

Firm: Yakupoglu Tekstil & Deri San Tic AS  
Havalimani Yolu 20 km  
06750 AKYURT - ANKARA  
Turkey

CQ reference: FWT0190587/1050/  
X/DCR

Date: 28<sup>th</sup> January 2011

Samples received: -

Attention of: Gonca Bacanli

Testing completed: -

### TECHNICAL SERVICES REPORT

Subject: Testing of footwear in accordance with EN ISO 20345:2004

Sample reference: Group G1390



#### Conditions of Issue:

This report may be forwarded to other parties provided that it is not changed in any way. It must not be published, for example by including it in advertisements, without the prior written permission of SATRA.

Results given in this report refer only to the samples submitted for analysis and tested by SATRA. Comments are for guidance only.

Tests marked † fall outside the UKAS Accreditation Schedule for SATRA. All interpretations of results of such tests and the comments based upon them are outside the scope of UKAS accreditation and are based on current SATRA knowledge.

A satisfactory test report in no way implies that the product tested is approved by SATRA and no warranty is given as to the performance of the product tested. SATRA shall not be liable for any subsequent loss or damage incurred by the client as a result of information supplied in the report.

Except where stated, an uncertainty has been applied to the results within this report, based on a standard uncertainty multiplied by a coverage factor  $k = 2$ , providing for a confidence level of approximately 95%

Report prepared by: Darren Roberts  
Report signed by: Darren Roberts  
Footwear Technologist  
Footwear Technology - Testing  
On behalf of SATRA Technology Centre Ltd

## INTRODUCTION

Purpose of testing	Testing in support of EC type examination
Sample reference	Group 1390
Construction:	Moulded on
Bottom	Dual density rubber
Category of protection	SB C E WRU HRO
Designation Code	Type 1
Design	A and B
Footbed type (Option)	Seat sock present
Insole	Insoles are present
Toe cap reference	Esjot 604

Unless otherwise stated all testing carried out under report reference: FWT0188669/1040/X/MAB

## CONCLUSIONS

TEST	RESULT
EN ISO 20345:2004 Clause 5.2 Design	PASS-clauses 5.2.1 & 5.2.2
EN ISO 20345:2004 Clause 5.3 Whole Footwear	PASS-clauses 5.3.1.1, 5.3.1.2, 5.3.2.1, 5.3.2.2, 5.3.2.3, 5.3.2.4, 5.3.2.5.1, 5.3.4 & 5.3.5
EN ISO 20345:2004 Clause 5.8 Outsoles (Dual density rubber)	PASS clauses 5.8.1, 5.8.2, 5.8.3, 5.8.4, 5.8.6 & 5.8.7
EN ISO 20345:2004 Clause 6.2 Additional requirements	PASS clauses 6.2.2.1 & 6.2.4
EN ISO 20345:2004 Clause 6.3 Additional requirements	PASS clause 6.3.2
EN ISO 20345:2004 Clause 6.4 Additional requirements	PASS clauses 6.4.1, 6.4.2, 6.4.3 & 6.4.4

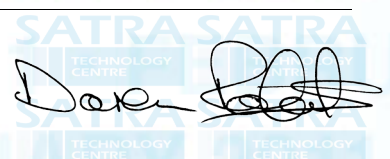
## RESULTS

EN ISO 20345:2004 Clause 5.2				
Clause in EN ISO 20345:2004	Specification requirements	Sample	Sample Result	Final result
<i>Reference and description</i>		<i>Group G1390</i>		
Height of upper (5.2.1)*	Size: 5 Design: A < 105mm Size: 8 Design: A < 113mm Size: 13 Design: B ≥121mm	Size: 38 Size: 43 Size: 48	95mm 106mm 122mm	PASS
Seat region (5.2.2)	The seat region shall be closed	Size: 3 Size: 9 Size: 14	Seat region is closed Seat region is closed Seat region is closed	PASS

\* Tested under report referenced 68767/0611/MPE-X

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(Page 2 of 7)





EN ISO 20345:2004 Clause 5.3 (Whole Footwear)				
Clause in EN ISO 20345:2004	Specification requirements	Sample	Sample Result	Final result
<i>Reference and description</i> <i>Group G1390</i>				
Construction (5.3.1.1)	When present insole cannot be removed without damaging footwear	Size: 3 Size: 9 Size: 14	Cannot be removed Cannot be removed Cannot be removed	PASS
Upper/Outsole Bond strength (5.3.1.2)	≥4.0N/mm or ≥3.0N/mm with tearing	Size: 3 Size: 9 Size: 14	4.2N/mm 4.2N/mm 6.7N/mm	PASS
General (5.3.2.1)	Toecaps shall be incorporated in such a way that they cannot be removed	Size: 35 Size: 42 Size: 49	Present and cannot be removed Present and cannot be removed Present and cannot be removed	PASS
	Footwear shall be lined in the toe region	Size: 35 Size: 42 Size: 49	Vamp lining present Vamp lining present Vamp lining present	
	Steel toe cap back edge covering shall be fitted with a ≥5mm beneath cap and ≥10mm behind cap	Size: 35 Size: 42 Size: 49	Beneath 10.0mm, Behind 21.0mm Beneath 7.0mm, Behind 14.5mm Beneath 12.0mm, Behind 15.0mm	
	Scuff resistant covering ≥1mm thickness when present	Size: 35 Size: 42 Size: 49	1.5mm 1.3mm 1.3mm	
Toecap internal length (5.3.2.2) <sup>@</sup>	Size: 35 length: ≥34mm Size: 42 length: ≥39mm Size: 49 length: ≥42mm	Size: 35 Size: 42 Size: 49	L: 41.3mm, R: 39.9mm L: 45.1mm, R: 44.5mm L: 43.1mm, R: 44.8mm	PASS
Impact resistance of safety footwear (5.3.2.3) <sup>1</sup>	Size: 36 clearance: ≥12.5mm Size: 43 clearance: ≥14.5mm Size: 49 clearance: ≥15.0mm	Size: 36 Size: 43 Size: 49	L: 14.5mm, R: 13.5mm L: 17.5mm, R: 15.5mm L: 18.5mm, R: 18.0mm	PASS
Compression Resistance of safety footwear (5.3.2.4) <sup>1</sup>	Size: 36 clearance: ≥12.5mm Size: 43 clearance: ≥14.5mm Size: 49 clearance: ≥15.0mm	Size: 36 Size: 43 Size: 49	L: 20.5mm, R: 20.0mm L: 20.0mm, R: 18.5mm L: 23.5mm, R: 24.0mm	PASS
Corrosion resistance of metallic toe caps (5.3.2.5.1) <sup>^</sup>	Metallic toe caps shall exhibit no more than 5 areas of corrosion, none of which shall exceed 2.5mm <sup>2</sup> in area.	Size: 6 Size: 6 Size: 8 Size: 8 Size: 11 Size: 11	No areas of corrosion 1 area, largest = 1.0mm <sup>2</sup> 2 areas, largest = 2.3mm <sup>2</sup> 2 areas, largest = 1.8mm <sup>2</sup> 3 areas, largest = 2.3mm <sup>2</sup> 5 areas, largest = 0.8mm <sup>2</sup>	PASS

<sup>@</sup> Tested under report referenced FWT0159829/0802/X/DCR

<sup>1</sup> Tested under report referenced FWT0190917/1102/X/DCR

<sup>^</sup> Tested under report referenced FWT0160594/0806/X/DCR

EN ISO 20345:2004 Clause 5.3 (Whole Footwear) <sup>@</sup>						
Clause in EN ISO 20345:2004	Specification requirements		Sample	Sample Result		Final result
<i>Reference and description</i> Group G1390						
Specific Ergonomic features (5.3.4)	Wearer 1	Wearer foot size: 35	Footwear size assessed: 35			PASS
	Wearer 2	Wearer foot size: 42	Footwear size assessed: 42			
	Wearer 3	Wearer foot size: 49	Footwear size assessed: 49			
	1. Is the inside surface of the footwear free from rough, sharp or hard areas that cause irritation or injury to the wearer?		Wearer 1	yes		
			Wearer 2	yes		
			Wearer 3	yes		
2. Are there <b>no</b> pinch points caused by the toe cap or the edge covering of the toe caps?		Wearer 1	yes			
		Wearer 2	yes			
		Wearer 3	yes			
2. Is the footwear free from features that are considered to make wearing of the footwear hazardous?		Wearer 1	yes			
		Wearer 2	yes			
		Wearer 3	yes			
4. Can the fastenings be adequately adjusted?		Wearer 1	yes			
		Wearer 2	yes			
		Wearer 3	yes			
5. Can the following be performed without problems:			Walking	Climbing stairs?	Kneeling/crouching?	
		Wearer 1	yes	yes	yes	
		Wearer 2	yes	yes	yes	
		Wearer 3	yes	yes	yes	

@ Tested under report referenced FWT0187515/1034/X/MAB


EN ISO 20345:2004 Clause 5.3.5 (Slip Resistance) <sup>2</sup>						
<i>Reference and description</i> Group G1390						
Specification requirements			Sample Result			Final result
Co-efficient of friction shall be not less than 0.32 flat and 0.28 heel	Ceramic tiles flat	NaLS	Size: 3	Size: 9	Size 14	PASS
	Ceramic tiles heel	NaLS	0.41	0.42	0.38	
			0.46	0.39	0.38	

<sup>2</sup> Tested under report referenced: FWT0188669/1040/X/MAB

EN ISO 20345:2004 Clause 5.8 (Outsoles)						
Clause in EN ISO 20345	Specification requirements		Sample	Sample Result		Final result
<i>Reference and description</i> Group G1390						
Thickness of non-cleated soles (5.8.1) ~	Not less than 6.0mm at any point		Size: 38 Size: 43 Size: 49	All sizes: Outsole is cleated		PASS
Tear strength (5.8.2) *	Density ≤0.9g/ml: shall be ≥5kN/m Density >0.9g/ml: shall be ≥8kN/m		Size: 3 Size: 9 Size: 14	Density: 1.16g/ml, 11kN/m Density: 1.16g/ml, 8kN/m Density: 1.16g/ml, 11kN/m		PASS

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(Page 4 of 7)



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Abrasion resistance (5.8.3) *	Density ≤0.9g/ml: Volume loss ≤ 250mm <sup>3</sup> Density >0.9g/ml Volume loss ≤150mm <sup>3</sup>	Size: 3 Size: 9 Size: 14	Density: 1.16g/ml, Volume loss: 132mm <sup>3</sup> Density: 1.16g/ml, Volume loss: 148mm <sup>3</sup> Density: 1.16g/ml, Volume loss: 136mm <sup>3</sup>	PASS
Flexing resistance (5.8.4)	Cut growth ≤4.0mm:	Size: 3 Size: 9 Size: 14	0.0mm 0.9mm 0.6mm	PASS
Outsole/Interlayer bond strength (5.8.6)	≥4.0N/mm or ≥3.0N/mm with tearing	Size: 3 <sup>3</sup> Size: 9 Size: 14	3.1N/mm with tearing 5.0N/mm 4.8N/mm	PASS
Resistance to fuel oil (5.8.7) *	Volume increase ≤12%. If volume shrinks by > 0.5% or changes in hardness by >10 Shore A, then Oil Ross flex cut growth of ≤6mm.	Size: 3 Size: 9 Size: 14	Swell: +1.5%, Hardness: 0 Shore A Swell: +0.3%, Hardness: 0 Shore A Swell: -1.3%, Hardness: -1 Shore A Oil Ross flex: 0mm	PASS

~ Tested under report referenced: FWT0190355/1049/X/DCR

\* Tested under report referenced FWT0188667/1040/X/DCR

3 Tested under report referenced FWT0190050/1047/MAB

EN ISO 20345:2004 Clause 6 (Additional requirements)				
Clause in EN ISO 20345	Specification requirements	Sample	Sample Result	Final result
<i>Reference and description</i> Group G1390				
<b>Clause 6.2 Whole footwear</b>				
Conductive footwear (6.2.2.1)	≤100kΩ after dry conditioning	Size: 5 Size: 9 Size: 14	L: 14.8kΩ, R: 16.1kΩ L: 16.5kΩ, R: 54.2kΩ L: 31.0kΩ, R: 10.2kΩ	PASS
Energy absorption of the seat region (6.2.4) ~	Energy absorbed shall be ≥20J	Size: 38 Size: 43 Size: 49	L: 33.5J, R: 32.1J L: 36.0J, R: 34.7J L: 33.3J, R: 34.2J	PASS

~ Tested under report referenced: FWT0190355/1049/X/DCR

EN ISO 20345:2004 Clause 6 (Additional requirements)				
Clause in EN ISO 20345	Specification requirements	Sample	Sample Result	Final result
<i>Reference and description</i> G1390				
<b>Clause 6.3 Uppers</b>				
Construction of Water resistant uppers (6.3.2) ~	No decorative stitching or perforations	Size: 38 Size: 43 Size: 49	All sizes: No punch holes or decorative stitching are present	PASS

~ Tested under report referenced: FWT0190355/1049/X/DCR

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(Page 5 of 7)



EN ISO 20345:2004 Clause 6 (Additional requirements)				
Clause in EN ISO 20345	Specification requirements	Sample	Sample Result	Final result
<i>Reference and description</i>		G1390		
<b>Clause 6.4 Outsoles</b>				
Cleated area (6.4.1) <sup>4</sup>	Forepart: ≥ 45% Heel: ≥ 25%	Size: 38 Size: 43 Size: 48	Forepart: 53.6%, Heel: 32.1% Forepart: 52.4%, Heel: 31.4% Forepart: 52.9%, Heel: 32.3%	PASS
Thickness of cleated outsoles (6.4.2) <sup>4</sup>	d1: ≥4.0mm	Size: 38 Size: 43 Size: 48	9.0mm 5.0mm 9.0mm	PASS
Cleat Height (6.4.3) <sup>4</sup>	d2: ≥2.5mm	Size: 38 Size: 43 Size: 48	5.0mm 5.0mm 5.0mm	PASS
Resistance to hot contact (6.4.4) ~	No melting, cracking or charring after contact at 300°C for 60 seconds	Size: 38 Size: 43 Size: 49	No damage No damage No damage	PASS

<sup>4</sup> Tested under report referenced 68767/0611/MPE-X

~ Tested under report referenced: FWT0190355/1049/X/DCR



## TERMS AND CONDITIONS OF BUSINESS

1. **GENERAL**  
Work done or services undertaken are subject to the terms and conditions detailed below and all other conditions, warranties and representations, expressed or implied are hereby excluded.
2. **PRICES**  
Prices are based on current material and production costs, exchange rates, duty and freight and are subject to change without notice.
3. **DELIVERY ESTIMATES**  
Delivery estimates are made in good faith and date from receipt of a written order and full information to enable us to proceed. While SATRA or its subsidiaries (hereafter referred to as "SATRA") make every effort to fulfil them, such estimates are subject to unforeseen events and if not maintained, cannot give rise to any claim. Offers "ex stock" are subject to prior sale.
4. **CANCELLATION AND RETURNS**  
Cancellation of orders for goods, services, training or consultancy is only acceptable by prior agreement of SATRA and a charge will normally be made.
5. **CLAIMS**  
Claims for errors, shortages etc should be notified within 10 days of date of receipt. In the event of goods damaged in transit, packing materials should be retained for examination; otherwise no liability can be accepted.
6. **PAYMENT TERMS**  
Payment terms are net 21 days from date of invoice. Failure to comply with the terms of payment may result in delayed delivery of goods and services and a review of the Customer's credit account. Should the customer become subject to an administration order, or becomes bankrupt or goes into liquidation, SATRA has a right to cancel any contract and discontinue any work. SATRA reserves the right to adjust US Dollar and Euro sales price where customer exceeds credit terms and where the exchange rate has moved more than 10% since invoicing.
7. **RETENTION OF TITLE**  
All goods remain the property of SATRA until paid in full. Under no circumstances will a customer's purchase order override SATRA's Retention of Title clause. In the case of software, the ownership of the software remains with SATRA. Payment of invoices in full will entitle the customer to use the software under licence until (a) they cease to be a member of SATRA or (b) they cease trading. In both instances, the licence shall then revert to SATRA.
8. **GUARANTEE**  
All goods manufactured by SATRA are guaranteed both as regards material and workmanship. Any part returned carriage paid, within twelve months from date of supply and found defective, will be repaired or replaced at SATRA's option free of charge. SATRA admits no liability for loss, damage or delay consequent on any defect in any goods supplied by SATRA.
9. **TEST REPORTS**  
Results given in test reports refer only to samples submitted for analysis and tested by SATRA. A satisfactory test report in no way implies that the product tested is approved by SATRA and no warranty is given as to the performance of the product tested. SATRA shall not be liable for any subsequent loss or damage incurred by the Customer as a result of information supplied in a test report.
10. **TEST SAMPLES**  
Unless otherwise agreed in advance, test samples will be disposed of 6 weeks after the date of the final report. If required, samples can be returned at the Customer's expense.
11. **RESPONSIBILITY**  
Every effort is made to ensure accuracy in description, drawings and other information in correspondence, catalogues, etc but no warranty is given in this respect and SATRA shall not be liable for any error therein. SATRA carries out all tests and/or advises only on the basis that the same are carried out, made or given without any responsibility whether for negligence or otherwise. SATRA and its servants or agents will not be liable for any damage or loss direct or indirect of whatsoever kind, whether or not the same results directly or indirectly from negligence on the part of SATRA or its servants or agents.
12. **CONFIDENTIALITY**  
Unless specifically excluded in the terms of an individual contract between SATRA and its Customer, the following shall apply to all reports, advice, drawings, photographs, specifications or data:
  - i. The above shall not be disclosed to third parties or used in litigation without the consent of SATRA.
  - ii. Where SATRA has given consent to disclosure, the Customer shall draw the attention of the third party to these terms of business and the basis on which SATRA undertakes test, reporting and advising. The Customer shall indemnify SATRA for any failure to do so.
  - iii. The above items are submitted to the Customer as confidential documents. Confidentiality shall continue to apply after completion of the business, but shall cease to apply to information or knowledge which may come into the public domain.
13. **CONSTRUCTION AND ARBITRATION**  
The laws of England shall govern all contracts and the parties submit to exclusive jurisdiction of the courts of England, unless otherwise agreed.

Issue Date: 1st October 2009

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(Page 7 of 7)