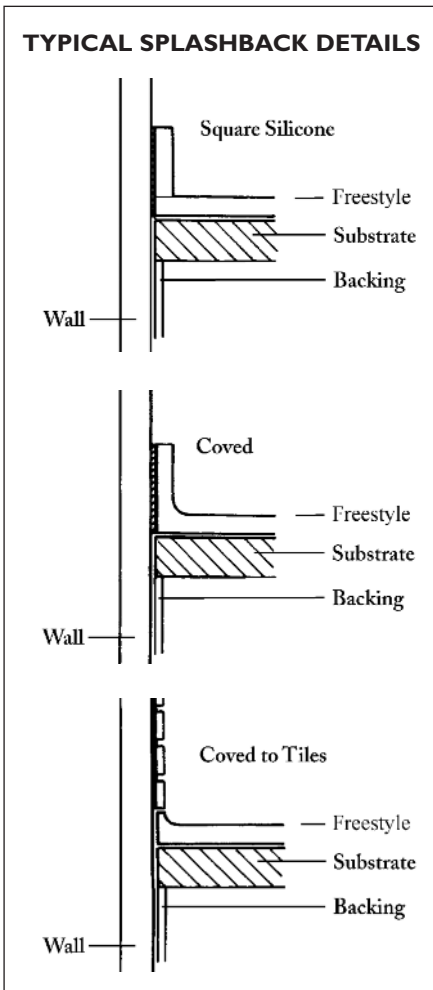
It is a requirement of the manufacturer of the stainless steel tank equipment to manufacture all hot tank sections with installed double walls.

SPLASHBACKS

Freestyle Surfaces can be fabricated to provide a low splashback that delivers an aesthetically pleasing and functional wall to bench top junction behind sinks, vanity units, bars etc.

This material is not suitable for installation behind cooktops, barbecue surrounds or service areas that require non-flammable ratings.

The material is suitable for installations where the exposure temperature does not exceed 80°C.



FREESTYLE SURFACES CHEMICAL AND STAIN RESISTANCE

Freestyle is a hybrid polyester/acrylic solid surface product with a high level of Alumina Trihydrate content as a filler, which provides superior heat stability and resistance to stains and chemicals. The exposure time to chemicals will have a direct effect on ease of removal. Exposure to harsh chemicals should be avoided at all times. In case of surface contamination, quickly wash affected area. Refer to the Maintenance and Cleaning Guidelines.

The following table shows the chemical resistance of Freestyle Surfaces grouped by colour. Each chemical or stain agent was tested for 24 hours exposure under a watch glass to minimise evaporation and maintain the correct stated concentration. After the exposure time, the test area was washed with water and methylated spirits and wiped clean with a soft cloth, then graded according to the following classifications:

Excellent	No visible change of colour/gloss/corrosion or damage on the surface
Very Good	Very Slight change of gloss and/or colour only visible at certain viewing angles
Good	Slight change of gloss and/or colour
Fair	Moderate change of gloss and/or colour
Failure	Corrosion/damage on surface

For resistance to other chemicals not listed below, it is recommended to test on a sample piece of Freestyle Surfaces to confirm the suitability for the application.

Chemicals	Freestyle		
	White or Light colour	Mid-Range colour	Intense or Dark colour
Acids			
Acetic Acid (98%)	Fair	Excellent	Very good
Acid Dichromate (5%)	Very good	Excellent	Excellent
Chromic Acid (60%)	Failure	Failure	Fair
Formic Acid (90%)	Failure	Failure	Fair
Hydrochloric Acid (32%)	Excellent	Fair	Fair
Hydrochloric Acid (10%)	Excellent	Very good	Fair
Nitric Acid (20%)	Failure	Failure	Excellent
Nitric Acid (30%)	Failure	Failure	Failure
Nitric Acid (65%)	Failure	Failure	Failure
Nitric Acid (70%)	Failure	Failure	Failure
Nitric Acid 65% : Hydrochloric Acid 32% (1:3)	Failure	Failure	Failure
Perchloric Acid (60%)	Excellent	Excellent	Fair
Phosphoric Acid (85%)	Excellent	Very good	Fair
Sulphuric Acid (25%)	Excellent	Fair	Fair
Sulphuric Acid (33%)	Excellent	Fair	Fair
Sulphuric Acid (77%)	Very good	Fair	Fair
Sulphuric Acid (85%)	Failure	Failure	Failure
Sulphuric Acid (95-98%)	Failure	Failure	Failure
Sulphuric Acid 77% : Nitric Acid 70% (1:1)	Failure	Failure	Fair
Sulphuric Acid 85% : Nitric Acid 70% (1:1)	Failure	Failure	Failure

SOLID SURFACE

Chemicals	Freestyle		
	White or Light colour	Mid-Range colour	Intense or Dark colour
Bases			
Ammonium Hydroxide (28%)	Excellent	Excellent	Excellent
Sodium Hydroxide (10%)	Excellent	Very good	Fair
Sodium Hydroxide (20%)	Very good	Fair	Fair
Sodium Hydroxide (40%)	Fair	Fair	Fair
Sodium Hydroxide (solid - mini pearl)	Fair	Fair	Fair
Biological Stains			
Aniline Blue (1%)	Very good	Very good	Excellent
Basic Fuchsin (0.5%)	Fair	Fair	Very good
Carbol Fuchsin (1%)	Fair	Fair	Fair
Azure Eosin Methylene Blue (1%)	Fair	Fair	Fair
Eosin Y (1%)	Very good	Fair	Very good
Gentian Violet (1%)	Fair	Fair	Fair
Congo Red (1%)	Fair	Very good	Excellent
Malachite Green Oxalate (1%)	Fair	Fair	Fair
Methyl Violet (1%)	Fair	Fair	Fair
Methylene Blue (1%)	Fair	Fair	Fair
Safranin O (1%)	Fair	Fair	Fair
Sudan III (1%)	Fair	Fair	Excellent
Wright Stain (1%)	Fair	Fair	Very good
Halogens			
Iodine (0.05N)	Fair	Very good	Excellent
Iodine Crystal	Fair	Very good	Excellent
Tincture of Iodine (Betadine)	Excellent	Excellent	Excellent
Salts			
Iron (III) Chloride (10%)	Excellent	Excellent	Excellent
Copper Sulphate (10%)	Excellent	Excellent	Excellent
Potassium Iodide (10%)	Excellent	Excellent	Excellent
Potassium Permanganate (10%)	Fair	Fair	Very good
Silver Nitrate (1%)	Very good	Very good	Very good
Silver Nitrate (saturated solution)	Fair	Very good	Very good
Sodium Chloride (10%)	Excellent	Excellent	Excellent
Sodium Hypochlorite (13%)	Excellent	Excellent	Very good
Zinc Chloride (saturated solution)	Excellent	Excellent	Very good
Organic Chemicals			
Amyl Acetate	Excellent	Excellent	Very good
Dimethylformamide	Failure	Very good	Fair
Formaldehyde (37%)	Excellent	Excellent	Excellent
Petrol, unleaded	Excellent	Excellent	Very good
Hydrogen Peroxide (30%)	Excellent	Excellent	Very good
Methyl Ethyl Ketone	Excellent	Excellent	Very good
n-Butyl Acetate	Excellent	Excellent	Very good
Phenol (90%)	Failure	Failure	Failure
Xylene	Excellent	Excellent	Very good

SOLID SURFACE

Chemicals	Freestyle		
	White or Light colour	Mid-Range colour	Intense or Dark colour
Solvents			
Acetone	Excellent	Excellent	Very good
Butanol	Excellent	Excellent	Very good
Dichloromethane	Failure	Failure	Very good
Ethanol	Excellent	Excellent	Excellent
Ethyl Acetate	Excellent	Excellent	Very good
Hexane	Excellent	Excellent	Very good
Methanol	Excellent	Excellent	Excellent
Naphthalene	Excellent	Excellent	Excellent
Tetrahydrofuran	Excellent	Excellent	Very good
Toluene	Excellent	Excellent	Very good
Commercial Cleaning Agents			
Commercial cleaner (60% phosphoric and sulphamic acids)	Excellent	Very good	Fair
Commercial cleaner (30% caustic)	Excellent	Fair	Fair
Commercial cleaner (10% citric extracts)	Excellent	Excellent	Excellent
Commercial cleaner (10% surfactant)	Excellent	Excellent	Excellent
Commercial cleaner (10% ethanalamine, diethanalamine, sodium carbonate, 2-butoxyethanol)	Excellent	Excellent	Very good
Commercial cleaner (60% phosphoric and sulphamic acids)	Excellent	Excellent	Excellent
Commercial cleaner (10% quaternary ammonium compounds)	Excellent	Excellent	Excellent
Commercial cleaner (30% sodium hypochlorite)	Excellent	Excellent	Very good

Common domestic residues such as the examples listed below may be removed with water, domestic cleaners or methylated spirits. The ratings below indicate the resistance of Freestyle Surfaces to the effects of each stain agent after twenty four hours exposure.

Household Stain Agents	Freestyle		
	White or Light colour	Mid-Range colour	Intense or Dark colour
Red Wine	Excellent	Excellent	Excellent
Coffee	Excellent	Excellent	Excellent
Curry Powder	Excellent	Excellent	Excellent
Curry Paste	Excellent	Excellent	Excellent
Grape Juice	Excellent	Excellent	Excellent
Mustard	Excellent	Excellent	Excellent
Salt	Excellent	Excellent	Excellent
Sugar	Excellent	Excellent	Excellent
Vinegar	Excellent	Excellent	Excellent
Biro Ink	Very good	Excellent	Excellent
Cooking Oil	Excellent	Excellent	Excellent
Eyebrow Pencil	Very good	Excellent	Very good
Lipstick	Excellent	Excellent	Excellent
Nail Polish	Excellent	Excellent	Excellent
Shoe Polish	Very good	Excellent	Excellent
Tea	Fair	Excellent	Excellent
Whiskey	Very good	Excellent	Excellent
Crayon	Excellent	Excellent	Excellent
Hair dye	Fair	Fair	Excellent
Sorbelene (hand lotion)	Excellent	Excellent	Excellent
Pencil	Very good	Excellent	Very good
Soy Sauce	Excellent	Excellent	Excellent
Tomato Sauce	Excellent	Excellent	Excellent

Ratings of "Good" and "Fair" indicate that traces of these stains remain after mild cleaning action with water and methylated spirits. More aggressive cleaning may be required to completely remove traces of these stain agents. Please refer to the Maintenance and Cleaning Guidelines.