



## European Technical Assessment

**ETA 23/0626**  
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English version prepared by Itecons

### General Part

#### Technical Assessment Body issuing the European Technical Assessment:

Itecons - Instituto de Investigação e Desenvolvimento Tecnológico para a Construção, Energia, Ambiente e Sustentabilidade

<b>Trade name of the construction product</b>	Acousticork U34c
<b>Product family to which the construction product belongs</b>	Natural cork-based mat for use under floating screeds  Product area code: 04
<b>Manufacturer</b>	Amorim Cork Composites Rua Comendador Américo Ferreira Amorim, 260 P.O. Box 1 4536-902 Mozelos-VFR Portugal <a href="http://amorimcorkcomposites.com">amorimcorkcomposites.com</a>
<b>Manufacturing plant</b>	Rua Comendador Américo Ferreira Amorim, 260 P.O. Box 1 4536-902 Mozelos-VFR Portugal
<b>This European Technical Assessment contains</b>	9 pages
<b>This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of</b>	EAD 042051-00-0502 <i>Natural cork-based mats to be used for thermal and impact sound insulation</i>

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## Specific parts

### 1. Technical description of the product

This European Technical Assessment applies for Acousticork U34c, profiles 6/3 and 8/4, both of which are natural cork-based mats for thermal insulation and impact sound insulation. These mats are made of agglomerated recycled rubber mixed with cork and EVA foam. The Acousticork U34c is produced with the thicknesses and respective area weights listed in Table 1.

**Table 1:** Thickness and area weight of U34c

Product	Thickness [mm]	Width x Length [m x m]	Density [kg/m <sup>3</sup> ]
Acousticork U34c	6/3	1 x 15	600
	8/4		

### 2. Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

#### 2.1. Intended use

The natural cork-based mats Acousticork U34c are used for the improvement of thermal and impact sound insulation of floors under floating screeds or comparable build-ups on solid slabs. The Acousticork U34c mats are loose-laid on the substrate with the profiled surface faced down. A perimeter insulation barrier shall be applied vertically around the entire perimeter of the room with a width equal to that of the floor build up. The mats shall cover the entire flooring area without gaps and with joints securely taped.

The provisions made in this European Technical Assessment are based on an assumed working life of 25 years as minimum according to the EAD, provided that the conditions lay down for the installation, packaging, transport and storage as well as appropriate use, maintenance and repair are met. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a mean for choosing the right product in relation to the expected economically reasonable working life of the works.

### 3. Performance of the product and references to the methods used for its assessment

The assessment of the Acousticork U34c according to the Basic Work Requirements (BWR) was carried out in compliance with EAD 042051-00-0502.

#### 3.1. Safety in case of fire (BWR 2)

##### 3.1.1. Reaction to fire

The reaction to fire was tested according to ISO 11925-2:2010, ISO 11925-2:2010/Cor1:2011 and classified according to EN 13501-1:2007+A1:2009. The classification is presented in Table 2.

**Table 2:** Reaction to fire

Product		Classification
		EN 13501-1:2007+A1:2009
Acousticork U34c	Profile 6/3	Class E
	Profile 8/4	

**3.1.2. Propensity to undergo continuous smouldering**

No performance assessed.

**3.2. Hygiene, health and the environment (BWR 3)****3.2.1. Content, emission and/or release of dangerous substances**

The content emission and/or release of dangerous substances was assessed taking into account the release scenario applicable: IA2 (product with indirect contact to indoor air but possible impact on indoor air).

**3.2.2. SVOC and VOC**

The emission of volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC) of Acousticork U34c was assessed according to EN 16516:2017+A1:2020. The loading factor considered was  $L = 0.4 \text{ m}^2/\text{m}^3$ . The results are presented in Table 4.

**Table 4:** Emissions of volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC) after 3 days and 28 days of exposure

Compound	CAS	Concentration ( $\mu\text{g}/\text{m}^3$ )		Compound	CAS	Concentration ( $\mu\text{g}/\text{m}^3$ )	
		after 3 days	after 28 days			after 3 days	after 28 days
1,1,2,2-Tetrachloroethane	79-34-5	< 1	< 1	Cyclohexane	110-82-7	< 1	< 1
1,1,1-Trichloroethane	71-55-6	< 1	< 1	Cyclohexanone	108-94-1	29	< 3
1,1,2-Trichloroethane	79-00-5	< 1	< 1	Dibromochloromethane	124-48-1	< 1	< 1
1,2,4-Trichlorobenzene	120-82-1	< 1	< 1	Ethyl acetate	141-78-6	< 1	< 1
1,2,4-Trimethylbenzene	95-63-6	< 1	< 1	Ethylbenzene	100-41-4	< 1	< 1
1,2,3-Trimethylbenzene	526-73-8	< 1	< 1	Formaldehyde	50-00-0	< 2	< 2
1,2-Dibromoethane	106-93-4	< 1	< 1	Hexachloro-1,3-butadiene	87-68-3	< 1	< 1
1,2-Dichlorobenzene	95-50-1	< 1	< 1	Methyl iso-butyl ketone (MIBK)	108-10-1	8	5
1,2-Dichloroethane	107-66-2	< 1	< 1	Methyl n-butyl ketone	591-78-6	< 1	< 1
1,2-Dichloropropane	78-87-5	< 1	< 1	m-Xylene, p-Xylene	108-38-3, 106-42-3	< 2	< 2
1,3,5-Trimethylbenzene	108-67-8	< 1	< 1	n-Heptane	142-82-5	< 2	< 2
1,3-Dichlorobenzene	541-73-1	< 1	< 1	n-Hexadecane	544-76-3	< 1	< 1
1,4-Dichlorobenzene	106-46-7	< 1	< 1	n-Hexane	110-54-3	< 1	< 1
1,4-Dioxane	123-91-1	< 2	< 2	o-Xylene	95-47-6	< 1	< 1

Compound	CAS	Concentration (µg/m <sup>3</sup> )	
		after 3 days	after 28 days
1-Ethyl-4-methyl benzene	622-96-8	< 1	< 1
2-Butoxyethanol	111-76-2	< 1	< 1
Acetaldehyde	75-07-0	< 3	< 3
Benzyl chloride	100-44-7	< 2	< 2
Bromodichloromethane	75-27-4	< 1	< 1
Bromoform	75-25-2	< 1	< 1
Butylacetate	123-86-4	< 1	< 1
Carbon tetrachloride	56-23-5	< 1	< 1
Chlorobenzene	108-90-7	< 1	< 1
Cis-1,2-Dichloroethylene	156-59-2	< 1	< 1
Cis-1,3-Dichloropropene	10061-01-5	< 1	< 1
Cloroform	67-66-3	< 2	< 2

Compound	CAS	Concentration (µg/m <sup>3</sup> )	
		after 3 days	after 28 days
Phenol	108-95-2	< 5	< 5
Styrene	100-42-5	< 1	< 1
Tetrachloroethylene	127-18-4	< 1	< 1
Tetrahydrofuran	109-99-9	< 2	< 2
Toluene	108-88-3	< 2	< 2
trans-1,3-Dichloropropene	10061-02-6	< 1	< 1
Benzene*	71-43-2	---	< 1
Bis(2-ethylhexyl)phthalate*	117-81-7	---	< 1
Dibutylphthalate*	84-74-2	---	< 1
Trichloroethylene*	79-01-6	---	< 1
TVOC	---	78	22
TSVOC	---	< 5	< 5

\* CRM – Carcinogenic, mutagenic and reprotoxic substances

### 3.2.3. Specific organic compounds PAH and B[a]P

The content of specific organic compounds PAH and B[a]P of Acousticork U34c was determined according to AfPS GS 2014:01 PAK and the results are listed in Table 5.

**Table 5:** Content of specific organic compounds PAH and B[a]P

Parameter	Content of specific organic compounds PAH and B[a]P (mg/kg)	Parameter	Content of specific organic compounds PAH and B[a]P (mg/kg)
Benzo(a)pyrene	1.2	Indeno(1,2,3-cd)pyrene	1.3
Benzo(e)pyren	2.5	Acenaphthylene	< 0.2
Benzo(a)anthracene	0.82	Acenaphthene	< 0.2
Benzo(b)fluoranthene + Benzo(j)fluoranthene	0.93	Fluorene	< 0.2
Benzo(k)fluoranthene	< 0.2	Phenanthrene	1.4
Chrysen	1.4	Pyrene	15
Dibenzo(a,h)anthracen	< 0.2	Anthracene	< 0.2
Benzo(g,h,i)perylene	5.5	Fluoranthene	4.2
		Naphthalene	0.24

### 3.2.4. Nitrosamines

No performance assessed.

### 3.2.5. Biological resistance

No performance assessed.

### 3.3. Protection against noise (BWR 5)

#### 3.3.1. Compressive stress/strength

The compressive stress at 10% deformation of the Acousticork U34c was determined according to EN 826:2013. The mean values of compressive stress at 10% deformation of Acousticork U34c are presented in Table 6.

**Table 6:** Compressive stress at 10% deformation,  $\sigma_{10}$

Product		Compressive stress/strength, $\sigma_{10}$ [kPa]
Acousticork U34c	Profile 6/3	9
	Profile 8/4	6

#### 3.3.2. Compressive creep

The compressive creep of the Acousticork U34c was determined according to EN 1606:2013. The total deformation extrapolated for 10 years is presented in Table 7.

**Table 7:** Compressive creep of the Acousticork U34c

Product		Test load $\sigma_c$ [kPa]	Compressive creep, $X_{ct}$ [mm]	Thickness reduction, $X_t$ [mm]	Relative deformation, $\varepsilon$ [%]
Acousticork U34c	Profile 6/3	15	0.28	0.81	13.1
		20	0.31	1.07	16.6
		25	0.33	1.20	19.0
	Profile 8/4	15	0.52	1.31	14.7
		20	0.60	1.54	17.9
		25	0.68	1.80	20.6

#### 3.3.3. Dynamic load resistance

Not relevant.

#### 3.3.4. Deviation from length and width

The length and width of the Acousticork U34c were determined according to EN 822:2013. The deviations from length and width are presented in Table 8.

**Table 8:** Deviations from length and width of the Acousticork U34c

Product		Length, $l$ [mm]	Width, $w$ [mm]
Acousticork U34c	Profile 6/3	14425 <sup>+940</sup> <sub>-535</sub>	1002 <sup>+7</sup> <sub>-5</sub>
	Profile 8/4	14985 <sup>+130</sup> <sub>-85</sub>	1013 <sup>+1</sup> <sub>-2</sub>

#### 3.3.5. Thickness

No performance assessed.

### 3.3.6. Squareness

The squareness of the Acousticork U34c was determined according to EN 824:2013. The results are presented in Table 9.

**Table 9:** Deviations from squareness of the Acousticork U34c (maximum level)

Product		Squareness, $S_b$ [mm/m]	Squareness, $S_d$ [mm]
Acousticork U34c	Profile 6/3	$\leq 1$	0
	Profile 8/4	$\leq 1$	0

### 3.3.7. Mass per unit area

The mass per unit of the Acousticork U34c was determined according to section A 3.10 of EN 16354:2018. The results are presented in Table 10.

**Table 10:** Mass per unit area of the Acousticork U34c

Product		Mass per unit, $M$ [g/m <sup>2</sup> ]
Acousticork U34c	Profile 6/3	2816 <sup>+97</sup> <sub>-107</sub>
	Profile 8/4	3684 <sup>+135</sup> <sub>-154</sub>

### 3.3.8. Dynamic stiffness

The dynamic stiffness of the Acousticork U34c was determined according to EN 29052-1:1992. The results are presented in Table 11.

**Table 11:** Dynamic stiffness of the Acousticork U34c

Product		Dynamic stiffness, $s't$ [MN/m <sup>3</sup> ]
Acousticork U34c	Profile 6/3	45
	Profile 8/4	32

### 3.3.9. Thickness $d_L$ and compressibility

The thickness and compressibility of the Acousticork U34c were determined according to EN 12431:2013. The results are presented in Table 12.

**Table 12:** Thickness and compressibility of the Acousticork U34c

Product		Thickness, $dL$ [mm]	Compressibility, $c$ [mm]
Acousticork U34c	Profile 6/3	$\geq 5.8$	$\leq 0.5$
	Profile 8/4	$\geq 8.1$	$\leq 0.8$

### 3.3.10. Deformation under specified load and temperature

No performance assessed.

### 3.3.11. Dimensional stability

No performance assessed.

### 3.3.12. Tensile strength perpendicular to faces

Not relevant.

### 3.3.13. Impact sound reduction

The impact sound reduction  $\Delta L$  on a heavyweight standard floor using the Acousticork U34c was assessed according to ISO 10140-1:2021, ISO 10140-3:2021, ISO 10140-4:2021, ISO 10140-5:2021 and EN ISO 717-2:2020. The assessed build up and results are listed in Table 14.

**Table 14:** Impact sound reduction

Product		Assessed build up	Assessed $\Delta L_w$ <sup>1</sup>
Acousticork U34c	Profile 6/3	Screed: concrete floating paving flag with 70 mm thickness and about 190kg/m <sup>2</sup> of mass per unit area Resilient layer: Acousticork U34c Profile 6/3 Base: reinforced concrete slab of thickness 140 mm	$\Delta L_w \geq 22$ dB
	Profile 8/4	Screed: concrete floating paving flag with 70 mm thickness and about 190kg/m <sup>2</sup> of mass per unit area Resilient layer: Acousticork U34c Profile 8/4 Base: reinforced concrete slab of thickness 140 mm	$\Delta L_w \geq 24$ dB

<sup>1</sup> – The assessed  $\Delta L_w$  includes a reduction of 2dB to take into account the influence of ageing.

## 3.4. Energy economy and heat retention (BWR 6)

### 3.4.1. Thermal conductivity and thermal resistance

The declared thermal conductivity,  $\lambda_D$ , was determined according to EN 13170:2012+A1:2015, Annex A. Therefore, the declared value of the thermal conductivity of the Acousticork U34c determined was  $\lambda_D = 0.121$  W/m.K.

### 3.4.2. Water vapour resistance

No performance assessed.

## 4. Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

According to the Decision 1999/91/EC and Decision 2000/273/EC, both amended by Decision 2001/596/EC of European Commission the system of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) applicable is 3.

## 5. Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

The ETA is issued on the basis of agreed data/information, deposited at Itecons, which identifies the product that has been assessed and judged. It is the manufacturer's responsibility to make sure that all those who use the kit are appropriately informed of specific conditions laid down in this ETA.



Changes to the products or the components or their production process should be notified to the Itecons before the changes are introduced. Itecons will decide whether or not such changes affect the ETA and if so whether further assessment or alterations to the ETA shall be necessary.

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By

Technical Assessment Unit of

Itecons – Instituto de Investigação e Desenvolvimento Tecnológico para a Construção, Energia,  
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Validated document

(Administration)