

Customer details: Ironclad Performance Wear
1920 Hutton Court
Suite #300
Farmers Branch
TX 75234
USA

SATRA reference: SPC0239691 /1544 /4

Your reference: AWB 566619453772

Date of report: 12 November 2015

Samples received: 27 October 2015

For the attention of: Derek Eshleman

Date(s) work carried out: Between 10 and 11
November 2015

TECHNICAL REPORT

Subject: Testing of gloves identified as Industrial Impact Rigger in accordance with EN 388: 2003 and EN 420: 2003 + A1: 2009

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 It must not be published, for example by including it in advertisements, without the prior, written permission of SATRA.

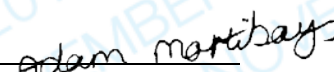
Results given in this report refer only to the samples submitted for analysis and tested by SATRA. Comments are for guidance only.

Tests marked \neq 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.

The uncertainty of the results (UoM) in this report is based on a standard uncertainty multiplied by a coverage factor $k=2$, which provides for a confidence level of approximately 95%.

Report signed by: Adam Mortiboys
Position: PPE Technologist
Department: Safety Product Testing



Work Requested

Samples of gloves, see Table 1, were received by SATRA, for testing in accordance with EN 388:2003 and EN 420:2003 + A1:2009 clauses 5.1 Sizing and 5.2 Dexterity

Table 1 – Samples Received

Sample description as stated by the client	Sizes submitted for testing	Colour of samples submitted	Approximate weight of one glove
Industrial Impact Rigger	9	Black, green and yellow	Size: 9 Weight: 144.5g



Industrial Impact Rigger

Conclusion

Standard	Clause / Property	Result
EN 420:2003 + A1:2009	5.1 Length and fit	Pass
	5.2 Dexterity	Level 4
EN 388:2003	6.1 Abrasion resistance	Level 3
	6.2 Blade cut resistance	Level 1
	6.3 Tear resistance	Level 4
	6.4 Puncture resistance	Level 2

Testing

Samples for testing were conditioned for at least 24 hours in a conditioned environment maintained at (23±2) °C and (50±5) % relative humidity. Testing was carried out within the same environment.

Requirements

Table 2 – Requirements for EN 420:2003 + A1:2009 Clause 5 Size and Dexterity

Glove size	6	7	8	9	10	11
Minimum length / mm	220	230	240	250	260	270

Performance level	1	2	3	4	5
Diameter of dexterity pin /mm	11.0	9.5	8.0	6.5	5.0

Table 3 – Requirements for EN 388:2003

Performance Level	1	2	3	4	5
6.1 Abrasion resistance (cycles to failure)	100	500	2000	8000	N/A
6.2 Blade cut resistance (minimum cut resistance index)	1.2	2.5	5.0	10	20
6.3 Tear resistance (lowest peak force / N)	10	25	50	75	N/A
6.4 Puncture resistance (lowest peak force / N)	20	60	100	150	N/A

Test Results

EN 420:2003 + A1:2009 Test Results

Clause / Test	Requirement	Test Results	UoM (See note A)	Result
5.1 Glove length, comfort and fit	See table 2	Size Length /mm	± 0.3 mm	Pass
		Left Right		
		9 269 268		
		Comments on fit: Satisfactory		
5.2 Dexterity	See table 2	Size Minimum pin diameter / mm	N/A	Level 4
		9 6.5		
		9 5.0		

EN 388:2003 Test Results

Clause / Test	Requirement	Test Results	UoM (See note A)	Level
6.1 Abrasion resistance		<p>Sample Failure between / cycles</p> <p>1 2100 – 8000</p> <p>2 >8000</p> <p>3 >8000</p> <p>4 >8000</p> <p><i>Klingspor Abrasive paper used</i> <i>Abrasion machine compliant with EN 388: 1994</i> <i>Clause 6.1.3</i></p>	<p>± 5 %</p> <p>See note B</p>	3
6.2 Blade cut resistance	See table 3	<p>Sample Cut index</p> <p>2.35</p> <p>2.50</p> <p>Left 2.27</p> <p>2.22</p> <p>2.33</p> <p>Mean 2.34</p> <p>2.42</p> <p>2.57</p> <p>Right 2.46</p> <p>2.58</p> <p>2.77</p> <p>Mean 2.56</p> <p>Testing carried out using OLFA RB 45" Blades and canvas referenced LEM 6 coton écru purchased from Latim S.A.S.</p>	± 0.14	1
6.3 Tear resistance		<p>Sample Peak force / N</p> <p>1 85.2</p> <p>2 77.7</p> <p>3 93.7</p> <p>4 88.2</p>	± 2.1 N	4
6.4 Puncture resistance		<p>Sample Peak force / N</p> <p>1 65.4</p> <p>2 67.2</p> <p>3 63.9</p> <p>4 63.7</p>	± 2.1 N	2

Additional Information / Notes

Note A – 'UoM' denotes estimated Uncertainty of Measurement for stated test results. This uncertainty value is based on a standard uncertainty multiplied by a coverage factor $k = 2$, which provides for a confidence level of approximately 95%

Note B – Estimated uncertainty of measurement applied at point of test (e.g. to applied force or to tolerance limits) to ensure product meets requirements of the standard

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Issue Date: 1st October 2009