

# Max Resistance<sup>2</sup>

## Surfaces for durable lab designs

Max Resistance<sup>2</sup> is a duromer high pressure, phenolic, laminate (HPL), manufactured under high pressure at high temperature, in accordance with EN 438-4, type CGS. The layers of virgin kraft paper impregnated with phenolic resin coupled with its scientifically 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, as well as moisture and heat resistant, this innovative material significantly extends the life cycle of the laboratory work surface. It is suitable for use on laboratory grade countertops, shelving, casework, lockers, wall cladding and fume hood liners. The double-sided material is color matched to the top and bottom surface.



### Patented surface technology

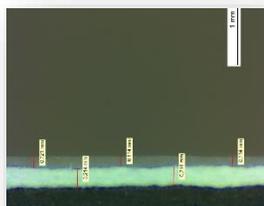
Exclusive 'RE technology', developed in-house by FunderMax research scientists, is used in the production of Max Resistance<sup>2</sup> – perfecting the finish and making it ultimately resistant on both sides.

### Antibacterial

Due to the non-porous finish, Max Resistance<sup>2</sup> can be easily disinfected and does not support the growth of bacteria. Tested to JIS Z 2801:2012, you can confidently disinfect, knowing you will kill 99.99% of germs. Max Resistance<sup>2</sup> is as effective as operation room tiles and stainless steel when it comes to disinfection.

### Sustainable

Max Resistance<sup>2</sup> manufactured utilizing a completely sustainable process utilizing green electricity and bio-energy, holds a wide range of certifications. Raw materials are from FSC and/or PEFC certified suppliers. Additional certifications include (but not limited to): Greenguard Gold and a third party verified Environmental Product Declaration; ISO 9001: ISO 14001: ISO 50001.



### Technical data:

Max Resistance<sup>2</sup>, specifically designed for the laboratory market, enables seamless, joint-free worktop designs.

**Size:** 144.09" x 64.17" = 64.26 sqf

**Thickness:** 1/6" – 1"

**Weight:** <7lb/sqf (standard 1")

**Surface Finish:** RE / matte, non-glare

**Décor:** 13 standard decors with additional colors available on request

**Core:** Deep black (Standard); White, Vulcano, Pastel Grey (color-thru)

**Warranty:** 10 years

**Applications:** Laboratory work tops and shelves, splash backs, work space dividers, reagent shelving, fume-hood worktops and liners, cabinets, wall lining, horizontal and vertical applications

**Place of Manufacture:** Austria

**FunderMax warehouse:** TN and CA



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## Maximum performance – chemical and stain

Max Resistance<sup>2</sup> meets and surpasses the standard set by SEFA3, the harshest chemicals applied to horizontal lab surfaces have no impact. A copy of the independent test certificate (Cert # for Black: 101666076GRR-001B Cert # for White: 101666076GRR-001A) is available on request. Results for Black:

| CHEMICAL/REAGENT                                  | TEST METHOD | FUNDERMAX |
|---|-------------|-----------|
| ACETATE, AMYL                                     | A           | 0         |
| ACETATE, ETHYL                                    | A           | 0         |
| ACETIC ACID - 98%                                 | B           | 0         |
| ACETONE   | A           | 0         |
| ALCOHOL, ETHYL                                    | A           | 0         |
| ALCOHOL, METHYL                                   | A           | 0         |
| ALCOHOL, BUTYL                                    | A           | 0         |
| AMMONIUM HYDROXIDE, 28%                           | B           | 0         |
| BENZENE   | A           | 0         |
| CARBON TETRACHLORIDE                              | A           | 0         |
| CHLOROFORM  | A           | 1         |
| CHROMIC ACID - 60%                                | B           | 0         |
| CRESOL  | A           | 1         |
| DICHLORACETIC ACID                                | A           | 2         |
| DICHROMATE ACID 5%                                | B           | 1         |
| DIMETHYLFORMAMIDE                                 | A           | 0         |
| DIOXANE   | A           | 0         |
| ETHYL ETHER                                       | A           | 0         |
| FORMALDEHYDE, 37%                                 | A           | 0         |
| FORMIC ACID - 90%                                 | B           | 1         |
| FURFURAL  | A           | 1         |
| GASOLINE  | A           | 0         |
| HYDROCHLORIC ACID 37%                             | B           | 0         |
| HYDROFLUORIC ACID, 48%                            | B           | 1         |
| HYDROGEN PEROXIDE, 30%                            | B           | 2         |
| IODINE, TINCTURE OF                               | B           | 1         |
| METHYL ETHYL KETONE                               | A           | 0         |
| METHYLENE CHLORIDE                                | A           | 0         |
| MONOCHLOROBENZENE                                 | A           | 0         |
| NAPHTHALENE                                       | A           | 0         |
| NITRIC ACID 20%                                   | B           | 0         |
| NITRIC ACID 30%                                   | B           | 0         |
| NITRIC ACID 70%                                   | B           | 0         |
| PHENOL, 90% (WT)                                  | A           | 1         |
| PHOSPHORIC ACID 85%                               | B           | 0         |
| SILVER NITRATE, SATURATED                         | B           | 0         |
| SODIUM HYDROXIDE FLAKE                            | B           | 0         |
| SODIUM HYDROXIDE, 10% (WT)                        | B           | 0         |
| SODIUM HYDROXIDE, 20% (WT)                        | B           | 0         |
| SODIUM HYDROXIDE, 40% (WT)                        | B           | 0         |
| SODIUM SULFIDE SATURATED                          | B           | 0         |
| SULFURIC ACID, 33%                                | B           | 0         |
| SULFURIC ACID, 77%                                | B           | 0         |
| SULFURIC ACID, 77% & NITRIC ACID, 70% EQUAL PARTS | B           | 2         |
| SULFURIC ACID, 96%                                | B           | 1         |
| TOLUENE   | A           | 0         |
| TRICHLOROETHYLENE                                 | A           | 0         |
| XYLENE  | A           | 0         |
| ZINC CHLORIDE, SATURATED                          | B           | 0         |
|   | PASS/FAIL   | PASS      |
|   | # OF 3      | 0         |
|   | TOTAL SCORE | 15        |

## Maximum performance – physical properties

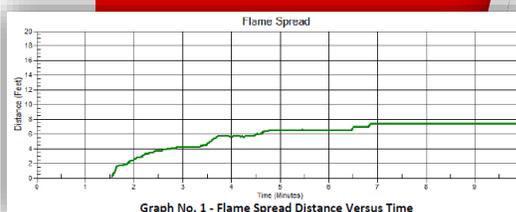
Max Resistance<sup>2</sup> affords a 25% higher impact and scratch resistance and a 3 times higher abrasion resistance when compared to EBC or Melamine surfaces. Max Resistance<sup>2</sup> also provides excellent heat and flame resistant properties. Heat resistant with no discoloration, blistering or cracking at Low heat 180°F Long term; Medium Heat at 360°F for 20 mins; and High heat (Bunsen Burner test – 5-10 seconds).

Max Resistance<sup>2</sup> is also antistatic. The surface resistance is in the area between 10<sup>9</sup> and 10<sup>12</sup> ohms.

| Properties tested according to EN 438-2   | Standard requirement          | Max Resistance <sup>2</sup>                 |
|---|-------------------------------|---|
| <b>PHYSICAL DATA</b>  |                               |   |
| 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>                      |
| <b>MECHANICAL PROPERTIES</b>  |                               |   |
| 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<br>≥ 4 N           | 3 - 4 degree<br>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  |                               |   |
| <b>THERMAL PROPERTIES</b>   |                               |   |
| Dimensional stability measured at elevated temperatures with moisture change EN 438-2, point 17 | ≤ 0.30 length<br>≤ 0.60 width | 0.15 length<br>0.3 width                    |
| 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]                  | 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 <sup>9</sup> – 10 <sup>12</sup> Ohm      |
| <b>OPTICAL PROPERTIES</b>   |                               |   |
| Light fastness EN 438-2, point 27   | ≥ 4 [level]                   | 4 or 5                                      |

## Fire Resistance:

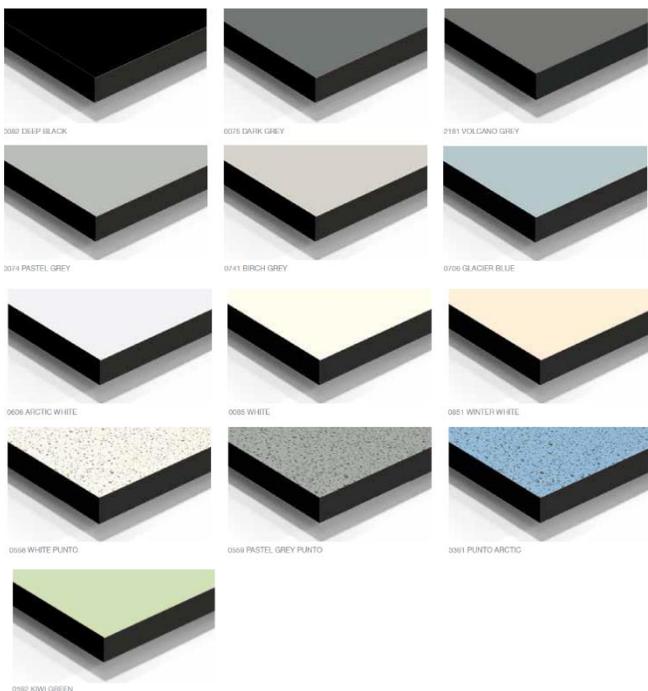
Flame Spread Index: 25  
 Smoke Developed Index: 130  
 Ignition Time: 01:18 (min:sec)  
 Time to Max Flame Front: 06:52 (Min:Sec)  
 Time to Max Temp: 09:58 (Min:sec)  
 Dripping Observed: None  
 Delamination Observed: None  
 Fallout Observed: None



## The collection

Max Resistance<sup>2</sup> is available in a range of standard decors, and with its double-sided resistant surface (even graffiti resistant), you can maximize your design.

Standard colors with deep black core:



Other colors within the Compact Max Interior range are also available upon request.

## New for 2020 – Color-thru

Max Resistance<sup>2</sup> is also available in a range of color through material, comprising white 0085 with white core, volcano 2181 with volcano core and pastel grey 0074 with pastel grey core.

Superior chemical resistance  
Solid color core  
Easy to make in-field cuts  
No edge dressing required



Available end of Q3 2020

## Fabrication

Max Resistance<sup>2</sup> is very easy to fabricate and install. Due to similar properties of hardwood, Max Resistance is fabricated using similar tools and carbide tipped tooling can be utilized. When working with FunderMax Compact Interior panels the ratio between the numbers of teeth (z), the cutting speed (vc) and the feed rate (vf) must be observed. Due to the experience with our in-house fabrication, we are able to support our partners to optimize the quality and output of fabrication.

Flatness and Thickness tolerances:

Max Resistance are flat panels with minimal thickness tolerances, which create perfectly even work surfaces with no edge variations in the joints. This is important for work **safety** in the lab. Also, the installation process is simplified when tolerances are minimal.

Technical brochure can be downloaded:  
[www.fundermax.at](http://www.fundermax.at)



## LEED

Using Max Resistance<sup>2</sup> on projects can contribute to LEED points with:

- Credit MRc7 - Certified Wood
- Credit IEQc4.1 - Low Emitting Materials - Adhesives and Sealants
- Credit IEQc4.2 - Low Emitting Materials - Paints and Coatings
- Credit IEQc4.4 - Low Emitting Materials - Composite Wood and Agrifiber Products

## Ease of Cleaning

A regular schedule of maintenance and housekeeping is recommended. Some laboratories, e.g., those working with pathogens and radioactive isotopes, may be required to select non-porous materials and smooth surfaces for their lab work surfaces. Max Resistance<sup>2</sup> is non-porous. Common guidelines include ASTM G122, ANSI/NEMA LD 3-2005, and EN 438. Ease of cleaning, 99.99% disinfect-ability, and the ability to withstand frequent contact with aggressive disinfectants and cleaning chemicals.