centro tecnológico do calçado de portugal

ANALYSIS REPORT

BA - 3059/2024

DIKAMAR- INDUSTRIA DE PROTECCAO DE CALCADO, LDª

PARQUE INDUSTRIAL MANUEL DA MOTA, LOTE 29

3100-354 POMBAL

PT

(São João Madeira - Fisica)
(São João Madeira - Quimica)

EPI-130/2023 **S5 CI SR**

Specifications according to EN ISO 20345:2022 S5 CI SR

No insock
Metallic toe cap protection type A
Metallic insert protection

General Data

Date of reception:	22/04/2024	**Date of testing conclusion:**	22/05/2024
Date of testing start:	20/05/2024	**Issue Report:**	22/05/2024
Date conditioning:	22/04/2024		

Material(s):

Item	Material description:	Reference	Date of 2nd delivery
01	One pair of PU boots, fluorescent orange upper and blue outsole, size 36	ALPHA TRACE (Laranja Fluorescente/Azul)	
02	One pair of PU boots, green upper and black outsole, size 36	ALPHA TRACE (Verde/Preto)	
03	Two pairs of PU boots, Camouflage upper and brown outsole, size 36	ALPHA TRACE (Camouflage/Castanho)	
04	One pair of PU boots, fluorescent orange upper and blue outsole, size 42	ALPHA TRACE (Laranja Fluorescente/Azul)	
05	One pair of PU boots, green upper and black outsole, size 42	ALPHA TRACE (Verde/Preto)	
06	Two pairs of PU boots, Camouflage upper and brown outsole, size 42	ALPHA TRACE (Camouflage/Castanho)	
07	One pair of PU boots, fluorescent orange upper and blue outsole, size 47	ALPHA TRACE (Laranja Fluorescente/Azul)	
08	One pair of PU boots, green upper and black outsole, size 47	ALPHA TRACE (Verde/Preto)	
09	Two pairs of PU boots, Camouflage upper and brown outsole, size 47	ALPHA TRACE (Camouflage/Castanho)	
10	Camouflage upper removed from itens 03, 06 and 09		
11	Brown outsole removed from itens 03, 06 and 09		
12	Two pairs of PU boots, green upper and black outsole, size 36 (received on 14/03/2024)	ALPHA TRACE (Verde/Preto)	
13	Two pairs of PU boots, green upper and black outsole, size 36 (received on 22/03/2024)	ALPHA TRACE (Verde/Preto)	

Test Results

Test	Standard	Unit	Item	Result	Specification	Conformity	Note
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Determination of heavy metals by Atomic Absorption Spectrophotometry - Flame							
Total Cadmium (Cd)	EN14602-4.1.5.2 - method B-2012ISO 8288:1986 (method A)	mg/kg	10	< 2,5 (QL)	< 100	Pass	b/c/d/i/k
Total Cadmium (Cd)	EN14602-4.1.5.2 - method B-2012ISO 8288:1986 (method A)	mg/kg	11	< 2,5 (QL)	< 100	Pass	b/c/d/i/k

Test	Standard	Unit	Item	Result	Specification	Conformity	Note
Total Lead (Pb)	EN14602-4.1.5.2 - method B-2012ISO 8288:1986 (method A)	mg/kg	10	< 50 (QL)	< 500	Pass	b/c/d/i/k
Total Lead (Pb)	EN14602-4.1.5.2 - method B-2012ISO 8288:1986 (method A)	mg/kg	11	< 50 (QL)	< 500	Pass	b/c/d/i/k
Whole footwear							
Slip resistance ceramic floor with detergent							
backward forepart slip	EN ISO13287--2019	Coefficient of Friction	01	0,38 (± 0,03)	min 0,36	Pass	e/i/k
backward forepart slip	EN ISO13287--2019	Coefficient of Friction	02	0,50 (± 0,03)	min 0,36	Pass	f/i/k
backward forepart slip	EN ISO13287--2019	Coefficient of Friction	03	0,48 (± 0,03)	min 0,36	Pass	f/i/k
backward forepart slip	EN ISO13287--2019	Coefficient of Friction	05	0,46 (± 0,03)	min 0,36	Pass	e/i/k
backward forepart slip	EN ISO13287--2019	Coefficient of Friction	07	0,53 (± 0,03)	min 0,36	Pass	e/i/k
backward forepart slip	EN ISO13287--2019	Coefficient of Friction	08	0,48 (± 0,03)	min 0,36	Pass	f/i/k
Forward heel slip	EN ISO13287--2019	Coefficient of Friction	01	0,45 (± 0,03)	min 0,31	Pass	e/i/k
Forward heel slip	EN ISO13287--2019	Coefficient of Friction	02	0,40 (± 0,03)	min 0,31	Pass	f/i/k
Forward heel slip	EN ISO13287--2019	Coefficient of Friction	03	0,42 (± 0,03)	min 0,31	Pass	f/i/k
Forward heel slip	EN ISO13287--2019	Coefficient of Friction	05	0,44 (± 0,03)	min 0,31	Pass	e/i/k
Forward heel slip	EN ISO13287--2019	Coefficient of Friction	07	0,44 (± 0,03)	min 0,31	Pass	e/i/k
Forward heel slip	EN ISO13287--2019	Coefficient of Friction	08	0,42 (± 0,03)	min 0,31	Pass	f/i/k
Slip resistance ceramic floor with glycerin (SR)							
backward forepart slip	EN ISO13287--2019	Coefficient of Friction	01	0,23 (± 0,03)	min 0,22	Pass	f/i/k
backward forepart slip	EN ISO13287--2019	Coefficient of Friction	02	0,22 (± 0,03)	min 0,22	Pass	e/i/k
backward forepart slip	EN ISO13287--2019	Coefficient of Friction	03	0,22 (± 0,03)	min 0,22	Pass	f/i/k
backward forepart slip	EN ISO13287--2019	Coefficient of Friction	04	0,22 (± 0,03)	min 0,22	Pass	e/i/k
backward forepart slip	EN ISO13287--2019	Coefficient of Friction	07	0,23 (± 0,03)	min 0,22	Pass	f/i/k
backward forepart slip	EN ISO13287--2019	Coefficient of Friction	09	0,24 (± 0,03)	min 0,22	Pass	e/i/k
Forward heel slip	EN ISO13287--2019	Coefficient of Friction	01	0,28 (± 0,03)	min 0,19	Pass	f/i/k
Forward heel slip	EN ISO13287--2019	Coefficient of Friction	02	0,30 (± 0,03)	min 0,19	Pass	e/i/k
Forward heel slip	EN ISO13287--2019	Coefficient of Friction	03	0,24 (± 0,03)	min 0,19	Pass	f/i/k
Forward heel slip	EN ISO13287--2019	Coefficient of Friction	04	0,21 (± 0,03)	min 0,19	Pass	e/i/k

Test	Standard	Unit	Item	Result	Specification	Conformity	Note
Forward heel slip	EN ISO13287--2019	Coefficient of Friction	07	0,30 (± 0,03)	min 0,19	Pass	f/i/k
Forward heel slip	EN ISO13287--2019	Coefficient of Friction	09	0,29 (± 0,03)	min 0,19	Pass	e/i/k
Determination of the toecap impact resistance							
Sizes: 36 and below	EN ISO20344-5.4-2021	mm	01	12,5 (± 0,04)	min 12,5	Pass	e/i/k
Sizes: 36 and below	EN ISO20344-5.4-2021	mm	02	13,0 (± 0,1)	min 12,5	Pass	f/i/k
Sizes: 41 and 42	EN ISO20344-5.4-2021	mm	06	15,5(±0,04) / 15,0(±0,02)	min 14,0	Pass	g/i/k
Sizes: 45 and above	EN ISO20344-5.4-2021	mm	07	18,0 (± 0,03)	min 15,0	Pass	f/i/k
Sizes: 45 and above	EN ISO20344-5.4-2021	mm	08	18,0 (± 0,01)	min 15,0	Pass	e/i/k
Determination of the toecap compression resistance							
Sizes: 36 and below	EN ISO20344-5.5-2021	mm	13	13,0(± 0,1)/13,5(± 0,03)	min 12,5	Pass	g
Sizes: 41 and 42	EN ISO20344-5.5-2021	mm	04	15,0 (± 0,02)	min 14,0	Pass	e/i/k
Sizes: 41 and 42	EN ISO20344-5.5-2021	mm	05	15,0 (± 0,02)	min 14,0	Pass	f/i/k
Sizes: 45 and above	EN ISO20344-5.5-2021	mm	09	16,0(± 0,03)/15,0 (±0,02)	min 15,0	Pass	g/i/k
Determination of corrosion resistance of metallic toecaps and insoles - classification II and molded hybrid footwear							
-- --	EN ISO20344-5.6.2.1-2021	-	03	Without corrosion areas	≤ 3 corrosion areas each ≤ 2 mm in any direction	Pass	i/k
-- --	EN ISO20344-5.6.2.1-2021	-	04	Without corrosion areas	≤ 3 corrosion areas each ≤ 2 mm in any direction	Pass	i/k
Upper							
Determination of upper flexing resistance (polymeric materials)							
Polimeric material (-5ºC)	EN ISO20344-6.5-2021	--	10	no cracks	no cracks after 150 kc	Pass	i/k
Determination of resistance to hydrolysis							
-- --	ISO5423-ANEXO B e E-1992	--	10	no cracks	no cracks after 150 kc.	Pass	i/k
Determination of elongation modulus - polymeric materials							
Modulus at 100% elongation (polimeric)	ISO4643--1992	N/mm2	10	1,5 (± 0,1)	min 1	Pass	i/k
Elongation at break (polimeric)	ISO4643--1992	%	10	461 (± 17)	min 250	Pass	i/k
Sole							
Determination of the thicnkness and height cleats							
Cleats of outsole open to the side	EN ISO20344-8.2.3-2021	--		Yes	Yes	Pass	i/k
Cleated area of outsole at forepart	EN ISO20344-8.2.3-2021	%		> 45	min 45	Pass	i/k
Cleated area of outsole at backpart (heel)	EN ISO20344-8.2.3-2021	%		> 25		Pass	i/k
Thickness of cleated outsole class II (d1)	EN ISO20344-8.2.3-2021	mm		5,7 (± 1,5)	min 3	Pass	i/k
Cleat height: class II (d2)	EN ISO20344-8.2.3-2021	mm		7,3 (± 0,6)	min 4	Pass	i/k
Height of outsole: class II (d3)	EN ISO20344-8.2.3-2021	mm		21,6 (± 4,6)	min 6	Pass	i/k

Test	Standard	Unit	Item	Result	Specification	Conformity	Note
Determination of the tear strength of the sole							
Material with density >0.9	EN ISO20344-8.3-2021	N/mm	11	14,4 (± 2,0)	min 8	Pass	i/k
Determination of the abrasion resistance of soles							
Material with density <0.9 or Class II	EN ISO20344-8.4-2021	mm3	11	80 (± 4)	max 250	Pass	i/k
Determining the flex of the sole							
-- --	EN ISO20344-8.6-2021	mm	11	Not applicable	max 4	Not Applicable	h/i/k
Determination of hydrolysis - sole							
-- --	EN ISO20344-8.7-2021	mm	11	0,0 (± 0,05)	PU: max 6 at 150 kc.	Pass	i/k

ALPHA TRACE (Laranja Fluorescente/Azul)

ALPHA TRACE (Verde/Preto)

ALPHA TRACE (Camouflage/Castanho)

ALPHA TRACE (Preto/Preto)

Notes:

a The uncertainty presented was not considered into account in the declaration of conformity. It was calculated by multiplying the standard uncertainty by the factor k=2, which for a normal distribution corresponds to an expansion probability of approximately 95%.

b In the results obtained by calculation based on individual results, the quantifiable parcels are counted, disregarding the parcels <LQ (Limit of Quantification). If all parcels are <LQ, the value issued is the LQ of the method. For this reason, the laboratory does not calculate the uncertainty, and this is not taken into account in the declaration of conformity.

c QL- Quantification limit

d Test performed by Flame Atomic Absorption.

e Left foot

f Right foot

g Right foot / Left foot

h According to the standard, the equipment plate must be at an angle of zero degrees. Since the CTCP equipment does not allow this adjustment, it is done using a wedge.

i Results from BA-1685/2024 issued on 05/03/2024

j --

k Results from BA-1924/2024 issued on 08/03/2024

Relevant additional information:
The results in this report refer only to the samples submitted for testing. The sampling is responsibility of the customer and is out the scope of accreditation. The sample was analyzed as received. All the information regarding the sample description is the responsibility of the customer. The samples delivered to test would be kept in CTCP for a maximum period of 4 months, after this time they will be destroyed.
Conformity assessment relates only to the materials tested and their comparison with the specifications or standards indicated and does not imply that a guarantee is given as to the performance of the materials.
Every comment made is out of the accredited CTCP laboratory and is based in the actual knowledge of CTCP. CTCP will not be responsible for any damage or injury that happens to the client in consequence of the information given in the report.
The uncertainty presented was not considered into account in the declaration of conformity. It was calculated by multiplying the standard uncertainty by the factor k=2, which for a normal distribution corresponds to an expansion probability of approximately 95%.
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Supervisor of Testing Report

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