

# MATERIAL PROPERTY DATASHEET

Decorative high-pressure compact laminates according to EN 438-4:2016 of thicknesses of 6 mm (±1/4 in) or greater for interior use. Sheets consisting of layers of natural fibres (paper and/or wood) impregnated with thermosetting resins and surface layer(s) on one or both sides, having decorative colours or designs. A transparent topcoat is added to the surface layer(s) and cured by Trespas unique in-house technology Electron Beam Curing (EBC), to enhance the surface properties. These components are bonded together with simultaneous application of heat and high specific pressure to obtain a homogeneous closed material with increased density and integral decorative surface. They are available in the Standard grade (CGS) and in the Fire-Retardant grade (CGF).

| PROPERTIES   | TEST METHOD     | PROPERTY OR ATTRIBUTE  | UNIT   | RESULT <sup>AB</sup>                                     |  |
|--|-----------------|--|--|--|--|
|  |                 |  |  | GRADE: CGS (TOPLAB <sup>VERTICAL</sup> )                 | GRADE: CGF (TOPLAB <sup>VERTICAL</sup> FR) |
|  |                 |  |  | STANDARD: EN 438-4                                       | STANDARD: EN 438-4                         |
|  |                 |  |  | COLOUR/DECOR: ALL <sup>B</sup>                           | COLOUR/DECOR: ALL <sup>B</sup>             |
| <b>SURFACE QUALITY</b>                                   |                 |  |  |  |  |
|  | EN 438-2 : 4    | Spots, dirt, similar surface defects                           | mm <sup>2</sup> /m <sup>2</sup>                                  | ≤ 1  |  |
|  |                 |  | in <sup>2</sup> /ft <sup>2</sup>                                 | ≤ 0.0001   |  |
|  |                 | Fibres, hairs & scratches                                      | mm/m <sup>2</sup>  | ≤ 10   |  |
|  |                 |  | in/ft <sup>2</sup>   | ≤ 0.036  |  |
| <b>DIMENSIONAL TOLERANCES</b>                            |                 |  |  |  |  |
|  | EN 438-2 : 5    | Thickness  | mm   | 6.0 ≤ t < 8.0: +/- 0.40                                  |  |
|  |                 |  |  | 8.0 ≤ t < 12.0: +/- 0.50                                 |  |
|  |                 |  |  | 12.0 ≤ t < 16.0: +/- 0.60                                |  |
|  |                 |  |  | 16.0 ≤ t < 20.0: +/- 0.70                                |  |
|  |                 |  | in   | 0.2362 ≤ t < 0.3150 : +/- 0.0157                         |  |
|  |                 |  |  | 0.3150 ≤ t < 0.4724 : +/- 0.0197                         |  |
|  |                 |  |  | 0.4724 ≤ t < 0.6299 : +/- 0.0236                         |  |
|  |                 |  |  | 0.6299 ≤ t < 0.7874 : +/- 0.0275                         |  |
|  | EN 438-2 : 9    | Flatness   | mm/m   | ≤ 2  |  |
|  |                 |  | in/ft  | ≤ 0.024  |  |
|  | EN 438-2 : 6    | Length & width   | mm   | + 5 / - 0  |  |
|  |                 |  | in   | + 0.1968 / - 0   |  |
|  | EN 438-2 : 7    | Straightness of edges  | mm/m   | ≤ 1  |  |
|  |                 |  | in/ft  | ≤ 0.012  |  |
|  | Trespa Standard | Squareness   | mm   | 2550 x 1860 = max. difference between diagonals (xy) = 4 |  |
|  |                 |  |  | 3050 x 1530 = max. difference between diagonals (xy) = 4 |  |
| 3650 x 1860 = max. difference between diagonals (xy) = 5 |                 |  |  |  |  |
| 4270 x 2130 = max. difference between diagonals (xy) = 6 |                 |  |  |  |  |
| in   |                 |  | 100.39 x 73.23 = max. difference between diagonals (xy) = 0.1575 |  |  |
|  |                 |  | 120.08 x 60.24 = max. difference between diagonals (xy) = 0.1575 |  |  |
|  |                 |  | 143.70 x 73.23 = max. difference between diagonals (xy) = 0.1969 |  |  |
|  |                 |  | 168.11 x 83.86 = max. difference between diagonals (xy) = 0.2362 |  |  |
| <b>PHYSICAL PROPERTIES</b>                               |                 |  |  |  |  |
| Resistance to surface wear                               | EN 438-2 : 10   | Wear resistance - Revolutions (min)                            | Initial point  | ≥ 50   |  |
|  |                 |  | Wear value   | ≥ 150  |  |
| Resistance to impact by large diameter ball              | EN 438-2 : 21   | Indentation diameter - $\phi \leq 1$ mm with drop height 1.8 m | mm   | ≤ 10   |  |
| Resistance to scratching                                 | EN 438-2 : 25   | Force  | Rating (min)   | ≥ 3  |  |
| Resistance to dry heat (160° C / 320° F)                 | EN 438-2 : 16   | Appearance   | Rating (min)   | ≥ 4  |  |
| Resistance to wet heat (100° C / 212° F)                 | EN 438-2 : 18   | Appearance   | Rating (min)   | ≥ 4  |  |
| Resistance to immersion in boiling water                 | EN 438-2 : 12   | Mass increase (% max)  | t ≥ 6 mm   | ≤ 1  |  |
|  |                 | Thickness increase (% max)                                     | t ≥ 6 mm   | ≤ 1  |  |
|  |                 | Appearance   | Rating (min)   | ≥ 4  |  |
| Dimensional stability at elevated temperature            | EN 438-2 : 17   | Cumulative dimensional change                                  | Longitudinal %   | ≤ 0.25   |  |
|  |                 |  | Transversal %  | ≤ 0.25   |  |
| Resistance to staining                                   | EN 438-2 : 26   | Appearance - Rating (min)                                      | Group 1 & 2  | 5  |  |
|  |                 |  | Group 3  | 5  |  |
| Light fastness (xenon arc)                               | EN 438-2 : 27   | Contrast   | Grey scale ISO 105 A02   | 4-5  |  |
| Resistance to water vapour                               | EN 438-2 : 14   | Appearance   | Rating (min)   | ≥ 4  |  |
| Resistance to crazing                                    | EN 438-2 : 24   | Appearance   | Rating (min)   | ≥ 4  |  |
| Modulus of elasticity                                    | EN ISO 178      | Stress   | MPa  | ≥ 9000   |  |
| Flexural strength  | EN ISO 178      | Stress   | MPa  | ≥ 120  |  |
| Tensile strength   | EN ISO 527-2    | Stress   | MPa  | ≥ 70   |  |
| Density  | EN ISO 1183     | Density  | g/cm <sup>3</sup>  | ≥ 1.35   |  |

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|   |                    |  |           | STANDARD: EN 438-4                       | STANDARD: EN 438-4                         |
|   |                    |  |           | COLOUR/DECOR: ALL <sup>B</sup>           | COLOUR/DECOR: ALL <sup>B</sup>             |
| <b>PHYSICAL PROPERTIES</b>                            |                    |  |           |  |  |
| Resistance to fixings                                 | ISO 13894-1        | Pull out strength                      | N         | 6 mm : ≥ 2000                            |  |
|   |                    |  |           | 8 mm : ≥ 3000                            |  |
|   |                    |  |           | ≥ 10 mm : ≥ 4000                         |  |
|   |                    |  |           | 0.2362 in : ≥ 2000                       |  |
|   |                    |  |           | 0.3150 in : ≥ 3000                       |  |
| ≥ 0.3937 in : ≥ 4000                                  |                    |  |           |  |  |
| <b>FIRE PERFORMANCE</b>                               |                    |  |           |  |  |
| <b>EUROPE</b>   |                    |  |           |  |  |
| Reaction to Fire                                      | EN 13501-1         | Classification t = 6 mm /<br>0.2362 in | Euroclass | Ds2, d0                                  | Bs2, d0                                    |
|   |                    | Classification t ≥ 8 mm /<br>0.3150 in | Euroclass |  | Bs1, d0                                    |
| <b>NORTH AMERICA</b>                                  |                    |  |           |  |  |
| Material Surface Burning Characteristics <sup>C</sup> | ASTM E84/UL<br>723 | Classification                         | Class     | B  | A  |
|   |                    | Flame Spread Index                     | FSI       | 26-75                                    | 0-25                                       |
|   |                    | Smoke Developed Index                  | SDI       | 0-450                                    | 0-450                                      |
| <b>OTHER PROPERTIES</b>                               |                    |  |           |  |  |
| Release of formaldehyde                               | EN 717-2           | Classification                         | Class     | E1                                       |  |

A Due to conversion from metric values, the US values provided are approximate.

B All data are related to the products mentioned in the Trespa® TopLab<sup>VERTICAL</sup> standard delivery programme.

C Laboratory test results are not intended to represent hazards that may be present under actual fire conditions.