PURICELLI
DECORATIVE SURFACES

# PURILAM | HEAVY DUTY
## MATERIAL PROPERTIES DATA SHEET

PURILAM TOP is a high pressure decorative laminates (HPL), having thickness less than 2 mm, according to EN 438-1:2016, EN 438-2:2016 and EN 438-3:2016, normally intended for bonding to supporting substrates.
The core is composed of layers of kraft paper impregnated with thermosetting resins. The decorative surface, in one or both sides, is made of paper impregnated with aminoplastic thermosetting resins. All the layers are bonded together by a high pressure and high temperature process to obtain a high density homogeneous non-porous material. PURILAM HEAVY DUTY is available in standard HDS type, flame retardant HDF type and postformable HDP type according to EN 438-3:2016, both suitable for heavy-duty use.

| PROPERTIES | TEST METHOD | PROPERTY OR ATTRIBUTE | VALUES | UNIT |
|---|---|---|---|---|
| GENERAL PROPERTIES | | | | |
| *Surface quality* | EN 438-2:2016 Par. 4 | Spots, dirt and similar surface defects<br>Fibers, hair and scratches | ≤ 1<br>≤ 10 | $mm^2/m^2$<br>$mm/m^2$ |
| *Dimensional tolerances* | EN 438-2:2016 Par. 5 | Thickness [1] | ± 0,10 0,5 ≤ t < 1,0<br>± 0,15 1,0 ≤ t < 2,0 | mm |
| | EN 438-2:2016 Par. 6 | Length and width | + 10 / - 0 | mm |
| | EN 438-2:2016 Par. 7 | Straightness of edges | ≤ 1,5 | mm/m |
| | EN 438-2:2016 Par. 8 | Squareness | ≤ 1,5 | mm/m |
| | EN 438-2:2016 Par. 9 | Flatness (measured on full-size sheet) | ≤ 60 | mm/m |
| PHYSICAL PROPERTIES | | | | |
| *Resistance to immersion in boiling water* | EN 438-2:2016 Par. 12 | Surface appearance | ≥ 3 gloss finish<br>≥ 4 other finishes | Rating |
| *Dimensional stability at elevated temperatures* | EN 438-2:2016 Par. 17 | Cumulative dimensional change | ≤ 0,45<br>≤ 0,90 | Longitudinal % [2]<br>Transversal % [2] |
| *Resistance to impact by small diameter ball* | EN 438-2:2016 Par. 20 | Spring force | ≥ 25 | N |
| *Resistance to impact by large diameter ball* | EN 438-2:2016 Par. 21 | Drop height<br>Indent diameter | ≥ 1000<br>≤ 10 | mm |
| *Resistance to cracking under stress* | EN 438-2:2016 Par. 23 | Appearance | ≥ 4 | Rating |
| *Density* | EN ISO 1183 | Density | ≥ 1,35 | $g/cm^3$ |
| SURFACE PROPERTIES | | | | |
| *Resistance to surface wear* | EN 438-2:2016 Par. 10 | Initial point | ≥ 350 | Revolutions |
| *Resistance to water vapour* | EN 438-2:2016 Par. 14 | Appearance | ≥ 3 gloss finish<br>≥ 4 other finishes | Rating |
| *Resistance to dry heat (160°C)* | EN 438-2:2016 Par. 16 | Appearance | ≥ 3 gloss finish<br>≥ 4 other finishes | Rating |
| *Resistance to wet heat (100°C)* | EN 438-2:2016 Par. 18 | Appearance | ≥ 3 gloss finish<br>≥ 4 other finishes | Rating |
| *Resistance to scratching* | EN 438-2:2016 Par. 25 | Force | ≥ 3 | Rating |
| *Resistance to staining* | EN 438-2:2016 Par. 26 | Appearance | 5 groups 1 & 2<br>≥ 4 group 3 | Rating |
| *Light Fastness (Xenon-arc)* | EN 438 -2:2016 Par. 27 | Contrast | ≥ 4 | Grey scale rating |
| POSTFORMING GRADE PROPERTIES – HDP Type | | | | |
| *Formability* | EN 438-2:2016 Par. 32 | Bending radius | ≤ 10 x t Longitudinal [2]<br>≤ 20 x t Transversal [2] | mm |
| *Resistance to blistering* | EN 438-2:2016 Par. 34 | Time to blister | ≥ 10 t < 0,8 mm<br>≥ 15 t ≥ 0,8 mm | s |
| FIRE PERFORMANCES | | | | |
| Reaction to fire | The reaction to fire of Purilam heavy duty is related to the final composite panel where the laminate is bonded to a substrate. The composite manufacturer is responsible for the correct execution of the test in accordance with the applicable standards and test methods required for the specific application field as the test results also depend on the substrate, the adhesive and the bonding technique applied. | | | |
| FOOD & HYGIENE PROPERTIES | | | | |
| *Contact with food - overall migration* | EN 1186 | Acetic acid 3 %<br>Ethanol 50 %<br>Ethanol 95 %<br>Isooctane | ≤ 10<br>≤ 10<br>≤ 10<br>≤ 10 | $mg/dm^2$ |

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| ENVIRONMENTAL PROPERTIES | | | | |
|---|---|---|---|---|
| *Formaldehyde emission* | EN 13986 | Formaldehyde emission rating | E1 | Rating |
| *Volatile organic chemical emission* | AFNOR NF EN ISO 16000-9 | Classification | A+ | Rating |
| | | TVOC emission | ≤ 0,2 | mg/m$^3$ |
| *Phenol Free* [3] | AFNOR NF EN ISO 16000-9 | Phenol emission | < 0,002 | mg/m$^3$ |

**Notes**
(1) t: nominal thickness [mm]
(2) Longitudinal: parallel to the fiber direction (usually parallel to the direction of sanding). Transversal: at right angles to the fiber direction
(3) Phenol is not used as raw material in PURILAM production. 0,002 mg/m$^3$ is the detection limit (DL) value of the test.

**Note to PURILAM sheets with adhesive protective film**
The protective films are designed for temporary surface protection against dirt, scratches and tool marks; they are not designed for protection against corrosion, humidity or chemicals. The laminates covered with the protective film shall be stored in a clean, dry place (40 to 60 RH%) at room temperature (20 to 25 °C), avoiding weathering and UV exposure. In any case, the removal must be made within four months from the date of shipment by Puricelli. Puricelli cannot be responsible for the misuse of the laminates covered with the protective film, nor for the consequences for non-recommended applications.