FUNDERMAX®

Max Resistance²

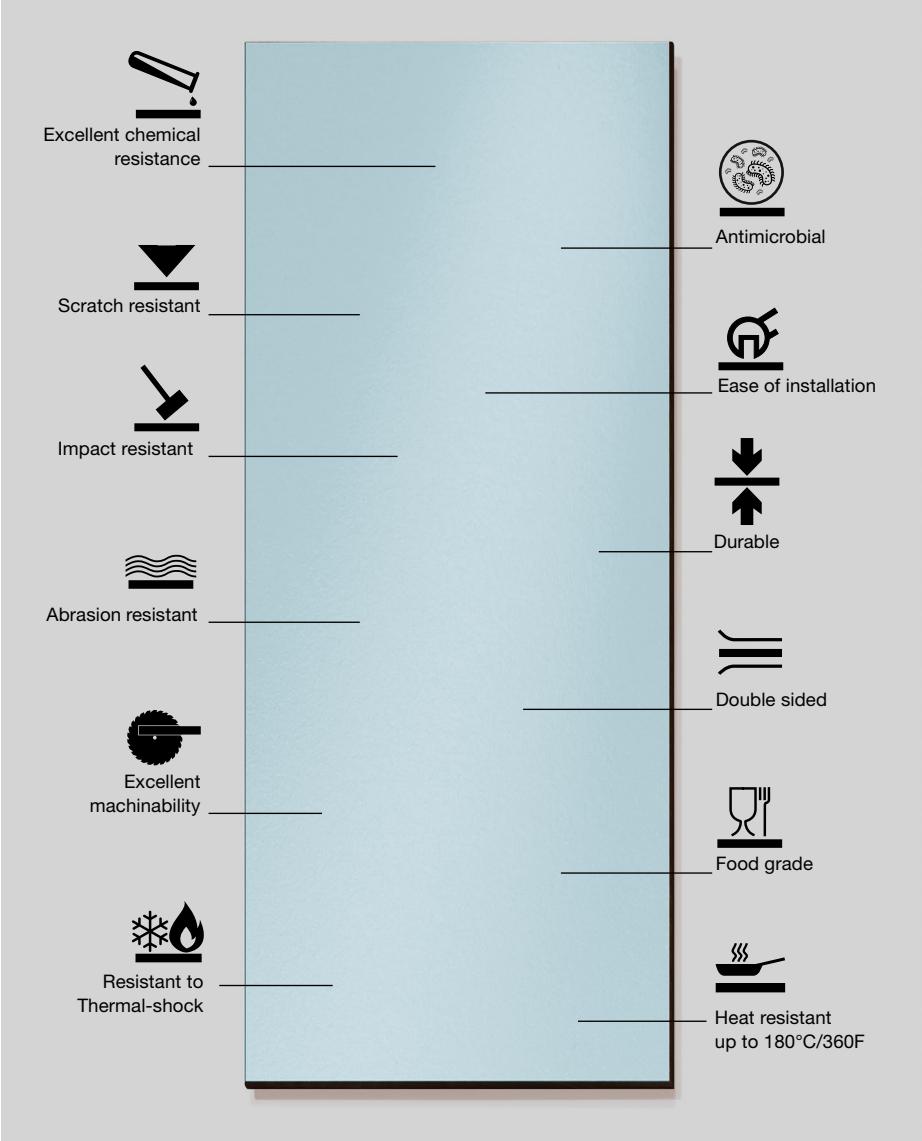
Surfaces for durable lab designs

interior

for people who create

The best in its class

Max Resistance² combines the very best intrinsic qualities: extreme resistance to the most aggressive chemicals, natural strength, long lasting durability, and an easy-to-clean surface. What's more, it opens up new design possibilities.

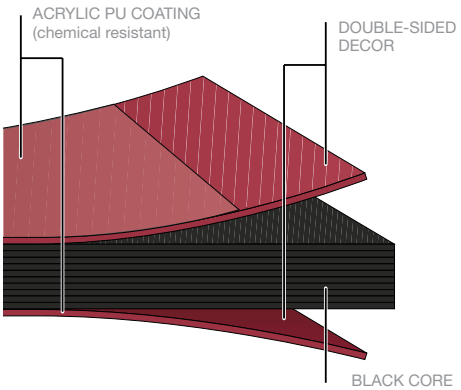


Max Resistance²

Max Resistance² is a duromer high pressure laminate (HPL), produced in laminate presses, under high pressure at high temperature, in accordance with EN 438-4, type CGS.

Due to its scientifically developed, double-cured polyurethane acrylic coating, Max Resistance² stands up to the toughest tests – unaffected by solvents, most acids and the harshest chemicals. Easy-to-clean and disinfect and at the same time wear and scratch resistant, this innovative material significantly extends the life cycle of your laboratory work surface.

MAX RESISTANCE² STRUCTURE



PERMANENTLY RESISTANT

Max Resistance² is extremely resistant to chemical and physical abuse – thanks to FunderMax's patented technology. Created from tested and certified raw materials, compressed at high temperatures under intense pressure, the end result is a homogenous, decorative and extremely resistant panel. And as it's completely uniform and joint free it's also permanently resistant to moisture.

FOR EXTREME DEMANDS

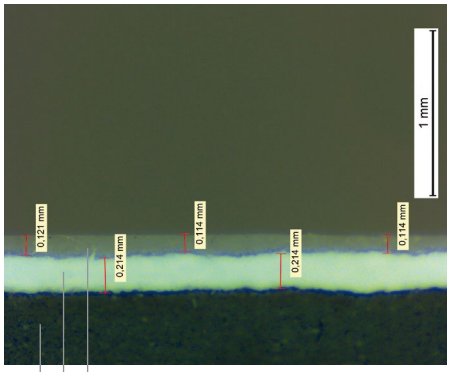
Ideal for all types of laboratories: research facilities, biochemistry laboratories, pharmaceutical laboratories, hospital laboratories, surgery suites, school laboratories, kitchens and the food industry. When absolute cleanliness and protection are called upon, Max Resistance² delivers on every level.

In contrast to other compact work surfaces, Max Resistance² is unaffected when it comes into contact with even the most concentrated or aggressive chemicals, such as Sulfuric, Hydrochloric, Hydrofluoric Acids or Hydrogen Peroxide.
Meaning you can rely on total chemical resistance.

Patented surface technology

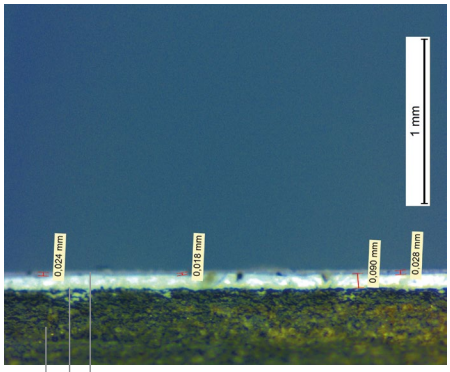
Exclusive ‘RE technology’, developed in-house by FunderMax research scientists, is used in the production of Max Resistance² – perfecting the finish and making it ultimately resistant on both sides. In contrast to ordinary surfaces manufactured by means of Electronic Beam Curing (EBC) or Melamine technology, Max Resistance² work surface offers a significantly higher resistance to scratching, impact and abrasion, as well as aggressive acids. Max Resistance² sets a new standard for laboratory surfaces and considerably increases the life cycle of your laboratory work surface.

FunderMax RE-Technology



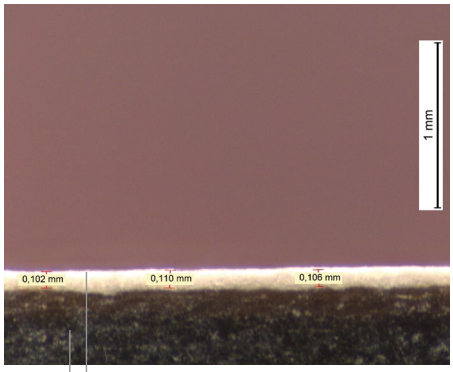
EXTRA THICK DOUBLE-HARDENED URETHANE-ACRYLIC SURFACE
EXTRA THICK DECOR LAYER
HPL-CORE (JET-BLACK, PHENOL IMPREGNATED KRAFT PAPER)

EBC-Technology



ELECTRONIC BEAM CURED (EBC) ACRYLIC SURFACE
DECOR LAYER
FIBRE OR HPL CORE

Melamine-Technology



MELAMINE DECOR SURFACE
HPL CORE

ANTIMICROBIAL

Because of its non-porous finish, Max Resistance² can be easily disinfected and doesn’t support the growth of bacteria.

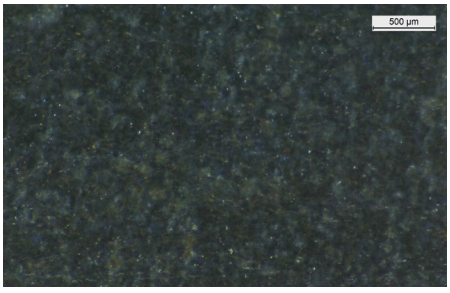
As a result you can confidently disinfect, knowing that you will kill > 99.99% of germs. Following a deliberate contamination with the aggressive Staphylococcus Aureus and Escherichia Coli bacterias, and subsequent disinfection[1)], it was proven that Max Resistance² was as effective as operation room tiles and stainless steel when it comes to disinfection. These rigorous tests demonstrate the superior performance of Max Resistance² and highlight its suitability for medical, bio-chemical, food and pharmaceutical sectors/laboratories.

In a further test[2)], it was demonstrated that the surface of Max Resistance² is free of micropores. The comparisson to other available surfaces shows that this is a truly unique feature.

1) THE FOLLOWING DISINFECTANTS WERE USED (IN VOL. %):
ETHANOL 70%, FORMALIN 5%, P-CHLORO-M-CRESOL 0.3%, CHLORAMINE T 1%, CLORAMIN T 5%, ALKYL BENZYL DIMENTHYL AMMONIUM CHLORIDE 0.1%

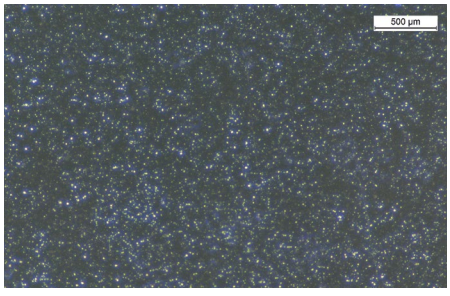
2) POROSITY CHECK: APPLICATION OF CHALK, SUBSEQUENT CLEANING AND SURFACE EXAMINATION WITH MICROSCOPE

RE-Surface



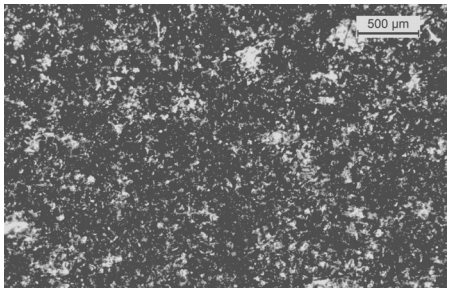
NO SMALL PORES VISIBLE

EBC-Surface



MICROPORES VISIBLE

Melamine Surface



PORES VISIBLE

Maximum performance

Max Resistance² not only meets the standards set by SEFA 3, it surpasses them; the harshest chemicals applied to horizontal lab surfaces have no impact whatsoever. Even Hydrofluoric Acid and Sulfuric Acid don't damage the surface.

Substance \ Rating	0 No effect	1 Excellent	2 Good	3 Fair
ACIDS				
Acetic Acid 99%	●			
Dichromate Acid 5% [2]	●			
Chromic Acid 60%	●			
Formic Acid 90% [2]	●			
Hydrochloric Acid 37%	●			
Hydrofluoric Acid 48%		●		
Nitric Acid 20%	●			
Nitric Acid 30%	●			
Nitric Acid 70% [2]			●	
Phosphoric Acid 85%	●			
Sulphuric Acid 33%	●			
Sulphuric Acid 77%	●			
Sulphuric Acid 96%		●		
Sulphuric Acid 77 % Nitric Acid 70% (1:1)			●	
BASES				
Ammonium Hydroxide 28%	●			
Sodium Hydroxide 10%	●			
Sodium Hydroxide 20%	●			
Sodium Hydroxide 40%	●			
Sodium Hydroxide Flake	●			
SALTS AND HALOGENS				
Saturated Zinc Chloride	●			
Saturated Silver Nitrate	●			
Tincture of Iodine [1]		●		

Substance \ Rating	0 No effect	1 Excellent	2 Good	3 Fair
ORGANIC CHEMICALS				
Cresol	●			
Dimethylformanide	●			
Formaldehyde 37%	●			
Furfural[1]		●		
Gasoline	●			
Hydrogen Peroxide 30% [2]	●			
Hydrogen Peroxide 3%	●			
Phenol 90%		●		
Sodium Sulfide Saturated	●			
SOLVENTS				
Acetone [2]	●			
Amyl Acetate	●			
Benzene	●			
Butyl Alcohol	●			
Carbon Tetrachloride	●			
Chloroform [2]	●			
Dichlor Acetic Acid [2]		●		
Dioxane	●			
Diethyl Ether	●			
Ethyl Acetate [1]	●			
Ethyl Alcohol	●			
Methylalcohol	●			
Methylene Chloride	●			
Methyl Ethyl Ketone	●			
Mono Chlorobenzene	●			
Napthelene	●			
Toluene	●			
Trichloroethylene	●			
Xylene [1]	●			

TEST RESULTS MAY DIFFER BY COLOUR
[1] RESULT ON 0082
[2] RESULT ON 0085

TEST PROCEDURE

The chemical resistance tests were performed in a SEFA certified laboratory according to the Test Method: SEFA 3-2010 Sec 2.1. (24hr EXPOSURE) Detailed information and results are available in the official test reports.

RESULTS

FunderMax Resistance² passed the SEFA 24h Exposure Test and is therefore suitable and recommended for laboratory worktops. FunderMax Resistance² exceeds the SEFA test criteria by far without one single Level 3 rating.

RATING

0 – No Effect – No detectable change in the material surface.
1 – Excellent – Slight detectable change in color or gloss but no change in function or life of the surface.
2 – Good – A clearly discernible change in color or gloss but no significant impairment of surface life or function.
3 – Fair – Objectionable change in appearance due to discoloration or etch, possibly resulting in deterioration of function over an extended period of time.

ACCEPTANCE CRITERIA

To be approved as laboratory grade surfaces, tested materials should receive no more than 4 Level 3 ratings.

Outstanding mechanical and thermal properties

Properties tested according to EN 438-2	Standard requirement	Max Resistance²
PHYSICAL DATA		
Density DIN 52350/ISO 1183	≥ 1,35 g/cm³	≥ 1,35 g/cm³
Thickness (e.g.) EN 438-2, point 5		10 mm
Weight		13,5 kg/m²
MECHANICAL PROPERTIES		
Resistance to stress abrasion EN 438-2, point 10 (Initial Point)	≥ 150 U	450 U*
Resistance to impact EN 438-2, point 21	≤ 10 mm	8 mm
Resistance to scratching EN 438-2, point 25	degree ≥ 3 ≥ 4 N	3 - 4 degree 4 - 6 N
Flexural strength EN ISO 178	≥ 80 MPa	≥ 80 MPa
E-Modulus EN ISO 178	≥ 9000 MPa	≥ 9000 MPa

*450 U for all Uni colours, 150 U for Punto decors

Properties tested according to EN 438-2	Standard requirement	Max Resistance²
THERMAL PROPERTIES		
Dimensional stability measured at elevated temperatures with moisture change EN 438-2, point 17	≤ 0,30 length ≤ 0,60 width	0,15 length 0,3 width
Co-efficiency of thermal expansion DIN 52328	1/K	20 x 10^{-6}
Resistance to dry heat EN 438-2, point 16	4-5 [degree]	4-5 [degree]
Resistance to staining EN 438-2, point 26 (group 1-3)	4-5 [degree]	5 no visible changes, no blisters or cracks
Surface resistance		10^{9} – 10^{12} Ohm
OPTICAL PROPERTIES		
Light fastness EN 438-2, point 27	≥ 4 [level]	4 or 5

SURPASSES ALL TESTS

In addition to chemical resistance, mechanical strength is key when it comes to creating highly durable, long-lasting lab surfaces. This is where Max Resistance² comes into its own. Thanks to its innovative patented surface technology, Max Resistance² offers a 25% higher impact and scratch resistance, and a 3 times higher abrasion resistance, when compared to EBC or Melamine Surfaces. Max Resistance²'s dimensional stability is also well above the standard requirements.

10 YEAR WARRANTY

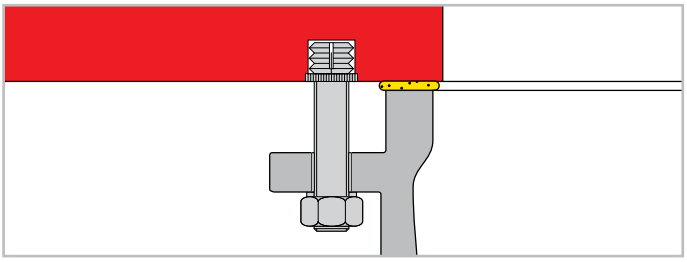
Because of its superior performance, Max Resistance² comes with a 10 year extended warranty.

Fabrication and Installation

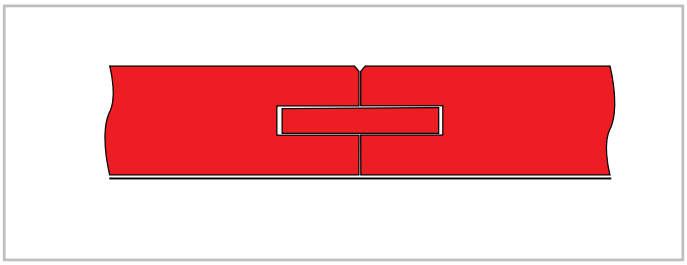
PROCESSING GUIDELINES

In comparison to other materials, Max Resistance^2 is very easy to machine and install.

You can find detailed instructions on storage, handling and fabrication in our ‘Interior Technique’ brochure and online at www.fundermax.at.

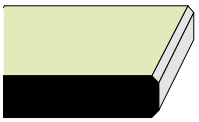


OPTION FOR INSTALLING AN UNDERMOUNT SINK



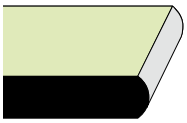
OPTION FOR WORKTOP JOINTS

Examples of edge designs



CHAMFERED

ROUNDED



ROUND

APPLICATIONS

Optimal Size

FunderMax offers over-sized compact panels – specifically designed for the laboratory sector. With Max Resistance² you can design seamless, joint-free worktop areas.

SIZES

OF = 3660 x 1630 mm 144.09“ x 64.17“ = 64.26 sf
XL = 4100 x 1854 mm 161.42“ x 72.99“ = 81.81 sf - on request

THICKNESS

4 - 25 mm 1/6"-1"

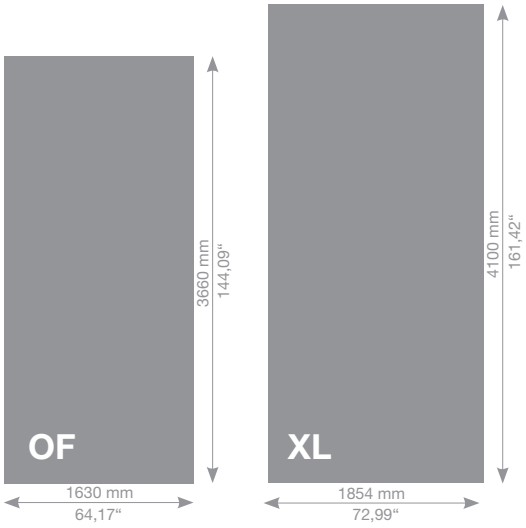
CORE

black
Upon request also available in F quality (minimum quantity 100 panels.)

SURFACE

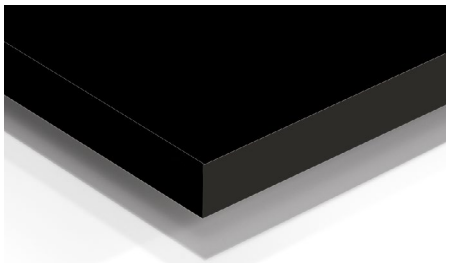
RE

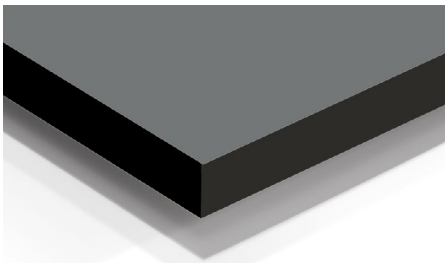
Peelable protective film on both sides for maximum protection during transport, fabrication and installation.

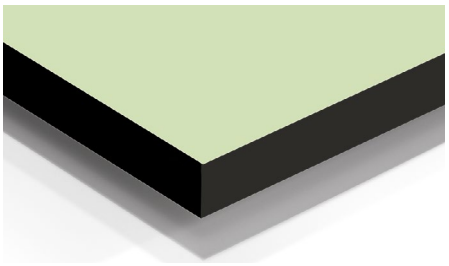


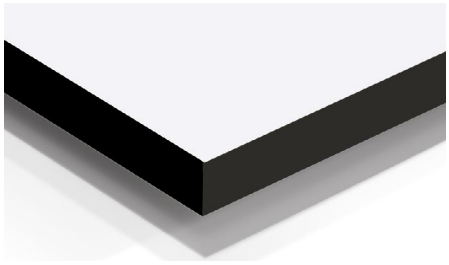
The collection

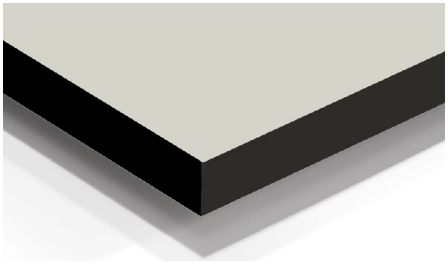
Max Resistance² makes life so much easier. With its deep black core and double sided resistant decor, you can maximise your design and reduce waste during fabrication. Extra high resin content and careful manufacturing results in a entirely deep black core – additional edge treatment is not necessary.

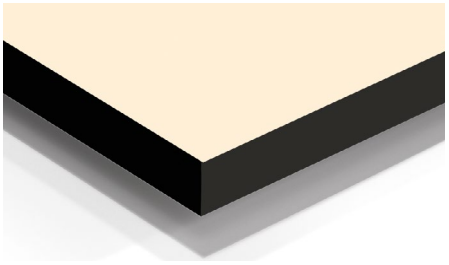

0082 DEEP BLACK

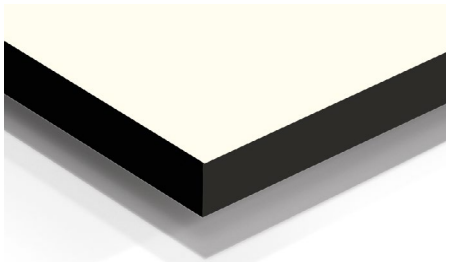

0075 DARK GREY

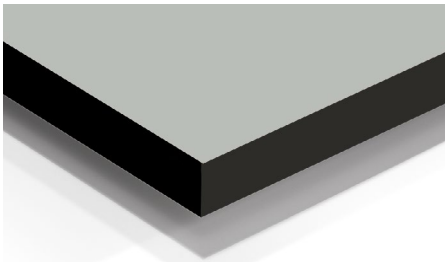

0592 KIWI GREEN

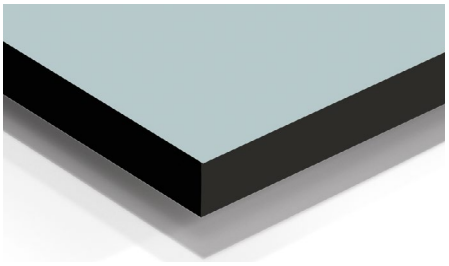

0606 ARCTIC WHITE

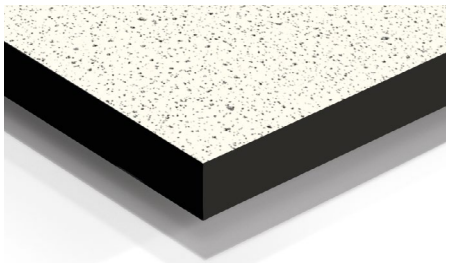

0741 BIRCH GREY

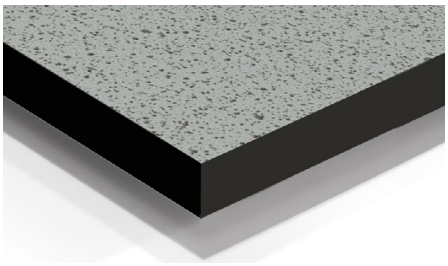

0851 WINTER WHITE

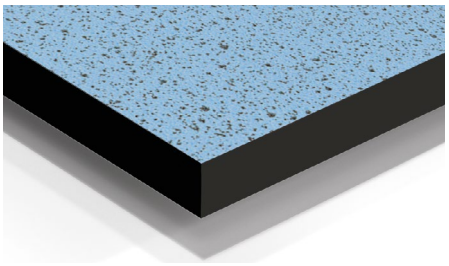

0085 WHITE


0074 PASTEL GREY


0706 GLACIER BLUE


0558 WHITE PUNTO


0559 PASTEL GREY PUNTO


3361 PUNTO ARCTIC

In large, design oriented projects, surfaces and colors and textures can be coordinated and combined with FunderMax's extensive product range - ensuring a unique and contemporary design.

COLOR VARIATIONS FROM THE ORIGINAL DECORS ARE CAUSED TO THE TECHNICAL LIMITATIONS OF THE PRINTING PROCESS. PLEASE ASK ALWAYS FOR ORIGINAL SAMPLES.

Products for laboratories

In addition to Max Resistance², FunderMax offers a wide range of combinable high quality products, purposely designed for the diverse challenges of the laboratory market.

	Max Resistance²	Compact Interior	Compact Interior White Core	Max Laminate	Star Favorit Superfront
Surface	RE	FH, MT [1)]	FH, MT [1)]	FH, MT, SG, SU, NA, AP [1)]	FH, HG, SG
Technology	RE-Technology	Melamine	Melamine	Melamine	Melamine
Size in mm / inch	OF = 3660x1630 XL = 4100x1854 (on request) OF = 144.09“x 64.17“ XL = 161.42“x72.99“ (on request)	XL = 4100x1854 JU = 4100x1300 GR = 2800x1300 XL = 161.42“x72.99“ JU = 161,42“x51,18“ GR = 110,24“x51,18“	XL = 4100x1854 JU = 4100x1300 XL = 161.42“x72.99“ JU = 161,42“x51,18“	JU = 4100x1300 GR = 2800x1300 TK = 2140x1060 JU = 161,42“x51,18“ GR = 110,24“x51,18“ TK = 85,25“x41,73“	2820x2070 2800x1854 (HG) 2800x2050 (SG) 111,02“x81,50“ 110,24“x72,99“ (HG) 110,24“x80,71“ (SG)
Thickness	4mm-25mm 1/6“-1“	2-20 mm (XL) 2-25 mm (JU, GR)	5-13 mm (FH) 8, 10, 12, 13 (MT)	0,8 mm, 1 mm, 2 mm	12,0-39,3 mm
Range of decors	12 Standard Decors; others available on request	> 240 Decors (FunderMax Interior Collection)	> 240 Decors (FunderMax Interior Collection)	> 240 Decors (FunderMax Interior Collection)	> 240 Decors (FunderMax Interior Collection)
Chemical resistance of the surface and core	excellent	medium	low	medium	medium
Core	Black, HPL	Black, HPL	White, Melamine (Decor 0085)	Brown, HPL	Woodchip
Impact resistance	very high	very high	high	high	high
Scratch and abrasion resistance	excellent	very high	good	very high	good

	Max Resistance²	Compact Interior	Compact Interior White Core	Max Laminate	Star Favorit Superfront
General and wet chemistry	✓✓				
Bio-chemistry and medical sector	✓✓				
Petrochemical industry	✓✓				
Pharma, food and beverage industries	✓✓			✓	✓
Technical work stations	✓✓	✓	✓	✓	✓
Office work stations	✓✓	✓✓	✓✓	✓✓	✓✓
Application	Laboratory worktops and shelves, Splash-backs, work space dividers, fume-hood tops and lining, horizontal and vertical applications	Interior wall protection, cabinets and shelving in light- or non-chemical environments	Worktops, partitions, shelves and design elements in areas where chemicals aren’t in use	Surface material for cabinets, doors and shelving in non-chemical laboratories	For cabinets and fronts enduring increased mechanical stress

✓✓ = IDEAL
✓ = SUITABLE

1) FEASIBLE SURFACES/FORMAT COMBINATION ACCORDING TO THE PRODUCT RANGE

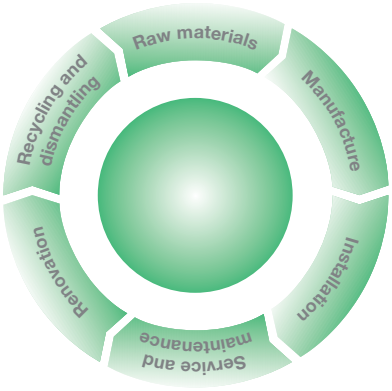
NOTE: AS SURFACES RE, IP AND FH HAVE THE SAME SURFACE STRUCTURE/FINISH, THEY CAN BE COMBINED EFFECTIVELY.
SLIGHT VARIATIONS IN COLOUR & APPEARANCE CAN OCCUR. MAX RESISTANCE² DECORS ARE AVAILABLE ACROSS THE RANGE (WITH 100% COMPATIBILITY).

Sustainable product design

- FSC®* certified
- Green electricity and bio-energy
- Low emissions

ENVIRONMENTALLY FRIENDLY PRODUCTION

During the manufacture of Max Resistance², kraft paper is impregnated with resin, dried and compressed at high pressure – producing highly durable and moisture resistant panels. The waste from this process is treated (by regenerative thermal oxidation) and then re-used, achieving an entirely closed production cycle.



We are specialists in the processing of renewable raw materials - and have been for over 100 years. Our production cycles are closed, production waste is either recycled back into the production process or used to generate energy in our green energy district heating plants. This works so well, that every day we supply green electricity to the grid and provide district heating to over 3,000 households. Using biogenic energy sources that have the least impact on the climate, FunderMax makes an active contribution to the reduction of greenhouse gas emissions and helps to save around 10,000 tonnes of CO_2 annually.

NATURAL MATERIALS

Max Resistance² panels are primarily made from 'by-product' wood, produced in saw mills and from logging, which is then processed into 'kraft paper'. FunderMax procures these raw materials from suppliers who hold FSC® or PEFC™ certification. These standards confirm that all logging is carried out in accordance with international rules for sustainable forestry.

INDOOR AIR QUALITY: CERTIFIED

Air quality has a direct impact on our health. Therefore, it's crucial that materials used for commerical buildings, schools, health facilities and residential buildings are tested to ensure they're safe. Most exposure to environmental pollutants occurs indoors: emissions from organic compounds, construction products and furnishings for example.

With Max Resistance² , you can rest assured. It has GREENGUARD certification. An international standard, and assurance which puts products through their paces. Max Resistance excels, having met strict emissions test, making it perfectly safe to use indoors.

* PLEASE FIND FURTHER INFORMATION AT WWW.FUNDERMAX.AT

GREENGUARD
PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS
UL.COM/GG
UL 2818

SEFA

FUNDERMAX

for people who create

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