ECO21dB
Material Data Sheet

Material Description & Properties
Agglomerated Cork & recycled HD EVA underlay for impact noise and thermal insulation.

KEY FEATURES
- Helps to protect LVT flooring from damage to the click-system joints.
- Maximize the service level of the joining system connecting the laminate boards.
- Excellent load absorption capacity.
- Excellent acoustic insulation.
- High durability.
- Excellent for heated floors.
- Anti-slip underlay.

Tested according to MMFA/EPLF higher requirements groups 1 and 2.

STANDARD DIMENSIONS

<table>
<thead>
<tr>
<th>Test</th>
<th>Limit</th>
<th>Unit</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>—</td>
<td>kg/m³</td>
<td>550 - 650</td>
</tr>
<tr>
<td>Punctual Conformability</td>
<td>≥ 0.5</td>
<td>mm</td>
<td>≥ 1</td>
</tr>
<tr>
<td>Compression Strength</td>
<td>≥ 400</td>
<td>kPa</td>
<td>800</td>
</tr>
<tr>
<td>Compression Creep</td>
<td>≥ 35</td>
<td>kPa</td>
<td>50</td>
</tr>
<tr>
<td>Impact Sound</td>
<td>≥ 18</td>
<td>dB</td>
<td>21</td>
</tr>
<tr>
<td>Thermal Resistance (R)*</td>
<td>≤ 0.15</td>
<td>m²K/W</td>
<td>0.015</td>
</tr>
<tr>
<td>Dynamic Load (DL)</td>
<td>&gt; 100 000</td>
<td>cycles</td>
<td>&gt; 100 000</td>
</tr>
</tbody>
</table>

* Suitable for underfloor heating and cooling.

THERMAL INSULATION

<table>
<thead>
<tr>
<th>Test</th>
<th>Limit</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Conductivity (1)</td>
<td>0.1036 W/mK</td>
<td></td>
</tr>
<tr>
<td>Thermal Resistance</td>
<td>0.015 (m²·°C/W)</td>
<td></td>
</tr>
</tbody>
</table>

(1) EN 8301

PHYSICAL AND MECHANICAL PROPERTIES

<table>
<thead>
<tr>
<th>Test</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Weight (1)</td>
<td>550 - 650 Kg/m³</td>
</tr>
<tr>
<td>Tensile Strength Longitudinal</td>
<td>≥ 600 kPa</td>
</tr>
<tr>
<td>Compression at 0.7MPa (1)</td>
<td>10-20 %</td>
</tr>
<tr>
<td>Recovery after 0.7MPa (1)</td>
<td>≥ 70 %</td>
</tr>
</tbody>
</table>

(1) ISO 7322

Tested according to MMFA/EPLF higher requirements groups 1 and 2.
ACOUSTICAL RESULTS


<table>
<thead>
<tr>
<th>Thickness</th>
<th>1.6mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flooring</td>
<td>Vinyl</td>
</tr>
<tr>
<td>$\Delta L_w$</td>
<td>21 dB</td>
</tr>
</tbody>
</table>

**TEST APPARATUS ($\Delta L_w$)**

- 01. Floor covering composed by loose-lay or click system LVT
- 02. Agglomerated cork and recycled EVA resilient layer - Amorim ECO21dB
- 03. Reinforced concrete slab of thickness 140mm

$L_n,r$ - Normalized impact sound pressure level of the reference floor with the floor covering under test;  
$L_{n,0}$ - Normalized impact sound pressure level of the Lab reference floor;  
$\Delta L_w$ - Impact sound pressure level reduction index of the covering under test, on a normalized floor;
**Physical and Mechanical Properties**

### Compressive Strength

<table>
<thead>
<tr>
<th>Time [h]</th>
<th>Stress [MPa]</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10^1$</td>
<td>0</td>
</tr>
<tr>
<td>$10^2$</td>
<td>0.1</td>
</tr>
<tr>
<td>$10^3$</td>
<td>0.3</td>
</tr>
<tr>
<td>$10^4$</td>
<td>0.5</td>
</tr>
<tr>
<td>$10^5$</td>
<td>1.0</td>
</tr>
<tr>
<td>$10^6$</td>
<td>2.0</td>
</tr>
<tr>
<td>$10^7$</td>
<td>4.0</td>
</tr>
<tr>
<td>$10^8$</td>
<td>8.0</td>
</tr>
</tbody>
</table>

**Creep Deflection @ 50 kPa (% of Start Height)**

**Installation**

**Glued Floors**

1. Reinforced concrete slab
2. Adhesive
3. Agglomerated cork resilient layer - ECO21 dB
4. Floor covering composed of glued LVT
5. Perimeter insulation barrier
6. Vapor barrier
7. Floor covering composed of a non glued LVT

**Non Glued Floors**

Note: Following ISO8013-1998 measured in Cantilever Test System
GENERAL INSTALLATION INSTRUCTIONS

General application instructions
The following installation instructions are recommended by Amorim Cork Composites, but are not intended as a definitive product specification. They are presented in an attempt to be used with recommended installation procedures of flooring manufacturers.

Room conditions
Temperature > 10°C / Relative Humidity < 75%

Underlay Amorim EC021dB installation instructions
It is necessary to open the packaging at least 48 hours in advance, before installing UNDERLAY Amorim EC021dB, and leave it in the room where the installation will be carried out. Cut the UNDERLAY Amorim EC021dB roll lengthwise to the desired height and install it directly over the entire floor surface covering the wall up to a 30 mm height with the edge, removing all trapped air. After finishing the installation, UNDERLAY Amorim EC021dB should cover the entire floor area without any cracks and with the joints perfectly sealed, preferably with adhesive tape.

Air tightness
Air tightness is one of the keys to effective sound insulation. Sound is carried in the air and sound will leak through any gaps or holes in an installation. So it is very important that all gaps and holes between floors and also floors and walls are filled and properly sealed, this can be done using proprietary gap filling products and sealants. Ensure that all products used are suitable for the specific installation and if in doubt seek the advice of the manufacturer of the sealant or gap filler.

Perimeter isolation
Another common problem which affects the acoustic performance of a floor is flanking. Flanking occurs when sound bypasses the main separating elements of the construction and finds acoustically weak paths. Ideally flanking sound paths formed by the junctions between separating wall and floor constructions will have been treated in the subfloor and wall construction, thereby isolating the individual elements. However, where noise has become a problem it may be that the correct flanking treatment for the building has not been followed. With this in mind, and for best acoustic results it may be necessary to install a perimeter isolation strip to minimize any potential flanking to the other parts of the building structure (Amorim EC021dB can be turned up the wall if perimeter isolation strips are not available), this includes walls and columns as well as exposed pipes, ducting or any other component protruding from the floor. When the flooring application is completed, the exceeding part of the perimeter isolation strip must be cut. If flanking is thought to be a specific problem it may be necessary to seek further specialist acoustic advice.

Sub Floor conditions and Floor Preparation
In general sub floor conditions should comply with the requirements of the code of good practices and specific instructions from the manufacturer of the finished floor. Basically, this means that all sub floors should be clean, dry, level and structurally sound and free from any cracks and contamination. All cracks and holes should be adequately repaired to ensure a smooth finished appearance, patching and levelling compounds must be suitable for the end use application and must be compatible with the adhesives to be used (when applicable). The moisture content of the subfloor should not be more than 2.5% (CM) by weight measured on concrete subfloors.

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Vapour Insulation Barrier (only for Non Glued LVT)
A PE (Polyethylene) vapour insulation barrier should be installed covering the entire flooring area, minimum 50mm wide vertically around the perimeter of the entire floor MUST be installed prior to Amorim EC021dB. Install by overlapping (minimum 100mm) the PE foil, and use an adequate tape to adhere/fix it, if necessary. After completion, PE foil should cover the entire concrete area without gaps. Never mechanically fasten the PE foil barrier with screws, nails or staples as this will severely diminish the performance of the insulation barrier.

Installation – Glued Floors
It is not essential to start installation in the centre of the room, it is generally more practical to start along the longest wall running the rolls in parallel. Wherever possible the product should be installed at 90° to the finished floor so that the chance of coinciding joints is minimized. The Amorim EC021dB should be dry laid into workable areas and cut at least 50 mm over the length and all air bubbles are released. The Amorim EC021dB should then be fully rolled into the adhesive using a 68kg articulated flooring roller to ensure full adhesion along the entire length and width of the product. All edges should be butt jointed ensuring that all seams and joints are smooth without any voids but not too tight.

Final Flooring
Always follow the manufacturer’s recommended installation instructions.

Recommended Adhesives:
LVT to Amorim EC021dB: Water-Based Emulsion/Synthetic Resin Glue.
Amorim EC021dB to slab/screw: Water-Based Emulsion/Acrylic Adhesives.

Important Notes
Never mechanically fasten the Amorim EC021dB to the flooring floor as this will severally diminish its acoustical value.

Application Process

NON GLUED FLOORS

1. Installation of vapour insulation barrier;
2. Application of perimeter barrier;
3. Application of underlay;
4. Application of the tape on joints between rolls;
5. Application of final flooring;
6. Cutting perimeter barrier.

GLUED FLOORS

1. Application of perimeter barrier;
2. Application of underlay (glued);
3. Application of final flooring (glued);
4. Cutting perimeter barrier.

The data provided in this Material Data Sheet represents typical values. This information is not intended to be used as a purchasing specification and does not imply suitability for use in a specific application. Failure to select the proper product may result in either equipments damage or personal injury. Please contact Amorim Cork Composites regarding specific application recommendations. Amorim Cork Composites expressly disclaims all warranties, including any implied warranties or merchantability or of fitness for a particular purpose. Amorim Cork Composites is not liable for any indirect special, incidental, consequential, or punitive damages.