NP4LPCEv6

## Essential characteristics

<table>
<thead>
<tr>
<th>Performance</th>
<th>Thickness(mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18mm 1200x3000mm T&amp;G 2 edges</td>
<td></td>
</tr>
</tbody>
</table>

### Characteristic Strength (N/mm²)

- Bending $f_m$  
  12.5
- Compression $f_c$  
  11.1
- Tension $f_t$  
  7.9
- Panel Shear $f_p$  
  6.1
- Planar shear $f_r$  
  1.6

### Mean Stiffness (MOE) (N/mm²)

- Tension $E_t$  
  1700
- Compression $E_c$  
  1700
- Bending $E_m$  
  2900
- Panel Shear $G_v$  
  830

### Punching Shear Characteristic strength under point load $F_{max, k}$ (kN)

- (for floors and roofs)  
  NPD

### Punching Shear Mean stiffness under point load, $R_{mean}$ (N/mm)

- (for floors and roofs)  
  NPD

### Racking resistance (for walls)

- Characteristic Strength $F_{Rd,max}$ (N)  
  NPD

### Soft Body Impact resistance

- Floor/roofs  
  NPD
- Walls  
  NPD

### Embedment Strength $f_e$ (N/mm²)  
  NPD

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NORBORD Europe Ltd  
Station Road  
Cowie  
Stirling  
Scotland  
FK7 7BQ  

DoP ref: NP4LPDoPv6  
2812  
04  
E1  
P4  

10mm to 38mm  
Structural use in dry conditions
2 Reaction to fire
(see notes to table for field of application details and associated documentation references)

<table>
<thead>
<tr>
<th>Minimum thickness</th>
<th>Class (excluding floorings)$^{g}$</th>
<th>Class (Flooring)$^{h}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without an air gap behind the panel $^{a,b,e,f}$</td>
<td>9</td>
<td>D-s2,d0</td>
</tr>
<tr>
<td>With a closed or open air gap ≤ 22mm behind the panel $^{c,d,e,f}$</td>
<td>9</td>
<td>D-s2,d2</td>
</tr>
<tr>
<td>Closed air gap behind the panel $^{d,e,f}$</td>
<td>15</td>
<td>D-s2,d0</td>
</tr>
<tr>
<td>With an open air gap behind the panel $^{d,e,f}$</td>
<td>18</td>
<td>D-s2,d0</td>
</tr>
<tr>
<td>Any end use $^{e,f}$</td>
<td>3</td>
<td>E</td>
</tr>
</tbody>
</table>

- a - Mounted without an air gap directly against class A1 or A2-s1, d0 products with minimum density 10kg/m3 or at least class D-s2, d2 products with minimum density 400 kg/m3.
- b - A substrate of cellulose insulation material of at least class E may be included if mounted directly against the wood-based panel, but not for floorings.
- c - Mounted with an air gap behind. The reverse face of the cavity shall be at least class A2-s1, d0 products with minimum density 10 kg/m3.
- d - Mounted with an air gap behind. The reverse face of the cavity shall be at least class D-s2, d2 products with minimum density 400 kg/m3.
- e - Veneered, phenol- and melamine-faced panels are included for class excl. floorings.
- f - A vapour barrier with a thickness up to 0,4 mm and a mass up to 200 g/m$^2$ can be mounted in between the wood-based panel and a substrate if there are no air gaps in between.
- g - Class Provided for in Table 1 of the Annex to decision 2000/147/EC
- h - Class Provided for in Table 2 of the Annex to decision 2000/147/EC

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<tr>
<td>Thickness(mm)</td>
<td>18mm 1200x300mm T&amp;G 2 edges</td>
</tr>
<tr>
<td>Water vapour permeability $\mu$</td>
<td>NPD</td>
</tr>
<tr>
<td>Release of formaldehyde</td>
<td>£1</td>
</tr>
<tr>
<td>Release (content) of pentachlorophenol (PCP)</td>
<td>≤5ppm</td>
</tr>
<tr>
<td>Airborne sound insulation (surface mass) $R$ (dB)</td>
<td>NPD</td>
</tr>
<tr>
<td>$^a$Sound absorption Frequency range 250Hz to 500Hz ($\alpha$)</td>
<td>0.1</td>
</tr>
<tr>
<td>$^a$Sound absorption Frequency range 1000Hz to 2000Hz ($\alpha$)</td>
<td>0.25</td>
</tr>
<tr>
<td>Thermal conductivity $\lambda$ (W/m.K)</td>
<td>NPD</td>
</tr>
<tr>
<td>Air Permeability $V_0$ (m3/h)</td>
<td>NPD</td>
</tr>
</tbody>
</table>

**Durability**

<table>
<thead>
<tr>
<th>Mechanical ($k_{dur}$)</th>
<th>Service class 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal bond (N/mm$^2$)</td>
<td>0.35</td>
</tr>
<tr>
<td>Swelling in thickness (%)</td>
<td>15</td>
</tr>
</tbody>
</table>

**Mechanical ($k_{mod}$)**

<table>
<thead>
<tr>
<th>Service class 1</th>
<th>Permanent</th>
<th>Long Term</th>
<th>Medium Term</th>
<th>Short Term</th>
<th>Instantaneous</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.30</td>
<td>0.45</td>
<td>0.65</td>
<td>0.85</td>
<td>1.1</td>
<td></td>
</tr>
</tbody>
</table>

**Biological**

| Use classes 1 |
NOTES TO TABLE

1 Taken from EN 12369-1:2001


3 Taken from Table 10 of EN 13986:2004+A1:2015

4 Taken from Eurocode 5 EN 1995-1-1 2004+A2:2014