

EcoTex™  
Data & Testing  
12.14.2020

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## TEST REPORT

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**No.:** C-19067035

**Sample:** One sample of coated nonwoven fabric intended for professional footwear lining.

**Reference of the sample:** “EcoTex™”

**Distributor:** Acor Orthopaedic, Inc.  
18530 South Miles Parkway  
Cleveland, OH 44128  
800-237-2267

**Identification marks:** Not present

**Samples received:** 23<sup>rd</sup> May 2019

**Place and date of testing:** Elda, from 24<sup>th</sup> to 28<sup>th</sup> May 2019

**Date of issue:** 4<sup>th</sup> June 2019

**Tests carried out:** Tests on the compliance with the list of tests supplied by the orderer:

- Tear strength (EN ISO 20344:2011)
- Abrasion resistance (EN ISO 20344:2011)
- Water vapour permeability and coefficient (EN ISO 20344:2011)
- Colour fastness to rubbing (EN ISO 11640:2018)
- Static absorption of water (EN ISO 2417:2016)
- Colour fastness to water spotting (EN ISO 15700:1999)

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## RESULTS

### EN ISO 20344:2011 (Lining)

PROPERTY (clause)	TEST-PIECE	RESULTS			REQUIREMENTS (*)
<b>Tear strength (6.3)</b> (N)	A1-A3	45	43	50	≥ 15 in textiles
	B1-B3	52	50	46	
<b>Abrasion resistance (6.12)</b> (No. of cycles)	<b>Dry</b>	1-2	> 51,200;	> 51,200	≥ 51,200 without holes
		3-4	> 51,200;	> 51,200	
	<b>Wet</b>	5-6	> 25,600;	> 25,600	
		7-8	> 25,600;	> 25,600	
<b>Water vapour permeability and coefficient (6.6/6.7/6.8)</b> WVP (mg/cm <sup>2</sup> ·h) WVC (mg/cm <sup>2</sup> )		<b>WVP</b>	<b>WVC</b>	WVP ≥ 2.0 WVC ≥ 20	
	1	14.7	118.9		
	2	14.3	115.6		
	3	14.7	118.8		

A and B: directions perpendicular to each other.

### EN ISO 11640:2012

PROPERTY (clause)	TEST-PIECE	RESULTS		REQUIREMENTS (*)
<b>Fastness to rubbing (**)</b> Staining (No. of cycles)	<b>Dry: 150</b>	A	5	≥ 3
		B	5	
	<b>Wet: 50</b>	A	5	
		B	5	

A and B: directions perpendicular to each other.

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**EN ISO 2417:2016**

PROPERTY (clause)	TEST-PIECE	RESULTS		REQUIREMENTS (*)
<b>Static absorption of water (**)</b> (%)		<b>15'</b>	<b>30'</b>	---
	1	169	180	
	2	175	176	
	3	170	174	

**EN ISO 15700:1999**

PROPERTY (clause)	TEST-PIECE	RESULTS		REQUIREMENTS (*)
<b>Fastness to water spotting (**)</b> Appearance Absorption time (s)	1-2	No change	No change	---
	1-2	3	3	

**REMARKS**

(\*) Requirements included in the test standard EN ISO 20345:2011.

(\*\*) The test is not covered by the ENAC accreditation.

(\*\*\*) Value recommended by INESCOP.

(C-18053548)

**I. SAMPLES:**

- One piece of fabric without type weaves fibres agglomerated with black colour. Reference: EcoTex Engineered Lthr. For instep of footwear of professional use. \_\_\_\_\_

**II. SOLICITED TESTS:**

- PERMEABILITY TO THE STEAM OF WATER (UNE-EN ISO 20344:2011, 6.6, 6.7, 6.8)
- STEAM OF WATER COEFFICIENT (UNE-EN ISO 20344:2011, 6.8)
- PENETRATION AND WATER ABSORPTION (UNE-EN ISO 20344:2011, 6.13)
- RESISTANCE TO THE TEAR (UNE-EN ISO 20344: 2011, 6.3)
- Coating adhesion (EN ISO 2411:2000, method 2, wet)

**III. RESULTS:**

The following table gathers the obtained results: \_\_\_\_\_

TEST	EcoTex	VALUE OF REFERENCE <sup>(1)</sup>
PERMEAB.STEAM Mg/cm <sup>2</sup> .h	2 , 2 , 2.3	<u>MIN</u> 0.8 <sup>(1)</sup>
STEAM COEFF. Mg/cm <sup>2</sup>	20.3 , 21.4 , 21.1	<u>MIN</u> 15 <sup>(1)</sup>
PENET & ABS. W Penetration g	0	Max: 0,2 <sup>(1)</sup>
Water Absorption %	6	Max: 30
R. TEAR N	102      79	<u>MIN</u> 60
COATING ADHESION (N/10mm)	32      31	<u>MIN</u> 12

(C-18053548)

**IV. ENVIRONMENTAL CONDITIONS:**

Except when other conditions are specified, the tests that appear in the present report have been made in the following environmental conditions:

Temperature: 23±2°C  
Relative Humidity: 50±5%

**INESCOP**

Signed: Elena Banon  
Chemical Sciences Grad.

TECHNICAL FORM

EcoTex™ Perforated Liner

STRUCTURAL CHARACTERISTICS				STRUCTURAL CHARACTERISTICS			
TEST	VALUE	UNIT	NORMATIVE	TEST	VALUE	UNIT	NORMATIVE
COMPOSITION	90% MICROFIBER + 10% PU			TEARING STRENGTH			
WIDTH	137 - 140	cm	UNE-EN 1773-97	PLOT	51	N	UNE 20344.2012
WEIGHT	330*	gr/m2	UNE 40600-6/ISO 7211/6	WARP	62	N	
DIMENSIONAL CHARACTERISTICS				R. ABRASION			
				DRY	> 300.000		UNE 20344.2012
				WET	> 150.000		
				VAPOR COEFFICIENT			
SHRINKAGE					102	mg/cm2	UNE 20344.2012
WASHING 40°C 3 cycles	L	5	MOR40194	WATERPROOF VAPOR			
	T	4					
STATIC 60° 205°C	L		MOR40193		12	mg/cm2 h	UNE 20344.2012
	T						
THICKNESS	0.8 - 0.9		m/m	UNE EN ISO 5084			

DYEING CHARACTERISTICS				OBSERVACIONES / REMARKS:			
TEST	VALUE	UNIT	NORMATIVE				
COLOR FASTNESS TO RUBBING				TEST DROP T. Absorption (2 seconds) Aspect (No Change)			
DRY	5	e.g.	UNE-EN ISO 105-X12				
WET	5						
COLOR FASTNESS				Certified according to regulation UNE 20344.2012 (R-16035371)			
WATER	5	e.g.	UNE-EN ISO 105-E01				
PERSPIRATION	5		UNE-EN ISO 105-E04				
LIGHTFASTNESS	5	e.a.	UNE-EN ISO 105-B02:01				

27/06/2019

(\*) Toleration value: 5%

TECHNICAL FORM

EcoTex™ 1.4 mm

STRUCTURAL CHARACTERISTICS				STRUCTURAL CHARACTERISTICS			
TEST	VALUE	UNIT	NORMATIVE	TEST	VALUE	UNIT	NORMATIVE
COMPOSITION	90% MICROFIBER + 10% PU			TEARING STRENGTH			
WIDTH	140	cm		PLOT	87	N	UNE 20345:2013
WEIGHT	750*	gr/m2		WARP	85	N	
DIMENSIONAL CHARACTERISTICS				R. ABRASION			
				DRY	>100.000		UNE 20345:2013
				WET	>50.000		
				VAPOR COEFFICIENT			
SHRINKAGE					20.2	mg/cm2	UNE 20345:2013
WASHING 40°C 3 cycles	L		UNE-EN 2411:2011	WATERPROOF VAPOR			
	T	%					
STATIC 60° 205°C	L		UNE-EN 2411:2011		2.2	mg/cm2 h	UNE 20345:2013
	T	%					
THICKNESS	1.45 +/- 0.1	m/m				°C	
DYEING CHARACTERISTICS				OBSERVACIONES / REMARKS:			
TEST	VALUE	UNIT	NORMATIVE	Certified according to regulation UNE 20344.2012 (R-15104913)			
COLOR FASTNESS TO RUBBING				R.flexion (UNE EN ISO 5402:2011)			
DRY	>=4	e.g.	UNE-EN ISO 105-X12	Dry: 150.000 without any breakage			
WET	>=4			Wet: 30.000 without any breakage			
COLOR FASTNESS				Absorption of water: 8%			
WATER	>=4	e.g.	UNE-EN ISO 105-E01	Penetration of water: 0g			
PERSPIRATION	>=4		UNE-EN ISO 105-E04				
LIGHTFASTNESS	>=4	e.a.	UNE-EN ISO 105-B02:01				

27/06/2019

(\*) Tolerance value: 5%



Acor Orthopaedic, Inc.  
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Cleveland, OH 44128

2018AN3263

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## Test Report

Date of Reception: 11/06/2018

Date of Testing  
Start: 11/15/2018  
End: 11/21/2018

Identification and Description of Samples:  
References: EcoTex™

Tests performed: Antibacterial Activity Test

## Results

Antibacterial activity:

Standard: ISO20743:2013-pt0.8.1  
Test date: 11/15/2018 - 11/21/2018  
Neutralizing agent: SCDLP  
Sterilization method: n/a  
Sample weight: 0.4g  
Control fabric: 100% cotton fabric  
Pretreatment: n/a  
Sample reference: EcoTex™ Lite Semi-perf

Definitions	
<i>Antibacterial value (A)</i>	<i>Efficacy of antibacterial property</i>
$2 \leq A \leq 3$	Significant
$A \geq 3$	Strong

Test Results:

Test microorganism	<i>Staphylococcus epidermidis</i> ATCC 1798 (CECT 231)			
Measuring method and test procedure	Absorption- Plate count method			
Concentration of inoculum (cfu/ml) ( $1-3 \times 10^5$ )	100.00			
Growth value on the control fabric $F = C_t - C_0$ (log)	$C_0$ (ufc)	$C_0$ (log)	$C_t$ (ufc)	$C_t$ (log)
	20.0	4,30	210.00	5,32
Growth value on the sample reference $G = T_t - T_0$ (log)	1,02			
	$T_0$ (ufc)	$T_0$ (log)	$T_t$ (ufc)	$T_t$ (log)
	18.0	4,26	<20	1,28
Antibacterial activity value $A = F - G$ (log)	-2,98			
	4			