Physical material properties
of the applied materials

FRINORM®

# Frame extension elements for wooden and wood-metal lifting sliding doors
## Standard

| Chipboard | Symbol | Test method | Unit | Value |
|---|---|---|---|---|
| Classification | P5 in acc. with EN 312, boards for load-bearing purposes in damp environments | | | |
| Emission category | E1 | | | |
| Certification | PEFC-certified | | | |
| Gross density | $\rho_a$ | | kg/m³ | ~715–740 |
| Thermal conductivity | $\lambda_D$ | | W/mK | 0.140 |
| Fire behaviour | | EN 13501-1 | | D-s2, d0 |
| Thickness tolerance within and between the boards | | EN 324-1 | mm | ±0.3 |
| Board moisture | | EN 322 | % | 5–13 |
| Formaldehyde potential category E1 | | EN 120 | mg/100 g | Max. 8.0 |
| Thickness swelling (after 24 hrs) | | EN 317 | % | 10.0 |
| Bending strength | | EN 310 | N/mm² | 16.0 |
| Bending elasticity modulus | | EN 310 | N/mm² | 2400 |
| Transverse tensile strength | | EN 319 | N/mm² | 0.45 |
| Transverse tensile strength after boil test | | EN 1087-1 | N/mm² | 0.14 |
| Water vapour permeability (density: 600 kg/m³) | | EN 13986 | μ, damp<br>μ, dry | 15<br>50 |
| Degree of sound absorption | | | 250–500 Hz<br>1000–2000 Hz | 0.10<br>0.25 |
| Swelling and shrinkage in panel plane<br>(Change of board moisture: 1%) | | | % | 0.02–0.05 |

| MDF | Symbol | Test method | Unit | Value |
|---|---|---|---|---|
| Classification | Medium-density fibreboard for use in damp environments, low-swelling, water-resistant | | | |
| Formaldehyde emission | | EN 120 | Class | E1 |
| Fire behaviour | | EN 13501-1 | Class | C-s2, d0 |
| Raw density | | EN 323 | kg/m³ | 750 |
| Thermal conductivity | | | W/mK | 0.100 |
| Transverse tensile strength | | EN 319 | N/mm² | 1.35 |
| Surface soundness | | EN 311 | N/mm³ | 2.0 |
| Bending strength | | EN 310 | N/mm⁴ | 22.0 |
| Elasticity modulus | | EN 310 | N/mm⁵ | 2300 |

| Expanded rigid polystyrene foam (EPS) | Symbol | Test method | Unit | Value |
|---|---|---|---|---|
| Gross density | $\rho_a$ | 1602 | kg/m³ | 15 |
| Thermal conductivity | $\lambda_D$ | 279 | W/(m·K) | 0.038 |
| Specific thermal capacity | c | | Wh/(kg·K) | 0.39 |
| Water vapour diffusion resistance factor | μ | 12086 | | 40 |
| Fire behaviour classification in acc. with EN | | 13501-1 | | E |
| Fire behaviour classification in acc. with VKF | | VKF | BKZ | 5,1 |
| Fire behaviour group | | VKF | | RF2 (cr) |
| Compression stress at 10% compression | $\sigma_{10}$ | 826 | kPa [3]) | ≥ 60 |
| Creep behaviour under pressure<br>(50 years, compression 2%) | $\sigma_c$ | 1606 | kPa [3]) | 12 |
| Top application limit temperature,<br>non-weight-bearing | | | °C | 75 |
| Cell content | | | | Air |

| Plywood | Symbol | Test method | Unit | Value |
|---|---|---|---|---|
| Gross density | $\rho_a$ | EN 323 | kg/m³ | ~420 |
| Thermal conductivity | $\lambda_D$ | | W/mK | 0.130 |
| Emission category | | UNI EN 717/2 | mg HCHO/m²h | E1 |
| Bending strength (longitudinal) | | EN 310 | N/mm² | 24 |
| Bending strength (lateral) | | EN 310 | N/mm² | 30 |
| Elasticity modulus (longitudinal) | | EN 310 | N/mm² | 2800 |
| Elasticity modulus (lateral) | | EN 310 | N/mm² | 3800 |

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