

FUNDERMAX®



## Max Resistance<sup>2</sup>

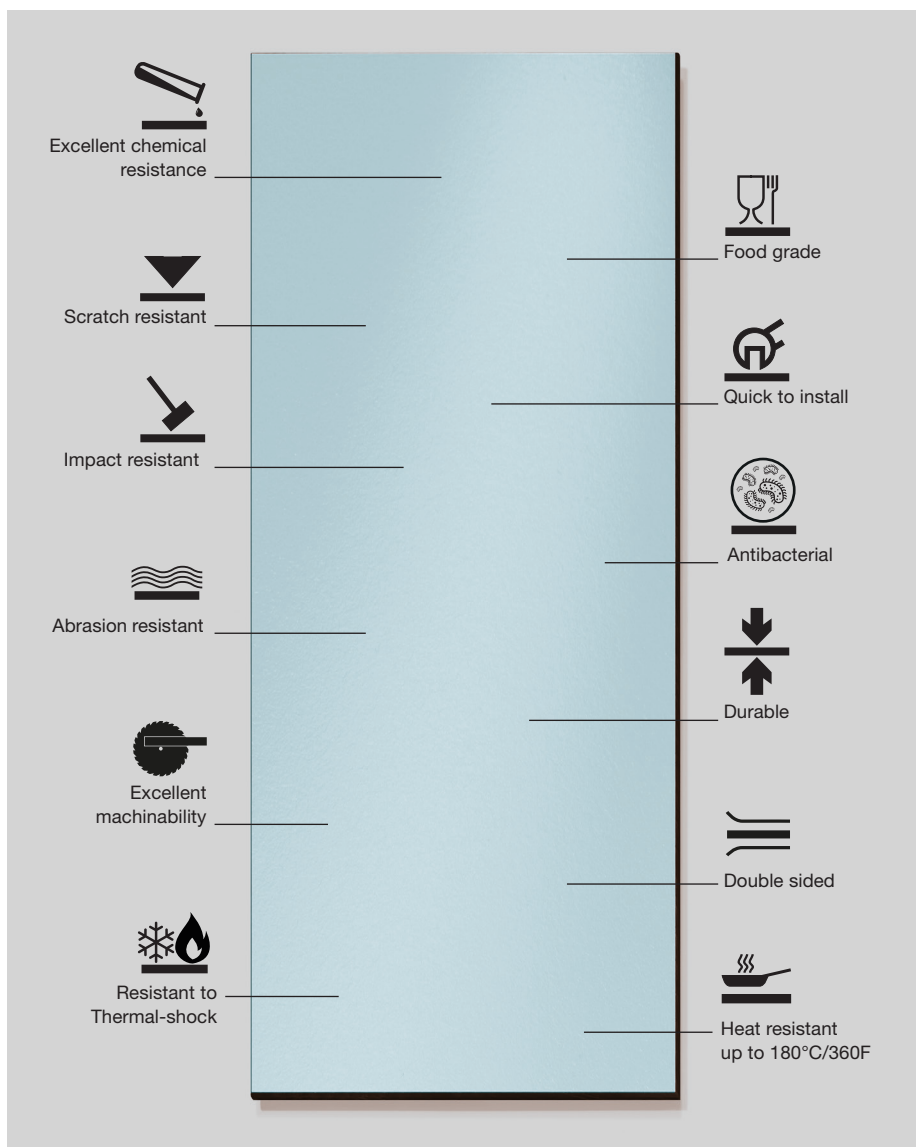
Surfaces for durable lab designs

interior

for  
people  
who  
create

## The best in its class

Max Resistance<sup>2</sup> 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.

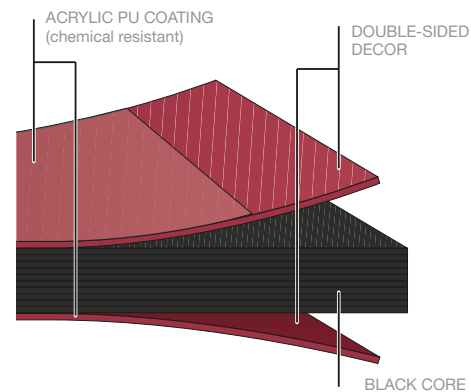


## Max Resistance<sup>2</sup>

Max Resistance<sup>2</sup> 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 carefully developed, double-cured polyurethane acrylic coating, Max Resistance<sup>2</sup> 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 service life of your laboratory.

### MAX RESISTANCE<sup>2</sup> STRUCTURE



### PERMANENTLY RESISTANT

Max Resistance<sup>2</sup> is highly resistant to both chemical and mechanical challenges - thanks to its natural intrinsic strength. 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 and multiple sectors: research facilities, hospitals, doctor's surgeries, PLE and biochemistry, hospitality (kitchens), schools, pharma industries. When absolute cleanliness and protection are called upon, Max Resistance<sup>2</sup> delivers on every level.

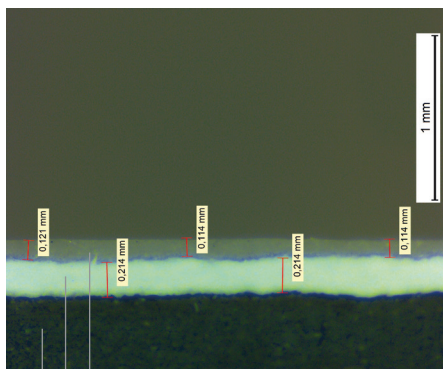
In contrast to other compact work surfaces, Max Resistance<sup>2</sup> remains totally unaltered when it comes into contact with even the most concentrated or aggressive chemicals, such as Nitric, Hydrochloric, Hydrofluoric Acids or Hydrogen Peroxide. Meaning you can rely on total chemical resistance.

## Patented surface technology

Exclusive 'RE technology', developed in-house by FunderMax research scientists, is used in the production of Max Resistance<sup>2</sup> – 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

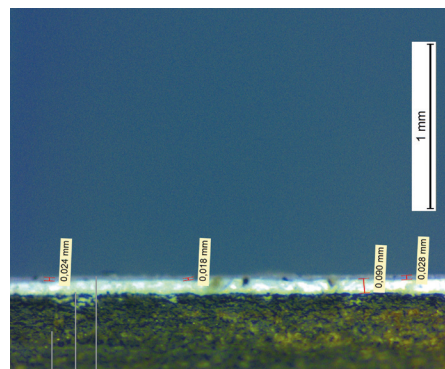
technology, Max Resistance<sup>2</sup> work surface offers a significantly higher resistance to scratching, impact and abrasion, as well as aggressive acids. Max Resistance<sup>2</sup> sets a new standard for laboratory surfaces and considerably increases the longevity of your lab.

### FunderMax RE-Technology



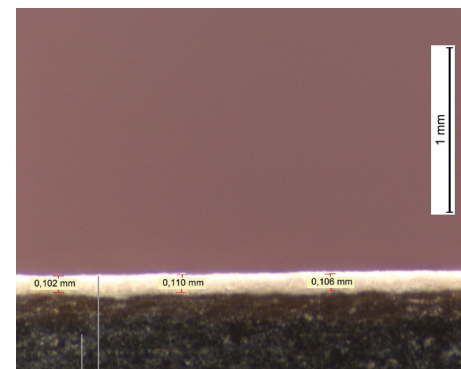
EXTRA THICK DOUBLE-HARDENED URETHANE-ACRYLIC SURFACE  
EXTRA THICK DECOR LAYER  
HPL-CORE (JET-BLACK, PHENOL IMPREGNATED KRAFT PAPER)

### EBC-Technology



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

### Melamine-Technology



MELAMINE DECOR SURFACE  
HPL CORE

### ANTIBACTERIAL

Because of its non-porous finish, Max Resistance<sup>2</sup> 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<sup>1)</sup>, it was proven that Max Resistance<sup>2</sup> was as effective as OP tiles and stainless steel when it comes to disinfection. These rigorous tests demonstrate the superior performance of Max

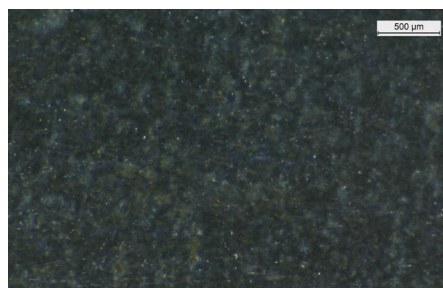
Resistance<sup>2</sup> and highlight its suitability for medical, bio-chemical, food and pharmaceutical sectors/laboratories.

In a further test<sup>2)</sup>, it was demonstrated that the surface of Max Resistance<sup>2</sup> is free of micropores. The comparison 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 DIMETHYL AMMONIUM CHLORIDE 0.1%

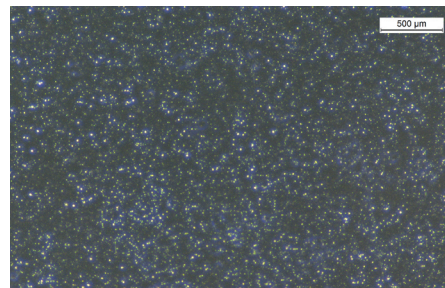
2) POROSITY CHECK: APPLICATION OF CHALK, SUBSEQUENT CLEANING AND SURFACE EXAMINATION WITH MICROSCOPE

### RE-Surface



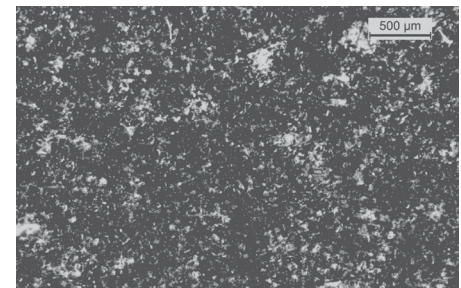
NO SMALL PORES VISIBLE

### EBC-Surface



MICROPORES VISIBLE

### Melamine Surface



PORES VISIBLE

# Maximum performance

Max Resistance<sup>2</sup> 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 Nitric Acid don't damage the surface.



Substance	Rating	0	1	2	3
		No effect	Excellent	Good	Fair

### ACIDS

Acetic Acid 99%	●				
Dichromate Acid 5% <sup>2)</sup>	●				
Chromic Acid 60%	●				
Formic Acid 90% <sup>2)</sup>	●				
Hydrochloric Acid 37%	●				
Hydrofluoric Acid 48%		●			
Nitric Acid 20%	●				
Nitric Acid 30%	●				
Nitric Acid 70% <sup>1)</sup>	●				
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 <sup>1)</sup>		●			

TEST RESULTS MAY DIFFER BY COLOUR

<sup>1)</sup> RESULT ON 0082

<sup>2)</sup> 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 Resistance<sup>2</sup> passed the SEFA 24h Exposure Test and is therefore suitable and recommended for laboratory worktops. FunderMax Resistance<sup>2</sup> exceeds the SEFA test criteria by far without one single Level 3 rating.

Substance	Rating	0	1	2	3
		No effect	Excellent	Good	Fair

### ORGANIC CHEMICALS

Cresol	●				
Dimethylformamide	●				
Formaldehyde 37%	●				
Furfural <sup>1)</sup>			●		
Gasoline	●				
Hydrogen Peroxide 30% <sup>2)</sup>	●				
Hydrogen Peroxide 3%	●				
Phenol 90%			●		
Sodium Sulfide Saturated	●				

### SOLVENTS

Acetone <sup>2)</sup>	●				
Amyl Acetate	●				
Benzene	●				
Butyl Alcohol	●				
Carbon Tetrachloride	●				
Chloroform <sup>2)</sup>	●				
Dichlor Acetic Acid <sup>2)</sup>			●		
Dioxane	●				
Diethyl Ether	●				
Ethyl Acetate <sup>1)</sup>	●				
Ethyl Alcohol	●				
Methylalcohol	●				
Methylene Chloride	●				
Methyl Ethyl Ketone	●				
Mono Chlorobenzene	●				
Napthelene	●				
Toluene	●				
Trichloroethylene	●				
Xylene <sup>1)</sup>	●				

### 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 Resistance <sup>2</sup>
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### PHYSICAL DATA

Density DIN 52350/ISO 1183	≥ 1,35 g/cm <sup>3</sup>	≥ 1,35 g/cm <sup>3</sup>
Thickness (e.g.) EN 438-2, point 5		10 mm
Weight		13,5 kg/m <sup>2</sup>

### MECHANICAL PROPERTIES

Resistance to stress abrasion EN 438-2, point 10	≥ 350 U	450 U
Resistance to impact EN 438-2, point 21	≤ 10 mm	8 mm
Resistance to scratching EN 438-2, point 25	≥ 3 degree ≥ 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
Tensile strength EN ISO 527-2	≥ 60 MPa	≥ 60 MPa

Properties tested according to EN 438-2	Standard requirement	Max Resistance <sup>2</sup>
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### THERMAL PROPERTIES

Dimensional stability measured at elevated temperatures with moisture change EN 438-2, point 17	≤ 0,30 length ≤ 0,60 width	0,05 length 0,15 width
Resistance to boiling water EN 438-2, point 12	≤ 2%	0,3%
Co-efficiency of thermal expansion DIN 52328	1/K	20 x 10 <sup>-6</sup>
Resistance to dry heat EN 438-2, point 16	4-5 [degree]	5 no visible changes, no blisters or cracks <sup>3)</sup>
Resistance to staining EN 438-2, point 26 (group 1-3)	4-5 [degree]	5 no visible changes, no blisters or cracks <sup>3)</sup>

### OPTICAL PROPERTIES

Light fastness EN 438-2, point 27	≥ 4 [level]	4 or 5
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### 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 Resistance<sup>2</sup> comes into its own. Thanks to its innovative patented surface technology, Max Resistance<sup>2</sup> offers a 25% higher impact and abrasion resistance, and a 50% greater scratch resistance, when compared to EBC or Melamine Surfaces. Its dimension stability is also well above the standard.

### 10 YEAR WARRANTY

Because of its superior performance Max Resistance<sup>2</sup> also comes with a 10 year extended warranty.

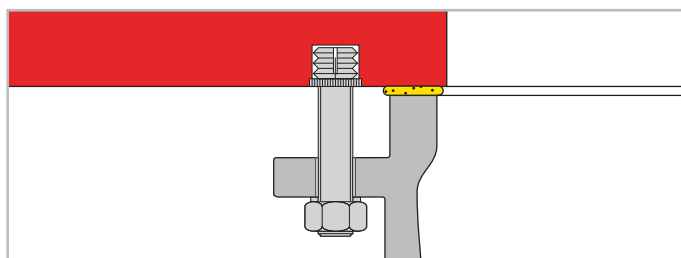


# Fabrication and Installation

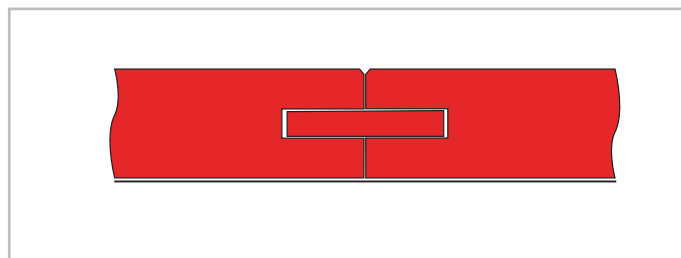
## PROCESSING GUIDELINES

In comparison to other materials, Max Resistance<sup>2</sup> 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](http://www.fundermax.at).

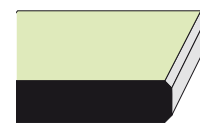


OPTION FOR INSTALLING AN UNDERMOUNT SINK

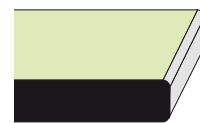


OPTION FOR WORKTOP JOINTS

## Examples of edge designs



CHAMFERED



ROUNDED



ROUND

## APPLICATIONS



## Optimal Size

FunderMax offers over-sized compact panels – specifically designed for the laboratory sector. With Max Resistance<sup>2</sup> you can design seamless, joint-free worktop areas.

### SIZES

3660 x 1630 mm    144,09" x 64,17" = 64,26 sf  
 2800 x 1300 mm    110,24" x 51,18" = 39,18 sf    (Max Resistance<sup>2</sup> HPL 1 mm only)

### THICKNESS

4 - 25 mm    1/6"-1"

### Max Resistance<sup>2</sup> HPL:

1 mm, sanded back

### CORE

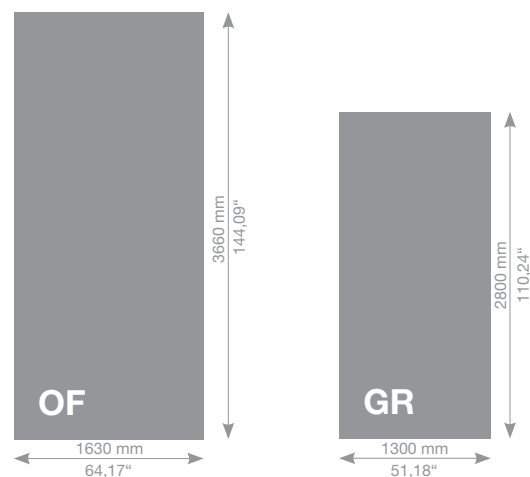
black

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

### SURFACE

RE

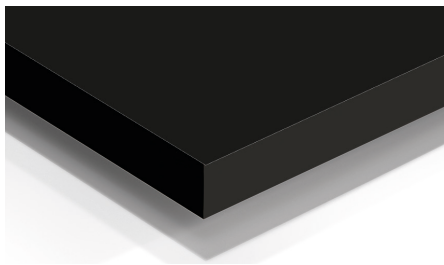
Peelable protective film on both sides for maximum protection during transport, fabrication and installation.



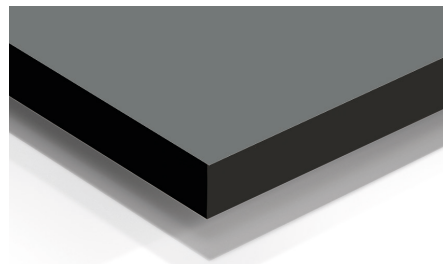


## The collection

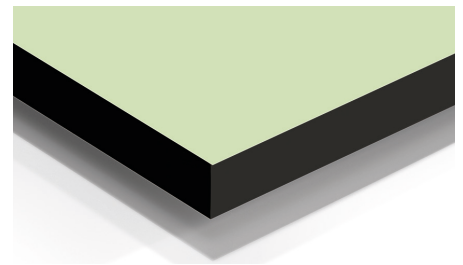
Max Resistance<sup>2</sup> makes life so much easier. With its deep black core and double sided decor, you can maximise your design and reduce waste during fabrication – no need for special treatment or sealing of the core either.



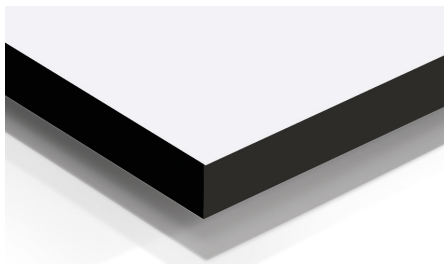
0082 DEEP BLACK\*



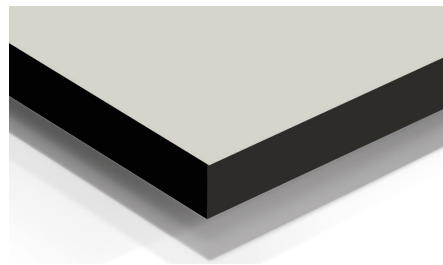
0075 DARK GREY



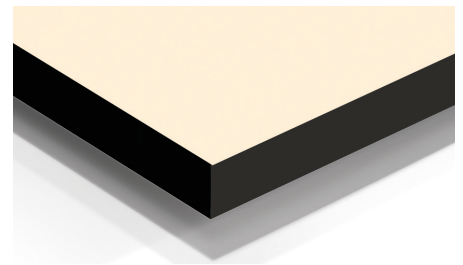
0592 KIWI GREEN



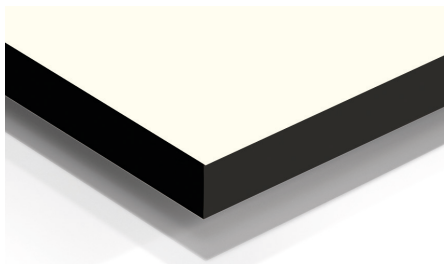
0606 ARCTIC WHITE\*



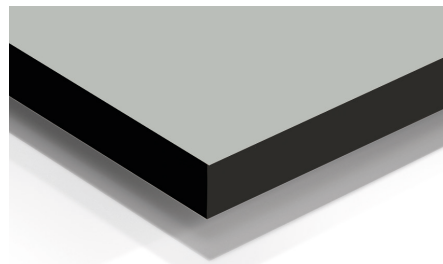
0741 BIRCH GREY\*



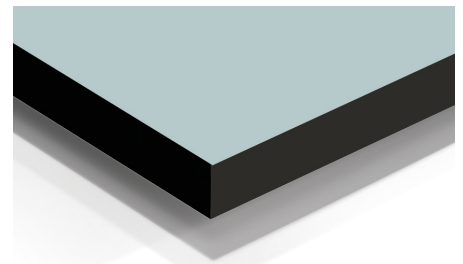
0851 WINTER WHITE



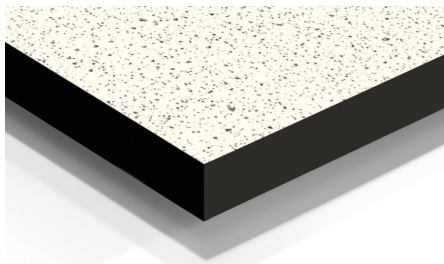
0085 WHITE\*



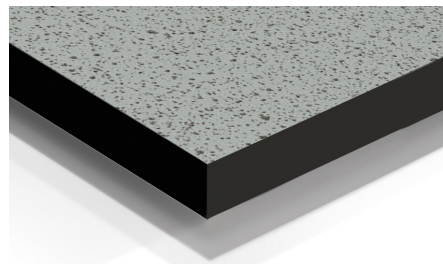
0744 PASTEL GREY\*



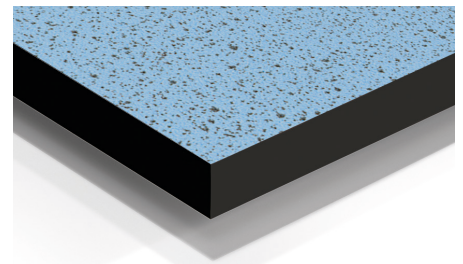
0706 GLACIER BLUE



0558 WHITE PUNTO



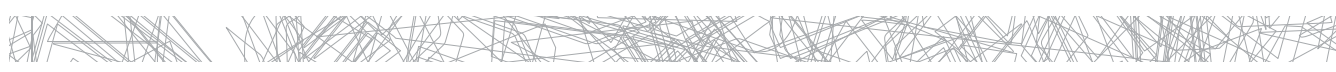
0559 PASTEL GREY PUNTO



3361 ARCTIC PUNTO

\* STANDARD DECORS: NO MINIMUM ORDER.  
OTHER DECORS: MINIMUM ORDER: 40 PANELS.

Co-ordinate your design. If part of a more extensive project, surfaces and colors can be combined with the various products, across our entire range – ensuring a complementing, 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 Resistance<sup>2</sup>, FunderMax offers a wide range of combinable high quality products, purposely designed for the diverse challenges of the lab sector.

	Max Resistance <sup>2</sup>	Max Resistance <sup>2</sup> HPL	Compact Interior	Compact Interior White Core	Max Laminate	Star Favorit Superfront
<b>Surface</b>	RE	RE	FH, MT <sup>1)</sup>	FH, MT <sup>1)</sup>	FH, MT, SG, PO, SM, RM, SU, FK <sup>1)</sup>	FH, HG, SG
<b>Technology</b>	RE-Technology	RE-Technology	Melamine	Melamine	Melamine	Melamine
<b>Size in mm / inch</b>	OF = 3660x1630 OF = 144,09"x 64,17"	GR = 2800x1300 GR = 110,24"x51,18"	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 <sup>(HG)</sup> 2800x2050 <sup>(SG)</sup> 111,02"x81,50" 110,24"x72,99" <sup>(HG)</sup> 110,24"x80,71" <sup>(SG)</sup>
<b>Thickness</b>	4mm-25mm 1/6"-1"	1 mm, sanded back	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
<b>Range of decors</b>	12 Standard Decors; others available on request	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)
<b>Chemical resistance of the surface and core</b>	excellent	excellent	medium	low	medium	medium
<b>Core</b>	Black, HPL	Brown, HPL	Black, HPL	White, Melamine (Decor 0085)	Brown, HPL	Woodchip
<b>Impact resistance</b>	very high	high	very high	high	high	high
<b>Scratch and abrasion resistance</b>	excellent	excellent	very high	good	very high	good

	Max Resistance <sup>2</sup>	Max Resistance <sup>2</sup> HPL	Compact Interior	Compact Interior White Core	Max Laminate	Star Favorit Superfront
<b>General and wet chemistry</b>	✓✓	✓✓				
<b>Bio-chemistry and medical sector</b>	✓✓	✓✓				
<b>Petrochemical industry</b>	✓✓	✓✓				
<b>Pharma, food and beverage industries</b>	✓✓	✓✓			✓	✓
<b>Technical work stations</b>	✓✓	✓✓	✓	✓	✓	✓
<b>Office work stations</b>	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓
<b>Application</b>	Laboratory worktops and shelves, Splash-backs, work space dividers, fume-hood tops and lining, horizontal and vertical applications	Ideal for cabinet doors, shelves and other surfaces within the lab environment	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 RESISTANCE<sup>2</sup> DECORS ARE AVAILABLE ACROSS THE RANGE (WITH 100% COMPATIBILITY).

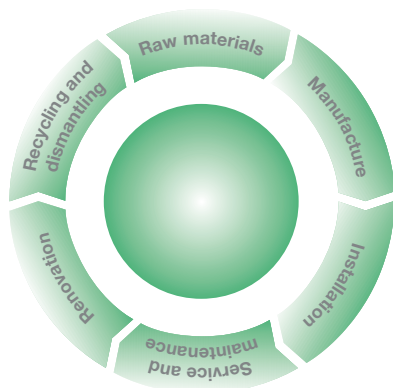


## Sustainable product design

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

### ENVIRONMENTALLY FRIENDLY PRODUCTION

During the manufacture of Max Resistance<sup>2</sup>, 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.



FunderMax produces and provides environmentally friendly district heating and green electricity to thousands of households and public buildings. 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<sub>2</sub> annually.

### NATURAL MATERIALS

Max Resistance<sup>2</sup> 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 commercial 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 Resistance<sup>2</sup>, 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.



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for  
people  
who  
create