# Embedded Material Certifications


Stackabl Concept Launch
DesignTO 2021
Photo © Patrick Biller

# Embedded Material Certifications

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### 3MM AND 5MM FELTED MERINO WOOL

Stackabl's felted Merino wool is manufactured using solely natural ingredients, including sheep's wool, water, and plant-based textile dyes that are safely disposed of in wastewater. In addition, ten 100 percent natural colors are composed of wool and water exclusively. It also has the following qualities and certifications

- Wool felt is 100% biodegradable
- 100% VOC free, no chemical irritants,
- Oeko-Tex Standard 100 Certified Product Class II
- Living Building Challenge Criteria Compliant
- LEED MR credit 6

### CLASS C PET

Acoustic board is made with 60 percent recycled fibers. These boards not only contribute to reducing waste but are also sourced regionally, minimizing the carbon footprint associated with transportation.

- 60 percent recycled water bottle plastic

### NATURAL CORK

Stackabl's cork components are manufactured using post industrial recycled cork grain, compressed with a minimal polyurethane binder. Cork is a rapidly renewable material harvested from the bark of cork oak trees, which regenerate naturally without felling. Its performance characteristics are derived from suberin, a naturally occurring compound that provides resistance to moisture, microbial growth, and degradation.

The material has the following qualities and certifications:

- Rapidly renewable and biodegradable
- Manufactured from 100 percent post industrial recycled cork
- Formaldehyde free with no added urea formaldehyde
- Low VOC material suitable for interior environments
- Naturally resistant to microbial growth
- Contributes toward LEED credits, including
  - MR 4 Recycled Content
  - MR 6 Rapidly Renewable

### POST-INDUSTRIAL NATURAL STONE

Stackabl's stone components are produced using post-industrial natural stone offcuts diverted from existing quarry and fabrication waste streams. By reprocessing surplus material, the stone is given a second life without additional extraction. Natural stone is an inert, mineral based material valued for its durability, stability, and longevity in interior environments.

The material has the following embedded qualities and certifications:

- Manufactured from post industrial stone waste
- Inert, mineral based material with no added binders
- Low VOC and non emitting
- Does not off gas or release chemical irritants
- Highly durable with an extended service life
- Contributes toward LEED credits, including
  - MR 4 Recycled Content
  - MR 5 Regional Materials where applicable

*Detailed manufacturer documentation and safety data are provided in the appendix.*

# Felt

Declare.

## 100% Wool Design Felt
## FilzFelt

**Final Assembly:** Germany
**Life Expectancy:** 20 Year(s)
**End of Life Options:** Salvageable/Reusable in its Entirety, Biodegradable/Compostable (100%)

**Ingredients:**

**Sheeps Wool:** Sheeps Wool; **Dyes:** Benzenesulfonic acid, [(9,10-dihydro-9,10-dioxo- 1,4-anthracenediyl)bis[imino[3-(2-methylpropyl)-3 ,1-propanediyl]]]bis-, disodium salt; 1,3-Naphthalenedisulfonic acid, 7-hydroxy-8-[[4-[1-[4-[(4-hydroxyphenyl)azo]phenyl]cyclohexyl]phenyl]azo]- , disodium salt; 2-NAPHTHALENESULFONIC ACID, 6-AMINO-4-HYDROXY-5-[[2-( TRIFLUOROMETHYL)PHENYL]AZO]-, MONOSODIUM SALT (2-NAPHTHALENESULFONIC ACID, 6-AMINO-4-HYDROXY-5-[[2-( TRIFLUOROMETHYL)PHENYL]AZO]-, MONOSODIUM SALT); Benzenesulfonic acid, [(9,10-dihydro-9,10-dioxo- 1,4-anthracenediyl)diimino]bis[ethylmethyl-, disodium salt; Benzenesulfonic acid, 3-[[4-[(2-ethoxy-5-methylphenyl) azo]-1-naphthalenyl]azo]-, sodium salt; Benzenesulfonic acid, 4-[[5-methoxy-4-[(4-methoxyphenyl) azo]-2-methylphenyl]azo]-, sodium salt; C.I. Acid Green 16; Ethanesulfonic acid, 2-[methyl(1-oxo-9-octadecenyl)amino]-, sodium salt, (Z)-; sodium lauryl sulfate

**Living Building Challenge Criteria:** Compliant

**I-13 Red List:**
■ LBC Red List Free
□ LBC Red List Approved
□ Declared

% Disclosed: 100% at 100ppm
VOC Content: Not Applicable

**I-10 Interior Performance:** CDPH Standard Method v1.2-2017
**I-14 Responsible Sourcing:** Not Applicable

FLZ-0001
EXP. 01 JUL 2024
Original Issue Date: 2021

MANUFACTURER RESPONSIBLE FOR LABEL ACCURACY
INTERNATIONAL LIVING FUTURE INSTITUTE™ living-future.org/declare

# Felt

## LEED© Statement
100% Wool Design Felt

**LEED© MR Credit 4 Recycled Content**
Post-Consumer: 0%
Post-Industrial: 0%

**LEED© MR Credit 5 Regional Materials**
Location of Material Extraction: Australia, New Zealand and South Africa
Location of Material Manufacturing: Germany

**LEED© MR Credit 6 Rapidly Renewable Materials**
100% Sheep's Wool

100% Wool Design Felt can contribute to the following LEED© points:

LEED NC MR Credit 6.0 Rapidly Renewable Materials
LEED CI MR Credit 6.0 Rapidly Renewable Materials

**Environmentally Improved Manufacturing Process**
100% Wool Design Felt is manufactured using solely natural ingredients, including sheep's wool, water, and plant-based textiles dyes that are safely disposed of in wastewater. In addition, ten 100 percent natural colors are composed of wool and water exclusively. Wool felt is 100% biodegradable and contains no formaldehyde, 100% VOC free, no chemical irritants, and is free of harmful substances.

**Third Party Certification**
OEKO-TEX® Standard 100 is an independent testing and certification system for textile raw materials, intermediate and end products at all stages of production. Introduced at the beginning of the 1990s, the system was developed in response to the demand for textiles which are harmless to health as many components were indiscriminately branded dangerous to health. OEKO-TEX® Standard 100 created a reliable product label for the assessment of the human ecological quality of textiles for consumers and a uniform safety standard for manufacturers in the textile and clothing industry allowing practical assessment of potential harmful substances in textile products.

Testing for harmful substances includes illegal substances, legally regulated substances, known harmful (but not legally regulated) chemicals as well as parameters for health care. FilzFelt felts have tested and certified to meet the human-ecological requirements for products with direct contact to skin according to Product Class II of OEKO-TEX® Standard 100. This certification is renewed annually and kept one file at FilzFelt's corporate headquarters.

info@filzfelt.com | **filzfelt**.com

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02/16

# Felt

## OEKO-TEX® Standard 100


### Description

The OEKO-TEX® Standard 100 is an independent test and certification system for textile raw, intermediate and end products at all stages of processing.

Examples of articles that can be certified: yarns, fabrics, treated fabrics, manufactured articles (clothing of all kinds, domestic and household textiles, bedding, towels, soft toys and many more)

### Criteria

The tests for harmful substances cover

- legally banned and controlled substances
- chemicals known to be harmful to the health (but not yet legally controlled)
- parameters for health protection

Taken in their entirety, the requirements go far beyond existing national legislation.

### Laboratory tests and product classes

The OEKO-TEX® testing for harmful substances is always geared towards how the textile will actually be used. The more closely the product is in contact with the skin, the stricter the human ecology requirements that it must meet.

A distinction is made between four product classes:

- Product class I: textile articles for babies and toddlers up to 3 years old (clothing, toys, bedding, towels etc.)
- Product class II: textiles used close to the skin (underwear, bedding, T-shirts etc.)
- Product class III: textiles used away from the skin (jackets, coats etc.)
- Product class IV: furnishing materials (curtains, tablecloths, upholstery etc.)

### Certification

The prerequisite for textile products to be certified under the OEKO-TEX® Standard 100 is that all components of an article, without exception, comply with the required criteria - so not only the outer material, but also the sewing threads, linings, prints etc and any non-textile accessories such as buttons, zips, rivets etc.

# Felt


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**Certification procedure**

- The company applies to one of the 15 OEKO-TEX® member institutes for certification, including submitting representative samples of the materials for laboratory testing.
- The institute in question carries out the laboratory testing. The test report is sent to the applicant.
- If the testing is successful, the applicant must present a written statement of conformity, declaring that the articles he is producing are identical to the tested samples. Credible evidence of an appropriate quality control system for testing this must be presented to the OEKO-TEX® institute.
- Certificates are issued for a period of one year - in Germany and France by the relevant Certification Centre, and in other countries by the OEKO-TEX® member institute in question.

**Company audits**

In the interests of providing targeted assistance with optimising operational quality control at the companies around the world that are involved in the OEKO-TEX® system, a compulsory element of the certification process is for the OEKO-TEX® member institutes to carry out an audit of the company applying for certification. This monitoring of the company takes place immediately before or shortly after the certificate has been issued and is repeated every three years.

**Control testing**

The OEKO-TEX® Association conducts annual control testing of certified products, at a rate of at least 15% of all certificates issued. It tests articles bearing the OEKO-TEX® Label that are available in retail shops and also samples of materials from factories. In addition, independent auditors carry out random checks of companies holding OEKO-TEX® certificates, in the form of unannounced inspections.

**Publisher and contact details**

International Association for Research and Testing in the field of Textile Ecology (OEKO-TEX®)

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# Felt



RIVERBANK ACOUSTICAL LABORATORIES



Riverbank Acoustical Laboratories (RAL)™ / An Alion Science Technical Center (RALVer 11.0)
Sound Absorption and Sound Absorption Coefficients
by the Reverberation Room Method ASTM C 423-09a/E 795-08/NVLAP 08/P03

TEST NUMBER: A11-201 TEST DATE: OCTOBER 21, 2011

CLIENT: FilzFelt Inc.
DESIGNATION: 5 mm Design Felt - 200 Natur
DIMENSIONS: 96" x 108" x 0.16"
AREA: 72.0 ft²
WEIGHT: 20.5 lbs AREA WEIGHT: 0.28 lbs/ft²
MOUNTING: A EDGE SEAL: Steel
SPECIMEN DETAILS: Each pc @ 73"x96"x0.16" - 73"x23"x0.16" - 23"x17"x0.16" - 23"x6"x0.16"

TEST ROOM DETAILS: Room 0 Volume = 10311 ft³ Area = 2864.3 ft²
FILE NAME: A11_201_111021_A.doc

| 1/3 OCTAVE CENTER FREQ. (Hz) | ABSORPTION COEFFICIENT | TOTAL ABSORPTION (SABINS) |
|---|---|---|
| 100 | 0.00 | 0.03 |
| 125 | -0.03 | -2.26 |
| 160 | 0.02 | 1.10 |
| 200 | 0.03 | 2.20 |
| 250 | 0.02 | 1.57 |
| 315 | 0.01 | 0.95 |
| 400 | 0.06 | 4.49 |
| 500 | 0.05 | 3.47 |
| 630 | 0.12 | 8.63 |
| 800 | 0.16 | 11.21 |
| 1000 | 0.22 | 16.19 |
| 1250 | 0.31 | 22.13 |
| 1600 | 0.41 | 29.41 |
| 2000 | 0.46 | 33.42 |
| 2500 | 0.55 | 39.57 |
| 3150 | 0.59 | 42.20 |
| 4000 | 0.74 | 53.18 |
| 5000 | 0.80 | 57.45 |

**SOUND ABSORPTION AVERAGE [ SAA ] = 0.20**
**NOISE REDUCTION COEFFICIENT [ NRC ] = 0.20**

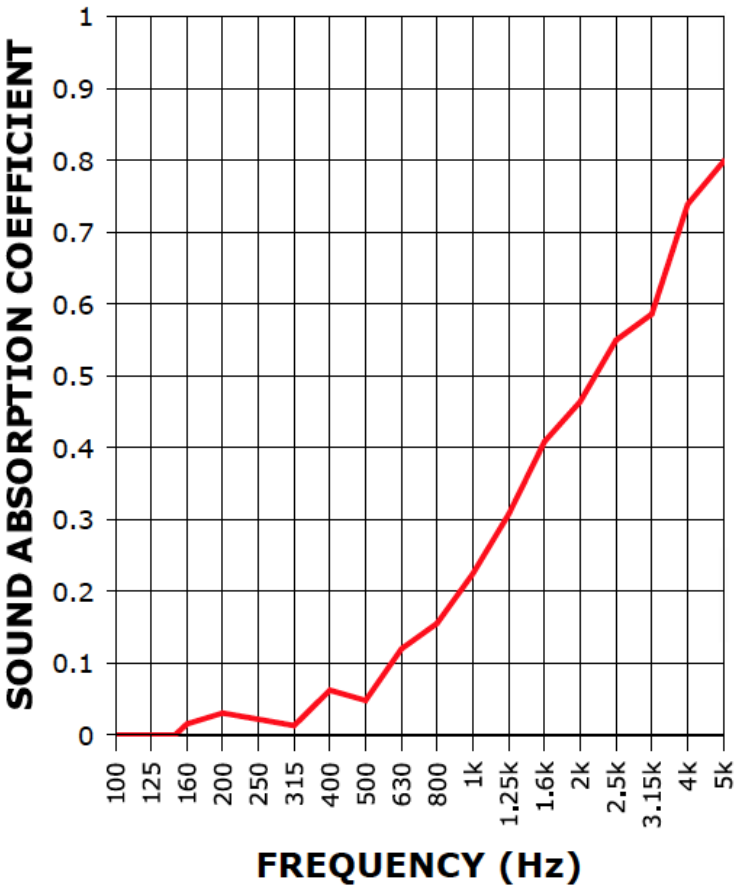
Test Conducted by: Marc Sciaky

This single report page and accompanying graph contain the instantaneous raw data as provided to the client after testing of the specimen. This data, although accurate, is incomplete without the full specimen description, mounting details and signature pages. The full report referenced by the RAL test number above should be consulted for further information regarding these results.

# Felt

RIVERBANK ACOUSTICAL LABORATORIES

SOUND ABSORPTION REPORT
RAL - A11-201




SAA = 0.20
NRC = 0.20

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2

# PET

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## MATERIAL SPECIFICATION SHEET

| | | | |
|---|---|---|---|
| 1 | **Sutherland Style No.** | | **DB-1500** |
| 1.1 | Description: | | 1500gsm |
| 2 | **Technical Data** | | |
| 2.1 | Design: | | PET ND (60% recycled PET fiber) |
| 2.2.2 | Mass per unit area (Total Weight) [gsm] | | 1500gsm (+/-10%) |
| 2.2.3 | Color of the material | | Various |
| 2.2.4 | Thickness | [mm] | 9.5 [+/- 10%] |
| 2.2.5 | Tensile Strength Longitudinal (Y) [N /5cm] [%] | | 1000 [+/-20%] |
| | Transverse (X) | [N / 5cm] [%] | 1000 [+/-20%] |
| 2.2.6 | Elongation at break Longitudinal (Y) [%] | | 70 [+/-30%] |
| | Transverse (X) | [%] | 70 [+/-30%] |
| 2.2.7 | Tear Strength Longitudinal | [N] | 1000 (+/-20%) |
| 2.2.8 | Transverse (X) | [N] | 1000 (+/-20%) |
| 3.1 | Odor release | | none |
| 3.2 | Shelf Life | [month] | unlimited |
| 4 | Technical Variation of roll material - Recommended to supplier | | |
| 4.1 | Length of roll | [Sheets] | Sheets |
| 4.1.1 | Width of roll | [Sheets] | 48"x96" inches |
| 4.1.2 | Core diameter | [In] | n/a |
| 4.1.3 | Packaging material & color | | Clear Plastic |
| 5 | Other applicable documents | | |

| | | | |
|---|---|---|---|
| 1 | New - 8/24/18 | TRS | **www.sutherlandfelt.com** |
| **Index** | **Change Description -date** | **Approved by** | |



**Sutherland Felt Co. - 700 E. Whitcomb - Madison Heights, MI- 48071 -TEL 248-280-0450**

# Cork

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## Suberra Fact Sheet

Suberra is 100% post-industrial recycled cork pulp, compressed with a polyurethane binder. No urea formaldehyde is added.

Cork is rapidly renewable, fully recyclable and biodegradable.

The raw material is culled from the bark of the Cork Oak tree every nine years. New outer skin grows quickly to protect the remaining inner bark. From these trees' natural defenses, Suberra gains its anti-microbial qualities and its resistance to water and heat.

Cork is composed of cellulose, lignin and — most of all — a waxy substance called suberin.

Whereas wood gets its defining properties from a high cellulose content, it is largely suberin that characterizes cork. Suberin is impermeable to water and air.

In a microbe lab test, Suberra cork received the highest (superior) rating for resistance to contamination by E.coli, salmonella and listeria.

AMORIM

Corticeira Amorim – Indústria, S.A.

## Especificação / Specification

| | | |
|---|---|---|
| **Título:** Aglomerado de cortiça com PU<br>Agglomerate cork with PU | | **Nº Especificação** HS-2001<br>**Revisão** 5 |
| **Segmento:**<br>Ficha de Segurança<br>**Cliente:** | *Aprovado e Divulgado*<br>*Especificação /*<br>*Specification* | **Data de implementação:**<br>18-10-2006 |
| **Tipo de Documento:** Ficha de Segurança / Safety Data Sheet | | **Periodo de Revisão-** 1098 **Dias** |

### 1. IDENTIFICAÇÃO DA PREPARAÇÃO E DA EMPRESA
### 1. PRODUCT AND COMPANY IDENTIFICATION

Produto: Aglomerado de cortiça
Product: Agglomerate cork composition

Uso Específico: Diversos
Specific Use: Various

Empresa: Corticeira Amorim - Indústria, S.A.
Company: Corticeira Amorim - Indústria, S.A.

Rua de Meladas, Nº 260 (P.O. Box 1)
4536-902 Mozelos VFR
Portugal
+351.22.7475300
+351.22.7475304

### 2. COMPOSIÇÃO / INFORMAÇÃO SOBRE COMPONENTES
### 2. COMPOSITION / INFORMATION ON INGREDIENTS

Composição: Cortiça (*Quercus suber*) / Composition: Cork (*Quercus suber*)
CAS Nº 61789-98-8

Poliuretano / Polyurethane
CAS Nº 584-84-9
CAS Nº 91-08-7
CAS Nº 117-81-7

Isento de formaldeído / Formaldehyde free

### 3. IDENTIFICAÇÃO DE PERIGOS
### 3. HAZARDS IDENTIFICATION

Não aplicável
Not applicable

### 4. PRIMEIROS SOCORROS
### 4. FIRST AID MEASURES

Não aplicável.
Not applicable

# Cork

**5. MEDIDAS DE COMBATE A INCÊNDIOS**
**5. FIRE FIGHTING MEASURES**

Meios de extinção: Água, pó químico, CO2.
Means of extinction: Water, chemical powder, CO2.

Riscos de exposão: Não aplicável.
Explosion risk: Not applicable.

Equipamento de protecção: Para incêndios em áreas fechadas, os bombeiros devem utilizar aparelhos de respiração autónoma.
Protection equipment: Firefighters should use autonomous breathing devices for fires in closed areas.

**6. MEDIDAS E TOMAR EM CASO DE FUGAS ACIDENTAIS**
**6. ACCIDENTAL RELEASE MEASURES**

Não aplicável
Not applicable

**7. MANUSEAMENTO E ARMAZENAGEM**
**7. HANDLING AND STORAGE**

7.1 Manuseamento
7.1 Handling

Não são necessários cuidados especiais
No special care required

7.2 Armazenagem
7.2 Storage

Armazenar o produto à temperatura ambiente, protegido da chuva e em local ventilado.
Store the product at room temperature, away from rain and in a well-ventilated place.

**8. CONTROLO DA EXPOSIÇÃO / PROTECÇÃO INDIVIDUAL**
**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

Protecção respiratória: Em condições normais de utilização, não é exigido equipamento especial
Breathing protection: No special equipment required under normal conditions of use.

Protecção dos olhos: Em situações de corte ao produto, usar óculos de segurança.
Eye protection: Wear safety glasses in product-cutting situations.

**9. PROPRIEDADES FISICAS E QUIMICAS**
**9. PHYSICAL AND CHEMICAL PROPERTIES**

Estado Fisico: Sólido
Physical State: Solid

Côr: Castanho claro
Color: Light Brown

Cheiro: Suave
Smell: Mild

PH: Não Aplicável
PH: Not applicable

Ponto de Ebulição: Não Aplicável
Boiling Point: Not applicable

Ponto de Fusão: Não Aplicável
Melting Point: Not applicable

Ponto de Inflamação: > 300ºC
Ignition Point: > 300ºC

Auto-Inflamabilidade: Não Aplicável
Autoignition: Not applicable

Propriedades Explosivas: Não Aplicável
Explosive Properties: Not applicable

Solubilidade na Água: Insolúvel
Water Solubility: Insoluble

**10. ESTABILIDADE E REACTIVIDADE**
**10. STABILITY AND REACTIVITY**

Produtos perigosos resultantes da decomposição: Em temperaturas superiores a 300ºC são libertados monóxido e dióxido de carbono.
Dangerous products resulting from decomposition: Carbon monoxide and carbon dioxide are released at temperatures above 300ºC.

**11. INFORMAÇÃO TOXICOLÓGICA**
**11. TOXICOLOGICAL INFORMATION**

Não aplicável.
Not applicable

**12. INFORMAÇÃO ECOLÓGICA**
**12. ECOLOGICAL INFORMATION**

Destino e efeitos no ambiente: Não estabelecido
Destination and effects on the environment: Not established

**13. QUESTÕES RELATIVAS A ELIMINAÇÃO**
**13. DISPOSAL CONSIDERATIONS**

Eliminação de resíduos: Deve ser incenerado em queimador fechado, ou utilizado como combustivel em sistemas controlados.
Waste elimination: It should be incinerated in a closed burner, or used as fuel in controlled systems.

A queima deve acautelar todos os aspectos legais aplicáveis.
Burning should comprise all applicable legal aspects.

**14. INFORMAÇÕES RELATIVAS AO TRANSPORTE**
**14. TRANSPORT INFORMATION**

Não regulamentado
Not regulated

**15. INFORMAÇÃO SOBRE REGULAMENTAÇÃO**
**15. REGULATORY INFORMATION**

Cumprir todas as disposições nacionais que possam ser aplicáveis.
Comply with all national provisions that may apply.

**16. OUTRAS INFORMAÇÕES**
**16. OTHER INFORMATION**

Os dados desta Ficha de Segurança, são baseados na informação disponível na data da compilação.
The data on this Safety File are based on available information at the time of compilation.

Descreve o produto apenas em termos de requisitos de saúde e segurança, pelo que não deve ser interpretado como garantia de propriedades específicas do produto.
They describe the product merely in terms of health and safety requirements, whereby they should not

# Cork

Referencia: Directiva 2001 / 58 / CE
Reference: Directrix 2001 / 58 / CE

**Aprovações:**

| **Assinatura do Primeiro Verificador/Aprovador** |
|---|

**Nome:** Natália Santos 18-10-2006 - Aprovado por: Natália Santos
**Titulo:** Directora - Ambiente; Qualidade e Segurança

Corticeira Amorim - Indústria, S.A.
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4536-902 MOZELOS VFR - PORTUGAL
Telef. 22 747 5300 - Fax: 22 747 5304
E-mail: geral.cai@amorim.com

# Cork

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suberra
cork surfaces

**MATERIAL**
• 100% post-industrial recycled cork grain, highly compressed with a polyurethane binder
• 1-1/4" raw slabs are slightly oversize at 25 -1/2" wide x 36-1/2" long, so you can yield a 25"x36" finished slab
• Cork is rapidly renewable, fully recyclable and biodegradable

**APPLICATIONS**
• Horizontal surfaces in commercial and residential interiors — including tables, bath vanities, kitchen islands, countertops, desks and other work surfaces. Suberra is suitable around sinks.
• Fills a void between low-priced, high-pressure laminate tops and higher-end, sustainable solid surface tops

**FABRICATION AND FINISHING**
• Suberra can be cut, routed and sanded with woodworking tools and seamed with standard adhesives
• Suberra requires regular support and is not intended to cantilever or span long distances unsupported.
• Undermount sinks should be hung with brackets from the base cabinets, as with some stone tops
• The type of finish depends on the application and the customer's preference. In most cases, we recommend three coats of OSMO Poly-x Oil.
• Suberra should ideally be fastened to cabinets or table bases with standard wood screws

**SOURCE & MANUFACTURING**
• The raw material is culled by hand every nine years form the bark of the Cork Oak tree, which regenerates quickly. Cork Oak trees are protected by law in Portugal rom over-harvesting. Cork off-cuts from various manufacturing products are ground up, and that grain is compressed into slabs
• Cork is composed of cellulose, lignin and — most of all — a waxy, waterproof substance called suberin. Whereas wood gets its defining properties (including a propensity to burn) from a high cellulose content, it is largely suberin that characterizes cork.

**CONTRIBUTES TO LEED CREDITS**
• MR 6 — Rapidly Renewable
• MR 4 — Recycled Content
• EQ 4.4 — No added urea formaldehyde

**LAB TEST RESULTS (fall 2009)**
• Slab density = 31 lbs / $ft^3$
• Heat resistant to 350 degrees
• Does not off-gas urea formaldehyde
• Class B fire rating
• Does not support bacterial growth (specifically no fungal growth observed after 28 days of exposure to several types)
• Prolonged light exposure has a "moderate effect" that "does not notably alter the original condition of the specimen"
• Good resistance to abrasion (no weight loss of samples due after a 200-cycle wear-resistance test)
• Good stain resistance (no effect on raw, unfinished samples exposed to coffee, tea, 50:50 ethyl alcohol, citric acid, ketchup, acetone, #2 pencil and wax crayon. Exposure to household ammonia, mustard and black shoe polish produced a stain that was difficult to see.)