cork cell microscopic view

CORK
AN EXCEPTIONAL RAW MATERIAL

Cork is commonly described as being the bark of the cork oak (Quercus Suber L.), which means that it is 100% natural plant tissue that covers its trunk and branches.

It consists of a honeycomb-like structure of microscopic cells filled with an air-like gas and coated mainly with suberin and lignin. One cubic centimetre of cork contains about 40 million cells.

Cork is also known as the "nature's foam" due to its alveolar structure. It has a closed cell structure making it lightweight, airtight and watertight, resistant to acids, fuels and oils, and impervious to rotting.

It is sustainably harvested by specialized professionals without damaging the trunk, meaning that the tree itself lives to grow another bark layer that, in time, will be harvested once again. Over the course of its lifetime, which on average lasts 200 years, it may be stripped around 17 times meaning that cork is not only a natural material, but also a renewable and recyclable one.

- **Excellent Acoustic Insulation**
- **Excellent Thermal Insulation**
- **Good resilience, excellent compressibility and recovery**
- **Extremely light and buoyant**
- **100% natural, reusable and recyclable**

ACOUSTICORK

REINVENTING SUSTAINABLE, GREEN AND ACOUSTIC INSULATION

ACOUSTICORK natural base materials for demanding applications

Amorim Cork Composites specific compound formulations for acoustic insulation and vibration control allow for the possibility to create highly isolative or dampening materials able to comply with a wide range of environmental conditions and chemical resistances.

The combination of cork granules with diverse polymers brings added characteristics to different compounds for use as acoustic or vibration control materials.

ACOUSTICORK maximises energy efficiency

Cork absorbs energy due to its unique compressibility and recovery characteristics yielding higher loss factors that are essential for the dampening function, while its extremely low poison ratio improves the behaviour of such materials in dynamic loading applications.

EFFICIENCY, RESILIENCE AND DURABILITY

UNDERLAY

UNDERSCREED

VIBRATION CONTROL

WALL BEARING

UNDERLAY

ACOUSTICORK has solutions
for different types of final flooring.

Flooring \ Underlay		 T22	 T61		 T66	 T85	
Non Glued Laminate	Thickness	-	2mm		3mm	2mm	
	ΔLW	-	20dB		19dB	19dB	
	IIC	-	54dB		47dB	49dB	
Glued Down Wood	Thickness	3mm	3mm	3mm perforated	3mm	2mm	
	ΔLW	20dB	26dB	18dB	16dB	14dB	
	IIC	49dB	59dB	51dB	50dB	49dB	
Ceramic (Or Natural Stone)	Thickness	-	5mm CE		3mm	2mm	
	ΔLW	-	16dB		16dB	12dB	
	IIC	-	50dB		51dB	46dB	
LVT	Thickness	-	-		3mm	1,6mm	2mm
	ΔLW	-	-		19dB	17dB	-
	IIC	-	-		51dB	52dB	54dB

ACOUSTICORK

T61
MATERIAL DATA SHEET

MATERIAL DESCRIPTION & PROPERTIES

NON GLUED LAMINATE FLOORS		ΔL_w = 20dB
GLUED DOWN WOOD FLOORS		ΔL_w = 26dB
GLUED DOWN WOOD FLOORS PERFORATED		ΔL_w = 18dB
CERAMIC OR NATURAL STONE FLOORS		ΔL_w = 16dB CE

100% Natural and Sustainable Product
Impact Noise Reduction and Thermal Insulation Properties
High Durability and Long Term Resilience
High Performance with Reduced Thickness

PRODUCT DESCRIPTION
Agglomerated cork underlay for impact noise and thermal insulation.

THERMAL PROPERTIES
Thermal Conductivity: 0,04 W/mK (1)

(1) ISO 8301

PHYSICAL AND MECHANICAL PROPERTIES

Specific Weight (1)	Tensile Strength (1)	Compression at 0,7MPa (1)	Recovery after 0,7MPa (1)
150 - 200 Kg/m³	> 200 KPa	30%	> 70%

(1) ISO 7322

ACOUSTICAL RESULTS

Flooring	Thickness (mm)	ΔL_w (dB) (1)	IIC (dB) (2)
Non Glued Laminate	2	20	54
Glued Down Wood	3	26	59
	3 perforated	18	51
Ceramic (or Natural Stone)	5 CE	16	50

(1) ISO 10140-1, ISO 10140-3 & ISO 10140-4 • (2) ASTM E492-09 & ASTM E989-06

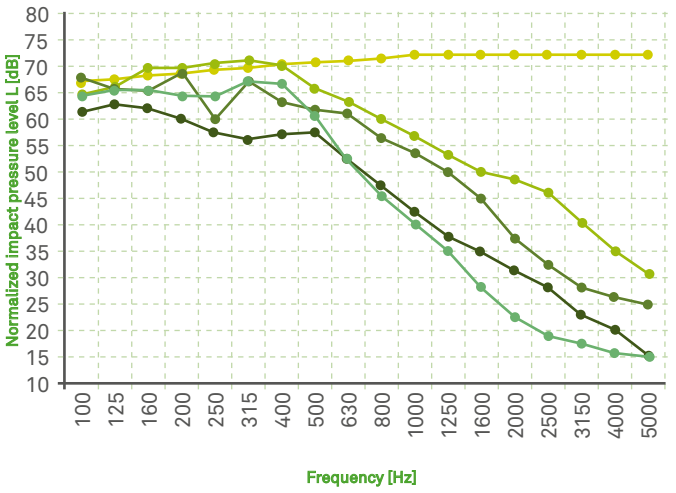
STANDARD DIMENSIONS

Thickness (mm)	2	3	3 perforated	5
Width (m) x Length (m)	1 x 10	1 x 10	0,5 x 10	1 x 10

Others sizes available upon request

ACOUSTICAL RESULTS

Test procedure according to standards ISO 10140-1:2010; ISO 10140-3:2010; ISO 10140-4:2010 and ISO 717-2:2013

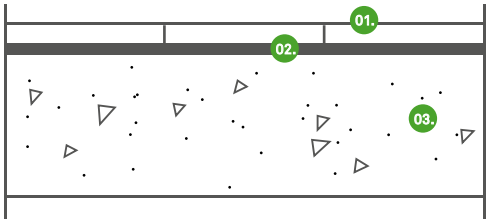


$L_{n,r}$ - Normalized impact sound pressure level of the reference floor with the floor covering under test;
$L_{n,r,0}$ - Normalized impact sound pressure level of the Lab reference floor;
ΔL_w - Impact sound pressure level reduction index of the covering under test, on a normalized floor;

$L_{n,r,0}$ (dB)
$L_{n,r}$ (dB) - 3mm - GDW*
$L_{n,r}$ (dB) - 5mm - Ceramic
$L_{n,r}$ (dB) - 2mm - Laminate
$L_{n,r}$ (dB) - 3mm perforated- GDW*

*Glued Down Wood

TEST APPARATUS (ΔL_W & IIC)



01. Floor covering composed by glued down wood, non glued laminate floor or ceramic or natural stone tiles

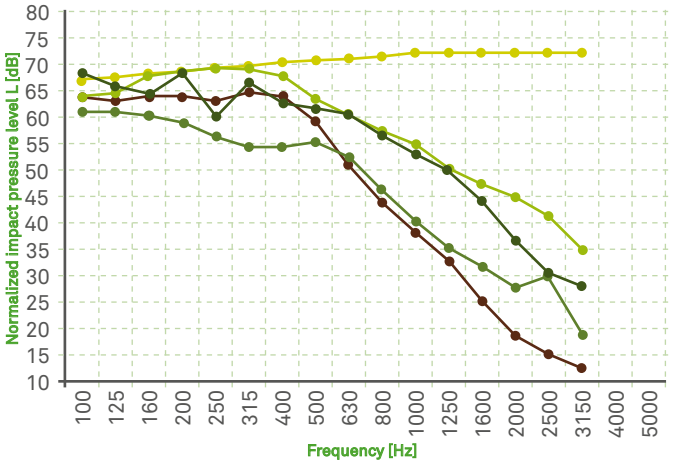
02. Agglomerated cork resilient layer - T61

03. Reinforced concrete slab of thickness 140mm

Ref. Test Report	Thickness	Flooring	$L_{n,r,w}$ ($C_{I,r}$)	ΔL_w ($C_{I,\Delta}$)
SRL C/06/5L/3676/1a	2 mm	Non Glued Laminate	58 (0) dB	20 (-11) dB
SRL C/06/5L/3676/1a	3 mm	Glued Down Wood	52 (1) dB	26 (-12) dB
ACL034/16	3 mm perforated	Glued Down Wood	60 (0) dB	18 (-11) dB
SRL C/06/5L/3676/1a	5 mm	Ceramic (or Natural Stone)	62 (0) dB	16 (-11) dB

ACOUSTICAL RESULTS

Test procedure according to standards ISO 10140-1:2010; ISO 10140-3:2010; ISO 10140-4:2010. Normalized impact sound pressure level and IIC raiting determinated according to standards ASTM E492-09 and ASTM E989-06.



L_{ref} - Normalized impact sound pressure level of the reference floor with the floor covering under test;
$L_{ref,c}$ - Normalized impact sound pressure level of the Lab reference floor;

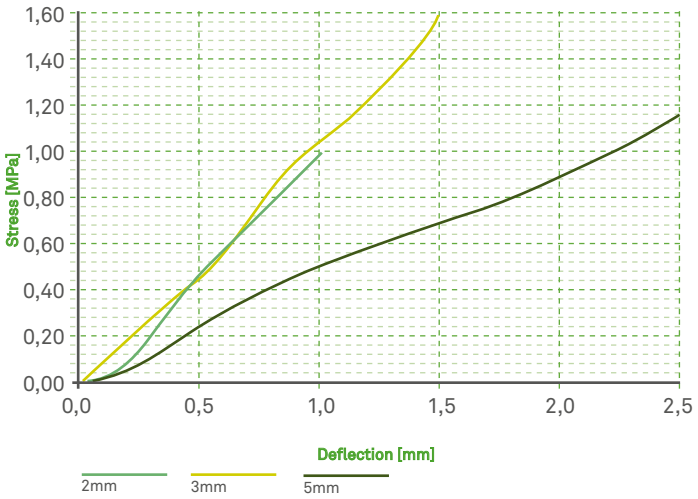
L_{ref} (dB)
$L_{ref,c}$ (dB) - 3mm - GDW*
$L_{ref,c}$ (dB) - 5mm - Ceramic
$L_{ref,c}$ (dB) - 2mm - Laminate
$L_{ref,c}$ (dB) - 3mm perforated - GDW*

*Glued Down Wood

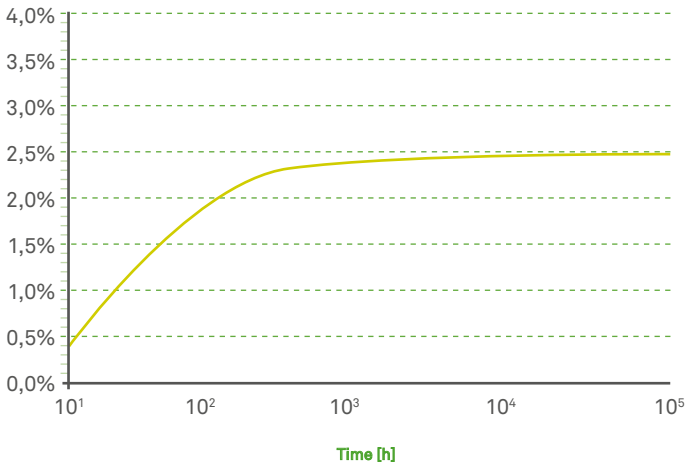
Thickness	Flooring	IIC_c
2 mm	Laminate	54 dB
3 mm	Glued Down Wood	59 dB
3 mm perforated	Glued Down Wood	51 dB
5 mm	Ceramic (or Natural Stone)	50 dB

PHYSICAL AND MECHANICAL PROPERTIES

LOAD DEFLECTION



CREEP DEFLECTION @ 0,0045MPa (% OF START HEIGHT)



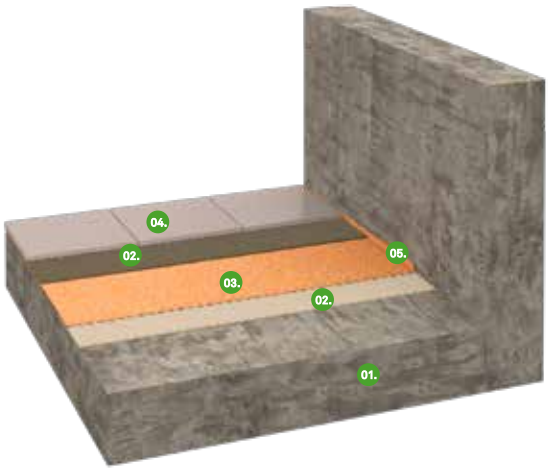
DYNAMIC STIFFNESS

Test procedure according to standards ISO 9052-1, ISO 7626- 5

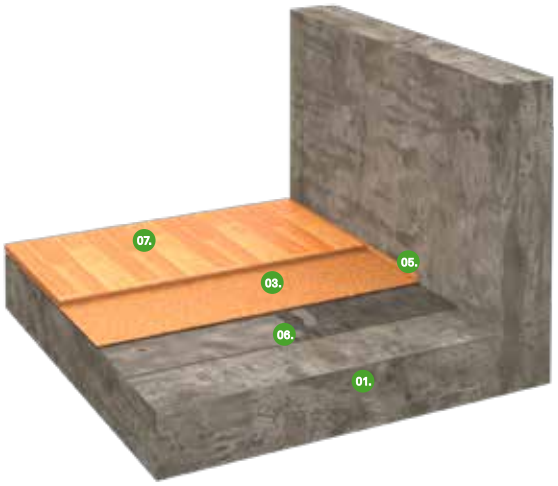
Thickness (mm)	Dynamic Stiffness (MN/m³)
2	98
3	96
5	93

INSTALLATION

GLUED FLOORS



NON GLUED FLOORS



01. Reinforced concrete slab

02. Adhesive

03. Agglomerated cork resilient layer - T61

04. Floor covering composed by glued down wood, ceramic or nature stone

05. Perimeter insulation barrier

06. Vapor barrier

07. Floor covering composed by non glued laminate floor

NON GLUED LAMINATE FLOORS		ΔL_w = 20dB
GLUED DOWN WOOD FLOORS		ΔL_w = 26dB
GLUED DOWN WOOD FLOORS PERFORATED		ΔL_w = 18dB
CERAMIC OR NATURAL STONE FLOORS		ΔL_w = 16dB CE

T61
UNDERLAY

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

Room Conditions
Temperature > 10ºC / Room moisture content < 75%.

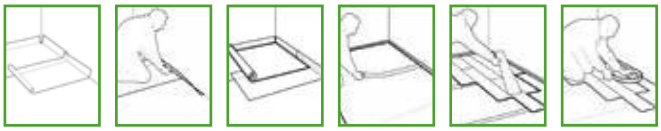
Subfloor
All subfloor work should be structurally sound, clear and level. The moisture content of the subfloor should not be more than 2.5% (CM) by weight measured on concrete subfloors.

Vapor Insulation Barrier (only for Non Glued Floors)
PE (Polyethylene) vapor insulation barrier covering the entire flooring area, minimum 50mm wide vertically around the perimeter of the entire floor MUST be installed prior to the Acousticork T61.
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.

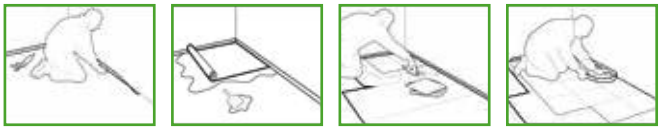
Installation Instruction for Acousticork T61
Unpack the Acousticork T61 at least 24h before the installation and store it in the room where the installation will take place. Cut the T61 to desired length and install directly over the entire floor pulled 30mm up the walls with crown of the rolled materials up (Acousticork label side down), removing all traped air. After completion, the T61 should cover the entire flooring area without gaps and with joints butted tight and preferably taped.

Final Flooring
Always follow manufacturers recommended installation instructions.

Recommended Adhesives:
Wood floor to Acousticork: Water-Based Emulsion/ Polyurethane Glue;
Vinyl and linoleum to Acousticork: Water-Based Emulsion/Synthetic Resin Glue;
Ceramic to Acousticork: Flexible Cement Glue;
Acousticork to slab/screed: Water-Based Emulsion/ Acrylic Adhesives;

Application Process
NON GLUED FLOORS:


1. Vapor insulation barrier application; **2.** Perimeter barrier application; **3.** Underlay application; **4.** Tape application in joints between rolls; **5.** Final floor application; **6.** Perimeter insulation barrier cut.

GLUED FLOORS:


1. Perimeter barrier application; **2.** Underlay application (glued); **3.** Final floor application (glued); **4.** Perimeter insulation barrier cut.

Important Notes
Never mechanically fasten the Acousticork T61 to the flooring floor as this will severaly diminish its acoustical value.

For detailed installation instructions, please contact us.