



EXENA SRL

**VIA BREDA 7/A Z.I.A
CIVITANOVA MARCHE MC
62012**

TEST REPORT: RP 2014/0627-4-RP-2 of 15/04/2014

Page 1 of 12



DATE OF RECEIVING OF THE SAMPLE: 01/04/2014

SAMPLE RECEIVED FOR TESTING:

Low safety shoe art. "PEGASO S3 SRC"

TEST REQUESTED:

**Determination of the characteristics according to EN ISO 20345:2011 - Table 2 - Basic requirements for safety footwear
Slip resistance "SRC" requirement**

		
EMISSIONE	P. BIGNIA	S. MILANESI
OGGETTO	RESPONSABILE LAB. FISICO MECCANICO	RESPONSABILE LAB. ANALISI CHIMICHE

Il campionamento del materiale ricevuto da esaminare, se non diversamente indicato, è stato effettuato dal cliente.

Il residuo del campione analizzato si conserva per tre mesi.

Il Rapporto di Prova non ha validità di approvazione e/o certificazione del campione esaminato.

Il marchio ACCREDIA e/o l'Accreditamento del CIMAC non possono essere utilizzati nella documentazione di prodotto, a meno che non venga riportata copia integrale, fedele, leggibile del rapporto di prova contenente la dicitura in grassetto "Copia Conforme all'Originale".

Il CIMAC è accreditato da ACCREDIA con numero di Accreditamento 0805. Per le prove accreditate il ACCREDIA garantisce la competenza del personale, la disponibilità di strumentazione e la completezza delle procedure di prova alla norma/precedenza richiamata.

Il contenuto del presente Rapporto di Prova si riferisce unicamente al campione sottoposto a prova.

Le prove riportate nel presente Rapporto di Prova contrassegnate dalla dicitura "Non accreditato da ACCREDIA" non rientrano nell'Accreditamento.



LAB N° 0005



Physico-mechanical laboratory and chemical analysis

Tests carried out from 01.04.14 to 15.04.14

Determination of the basic requirements of safety footwear according to Table 2 of EN ISO 20345:2011 standard classification I (Footwear made from leather and other materials excluding all-rubber or all-polymeric footwear).

References to test registers:	from KS/ 11269	to KS/ 11271
	from A/ 11687	to A/ 11719
	from WS/ 03612	to WS/ 03614
	from B/ 6591	to B/ 6606
	from RS/ 01789	to RS/ 01790

Conditioning and test atmosphere: 23±1 °C 50±3 % R.H.

WHOLE FOOTWEAR			
Clauses of EN ISO 20345:2011		Results:	Requirements of EN ISO 20345:2011
5.2.1	Design:	A – Low shoe	
5.2.2	Height of upper:	size 35 = 85 mm size 42 = 91 mm size 48 = 95 mm	< 103 mm < 113 mm < 121 mm
5.2.3	Seat region:	The seat region is closed.	The seat region shall be closed.
5.3.1.1	Construction:	An insole is present in the footwear in such a way that it cannot be removed without damaging the footwear itself.	When used an insole shall be present in such a way that it cannot be removed without damaging the footwear.
5.3.1.2	Upper/outsole bond strength:	size 35 = 4,6 N/mm size 42 = 4,7 N/mm size 48 = 4,6 N/mm	≥ 4,0 N/mm ≥ 3,0 N/mm with tearing of the sole. Not applicable to stitched soles.

5.3.2 5.3.2.1	Toe protection. General:	<p>Toecaps are incorporated in the footwear in such a manner that they cannot be removed without damaging the footwear. The toecaps have an edge covering extending from the back edge of the toecap to at least 27 mm beneath it and at least 20 mm in the opposite direction.</p> <p>Toecaps shall be incorporated in the footwear in such a manner that they cannot be removed without damaging the footwear. The toecaps shall have an edge covering extending from the back edge of the toecap to at least 5 mm beneath it and at least 10 mm in the opposite direction. Scuff resistant coverings for the toe region shall be not less than 1 mm in thickness.</p>		
5.3.2.2	Internal length of toecaps:	<p>size 35 right (HAWAI ITALIA PS 143 - 7R) = 38,0 mm</p> <p>size 35 left (HAWAI ITALIA PS 143 - 7L) = 38,0 mm</p> <p>size 42 right (HAWAI ITALIA PS 143 - 10R) = 41,0 mm</p> <p>size 42 left (HAWAI ITALIA PS 143 - 10L) = 41,0 mm</p> <p>size 48 right (HAWAI ITALIA PS 143 - 12R) = 43,0 mm</p> <p>size 48 left (HAWAI ITALIA PS 143 - 12L) = 43,0 mm</p>	<p>Size:</p> <p>≤ 36</p> <p>37-38</p> <p>39-40</p> <p>41-42</p> <p>43-44</p> <p>≥ 45</p>	<p>Length:</p> <p>≥ 34mm</p> <p>≥ 36mm</p> <p>≥ 38mm</p> <p>≥ 39mm</p> <p>≥ 40mm</p> <p>≥ 42mm</p>
5.3.2.3	Impact resistance. Minimum clearance after impact:	<p>size 35 right = 12,5 mm</p> <p>size 35 left = 12,5 mm</p> <p>size 42 right = 14,0 mm</p> <p>size 42 left = 14,0 mm</p> <p>size 48 right = 15,0 mm</p> <p>size 48 left = 15,0 mm</p>	<p>Size:</p> <p>≤ 36</p> <p>37-38</p> <p>39-40</p> <p>41-42</p> <p>43-44</p> <p>≥ 45</p>	<p>Clear.:</p> <p>≥ 12,5mm</p> <p>≥ 13,0mm</p> <p>≥ 13,5mm</p> <p>≥ 14,0mm</p> <p>≥ 14,5mm</p> <p>≥ 15,0mm</p>
5.3.2.4	Compression resistance. Minimum clearance after compression:	<p>size 35 right = 12,5 mm</p> <p>size 35 left = 12,5 mm</p> <p>size 42 right = 14,0 mm</p> <p>size 42 left = 14,0 mm</p> <p>size 48 right = 15,0 mm</p> <p>size 48 left = 15,0 mm</p>	<p>Size:</p> <p>≤ 36</p> <p>37-38</p> <p>39-40</p> <p>41-42</p> <p>43-44</p> <p>≥ 45</p>	<p>Clear.:</p> <p>≥ 12,5mm</p> <p>≥ 13,0mm</p> <p>≥ 13,5mm</p> <p>≥ 14,0mm</p> <p>≥ 14,5mm</p> <p>≥ 15,0mm</p>
5.3.2.5.2	Behaviour of non metallic toecaps:	<p>Non-metallic toecaps comply with the EN 12568:2010 standard.</p> <p>Non-metallic toecaps shall comply with the EN 12568:2010 standard.</p>		



LAB N° 0005



5.3.4	Specific ergonomic features:	1- Is the inside surface of the footwear free from rough, sharp or hard areas that caused you irritation or injury? size 35 R = YES size 35 L = YES size 42 R = YES size 42 L = YES size 48 R = YES size 48 L = YES	YES
		2- Is the footwear free of features that you consider to make wearing the footwear hazardous? size 35 R = YES size 35 L = YES size 42 R = YES size 42 L = YES size 48 R = YES size 48 L = YES	YES
		3- Can the fastening be adequately adjusted? size 35 R = YES size 35 L = YES size 42 R = YES size 42 L = YES size 48 R = YES size 48 L = YES	YES

		<p>4- Can the following activities be performed without problems:</p> <p>- walking?</p> <p>size 35 R = YES size 35 L = YES size 42 R = YES size 42 L = YES size 48 R = YES size 48 L = YES</p> <p>- climbing stairs?</p> <p>size 35 R = YES size 35 L = YES size 42 R = YES size 42 L = YES size 48 R = YES size 48 L = YES</p> <p>- kneeling/crouching down?</p> <p>size 35 R = YES size 35 L = YES size 42 R = YES size 42 L = YES size 48 R = YES size 48 L = YES</p>	<p>YES</p> <p>YES</p> <p>YES</p>
--	--	--	----------------------------------

UPPER
(leather split – cod. PEG03.04)

Clauses of EN ISO 20345:2011		Results:	Requirements of EN ISO 20345:2011
5.4.1	Minimum height below which the upper requirements shall be completely fulfilled:	size 35 = 74 mm size 42 = 78 mm size 48 = 82 mm	≥ 44 mm ≥ 50 mm ≥ 53 mm
5.4.3	Tear strength:	size 35 = 187 N size 42 = 189 N size 48 = 186 N	Leather ≥ 120 N Coated fabric and textile ≥ 60 N
5.4.4	Tensile properties:	size 35 = 17 N/mm ² size 42 = 17 N/mm ² size 48 = 17 N/mm ²	Leather split ≥ 15 N/mm ²

TEST REPORT: RP 2014/0627-4-RP-2 of 15/04/2014
Page 6 of 12

5.4.6	Water vapour permeability:	size 35 = 1,2 mg/(cm ² h) size 42 = 1,2 mg/(cm ² h) size 48 = 1,2 mg/(cm ² h)	≥ 0,8 mg/(cm ² h)
	Coefficient:	size 35 = 18,4 mg/cm ² size 42 = 18,4 mg/cm ² size 48 = 18,4 mg/cm ²	≥ 15,0 mg/cm ²
5.4.7	pH value: Difference figure:	3,85 0,50	pH value ≥ 3,20, if < 4,00 difference figure < 0,70. Applicable to leather only.
5.4.9 EN ISO 17075:2007	Chromium VI content:	Not detectable. (*) (*) = lower than the detectability limit (3 mg/kg).	Not detectable. Applicable to leather only.

VAMP LINING
(textile – cod. SIF028.18)

Clauses of EN ISO 20345:2011		Results:	Requirements of EN ISO 20345:2011
5.5.1	Tear strength:	size 35 = 25 N size 42 = 25 N size 48 = 23 N	Leather ≥ 30N Coated fabric and textile ≥ 15N
5.5.2	Abrasion resistance:	- Dry: After 25.600 cycles, the wearing surface develops no holes. - Wet: After 12.800 cycles, the wearing surface develops no holes.	The wearing surface shall not develop any holes before 25.600 cycles dry and 12.800 cycles wet.
5.5.3	Water vapour permeability:	size 35 = 7,7 mg/(cm ² h) size 42 = 7,7 mg/(cm ² h) size 48 = 7,7 mg/(cm ² h)	≥ 2,0 mg/(cm ² h)
	Coefficient:	size 35 = 62,2 mg/cm ² size 42 = 62,0 mg/cm ² size 48 = 62,2 mg/cm ²	≥ 20,0 mg/cm ²
5.5.4	pH value: Difference figure:	N/A	Applicable to leather only.

TEST REPORT: RP 2014/0627-4-RP-2 of 15/04/2014
Page 7 of 12

5.5.5 EN ISO 17075:2007	Chromium VI content:	N/A	Applicable to leather only.
-------------------------------	-------------------------	-----	--------------------------------

QUARTER LINING
(textile – cod. SIF028.11)

Clauses of EN ISO 20345:2011		Results:	Requirements of EN ISO 20345:2011
5.5.1	Tear strength:	size 35 = 25 N size 42 = 25 N size 48 = 23 N	Leather ≥ 30N Coated fabric and textile ≥ 15N
5.5.2	Abrasion resistance:	- Dry: After 51.200 cycles, the wearing surface develops no holes. - Wet: After 25.600 cycles, the wearing surface develops no holes.	The wearing surface shall not develop any holes before 51.200 cycles dry and 25.600 cycles wet.
5.5.3	Water vapour permeability:	size 35 = 7,7 mg/(cm ² h) size 42 = 7,7 mg/(cm ² h) size 48 = 7,7 mg/(cm ² h)	≥ 2,0 mg/(cm ² h)
	Coefficient:	size 35 = 62,2 mg/cm ² size 42 = 62,0 mg/cm ² size 48 = 62,2 mg/cm ²	≥ 20,0 mg/cm ²
5.5.4	pH value: Difference figure:	N/A	Applicable to leather only.
5.5.5 EN ISO 17075:2007	Chromium VI content:	N/A	Applicable to leather only.

TONGUE
(coated fabric – cod. SIF01.01)

Clauses of EN ISO 20345:2011		Results:	Requirements of EN ISO 20345:2011
5.6.1	Tear strength:	size 35 = 18 N size 42 = 18 N size 48 = 18 N	Leather ≥ 36N Coated fabric and textile ≥ 18N
5.6.2	pH value: Difference figure:	N/A	Applicable to leather only.



LAB N° 0005



5.6.3 EN ISO 17075:2007	Chromium VI content:	N/A	Applicable to leather only.
-------------------------------	-------------------------	-----	--------------------------------

COLLAR

(coated fabric with polymeric material – cod. SIF01.01)

Clauses of EN ISO 20345:2011		Results:	Requirements of EN ISO 20345:2011
5.5.1	Tear strength:	size 35 = 18 N size 42 = 18 N size 48 = 18 N	Leather ≥ 30N Coated fabric and textile ≥ 15N
5.5.2	Abrasion resistance:	- Dry: After 25.600 cycles, the wearing surface develops no holes. - Wet: After 12.800 cycles, the wearing surface develops no holes.	The wearing surface shall not develop any holes before 25.600 cycles dry and 12.800 cycles wet.
5.4.7	pH value: Difference figure:	N/A	Applicable to leather only.
5.4.9 EN ISO 17075:2007	Chromium VI content:	N/A	Applicable to leather only.

INSOLE

(textile – cod. SIF009.07)

Clauses of EN ISO 20345:2011		Results:	Requirements of EN ISO 20345:2011
5.7.1	Thickness:	size 35 = 3,5 mm size 42 = 3,5 mm size 48 = 3,5 mm	≥ 2,0 mm
5.7.2	pH value: Difference figure:	N/A	Applicable to leather only.
5.7.3	Water absorption:	size 35 = 72 mg/cm ² size 42 = 72 mg/cm ² size 48 = 72 mg/cm ²	≥ 70 mg/cm ²
	Water desorption:	size 35 = 99 % size 42 = 99 % size 48 = 99 %	≥ 80 %



LAB N° 0005



5.7.4.1	Abrasion resistance:	size 35 = the abrasion damage is not more severe than that illustrated by the reference test pieces for the same family. size 42 = the abrasion damage is not more severe than that illustrated by the reference test pieces for the same family. size 48 = the abrasion damage is not more severe than that illustrated by the reference test pieces for the same family.	The abrasion damage shall not be more severe than that illustrated by the reference test pieces for the same family. Not applicable to leather.
5.7.5 EN ISO 17075:2007	Chromium VI content:	N/A	Applicable to leather only.

REMOVABLE INSOCK

(textile with polymeric material – cod. AC001.779STP)

Clauses of EN ISO 20345:2011		Results:	Requirements of EN ISO 20345:2011
5.7.2	pH value: Difference figure:	N/A	Applicable to leather only.
5.7.3	Water absorption:	size 35 = water permeable. size 42 = water permeable. size 48 = water permeable.	$\geq 70 \text{ mg/cm}^2$ or water permeable
5.7.4.2	Abrasion resistance:	- Dry: After 25.600 cycles, the wearing surface develops no holes. - Wet: After 12.800 cycles, the wearing surface develops no holes.	The wearing surface shall not develop any holes before 25.600 cycles dry and 12.800 cycles wet. Not applicable to leather.
5.7.5 EN ISO 17075:2007	Chromium VI content:	N/A	Applicable to leather only.

OUTSOLE

(polyurethane – cod. MI001.01 MI001.04 MI003.01 MI004.01 MI 005.01 MI006.01)

Clauses of EN ISO 20345:2011		Results:	Requirements of EN ISO 20345:2011
5.8.1.1	Thickness:	N/A	
5.8.1.1	Thickness:	Thickness “d ₁ ” size 35 = 12,9 mm Thickness “d ₁ ” size 42 = 12,9 mm Thickness “d ₁ ” size 48 = 13,0 mm	$\geq 4,0 \text{ mm}$

5.8.1.2	Cleated area:	<p>size 35 = the cleats of the outsole in the shaded area as shown in figure 38 of EN ISO 20344:2011 are opened to the side.</p> <p>size 42 = the cleats of the outsole in the shaded area as shown in figure 38 of EN ISO 20344:2011 are opened to the side.</p> <p>size 48 = the cleats of the outsole in the shaded area as shown in figure 38 of EN ISO 20344:2011 are opened to the side.</p>	With the exception of the region under the flange of the toecap, at least the shaded area as shown in figure 38 shall have cleats which are open to the side.
5.8.1.3	Cleat height:	<p>Cleat height "d₂" size 35 = 3,5 mm</p> <p>Cleat height "d₂" size 42 = 3,5 mm</p> <p>Cleat height "d₂" size 48 = 3,5 mm</p>	≥ 2,5 mm
5.8.2	Tear strength:	<p>size 35 = 10,1 kN/m</p> <p>Density size 35 = 1,16 g/cm³</p> <p>size 42 = 10,4 kN/m</p> <p>Density size 42 = 1,16 g/cm³</p> <p>size 48 = 10,1 kN/m</p> <p>Density size 48 = 1,16 g/cm³</p>	<p>≥ 8 kN/m for density > 0,9 g/cm³.</p> <p>≥ 5 kN/m for density ≤ 0,9 g/cm³. Not applicable to leather.</p>
5.8.3	Abrasion resistance:	<p>Relative volume loss size 35 = 50 mm³</p> <p>Density size 35 = 1,16 g/cm³</p> <p>Relative volume loss size 42 = 50 mm³</p> <p>Density size 42 = 1,16 g/cm³</p> <p>Relative volume loss size 48 = 52 mm³</p> <p>Density size 48 = 1,16 g/cm³</p>	<p>≤ 150 mm³ for density > 0,9 g/cm³.</p> <p>≤ 250 mm³ for density ≤ 0,9 g/cm³. Not applicable to leather.</p>
5.8.4	Flexing resistance:	<p>Cut growth size 35 = 1,5 mm</p> <p>Cut growth size 42 = 1,5 mm</p> <p>Cut growth size 48 = 1,5 mm</p>	≤ 4,0 mm. Not applicable to leather.
5.8.5	Hydrolysis:	<p>Cut growth size 35 = 2,5 mm</p> <p>Cut growth size 42 = 2,5 mm</p> <p>Cut growth size 48 = 2,5 mm</p>	≤ 6,0 mm. Applicable to polyurethane only.
5.8.6	Interlayer bond strength:	<p>size 35 = 3,5 N/mm (*)</p> <p>size 42 = 3,8 N/mm (*)</p> <p>size 48 = 3,5 N/mm (*)</p> <p>(*) = with tearing of the sole.</p>	<p>≥ 4,0 N/mm</p> <p>≥ 3,0 N/mm with tearing of the sole.</p>



LAB N° 0005



“SRB” requirement:

Coefficient of friction:	<ul style="list-style-type: none">- Testing surface: stainless steel plate Number 1.4301, Type 2G (cold rolled, ground)- Lubricant: glycerine- test mode: forward flat slip size 35 R = 0,18 size 35 L = 0,18 size 42 R = 0,18 size 42 L = 0,18 size 48 R = 0,19 size 48 L = 0,19	$\geq 0,18$
Coefficient of friction:	<ul style="list-style-type: none">- Testing surface: stainless steel plate Number 1.4301, Type 2G (cold rolled, ground)- Lubricant: glycerine- test mode: forward heel slip at angled contact (7°) size 35 R = 0,13 size 35 L = 0,13 size 42 R = 0,14 size 42 L = 0,14 size 48 R = 0,14 size 48 L = 0,14	$\geq 0,13$

* End of Test Report *