

REPORT No 11686

Date of issue: June 17, 2026

Status: FINAL REPORT

EN 15090

FOOTWEAR FOR FIREFIGHTERS

Program: SQ-5048.V3

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Prepared by:	Reviewed by:	Approved by:
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1. FOREWORD

This report summarizes the results of the **SQ-5048.V3** proficiency testing program for assessing the performance of firefighters' footwear. This program is conducted in a bilateral format, following the "split-sample" design described in clause A.4.2 of ISO/IEC 17043: 2023 (Alternative interlaboratory comparisons).

South Quality conducted the testing program in April 2026 with the aim of assessing the laboratory's ability to competently perform the designated tests.

2. ORGANIZATION

Program Coordinator: Lic. Esther Casas
Assistant Technician: Berenice Ferrel
Statistics: Lic. Manuel Tozaki
Supervision: Eng. Emiliano Medina

3. OBJECTIVE

The objective of this proficiency testing program is to verify compliance with the radiant heat and flame requirements according to the following standard:

Standard
EN 15090: 2012

To verify this, batches of protective footwear samples have been selected.

Participants in this program have not been previously informed about the expected behavior of the samples they receive.

4. PARTICIPANT

Company: **LASRA**
Laboratory: **Physical Testing**
Country: New Zealand
Client ID: M132
Contact person: Aden Murtagh
Technician (Mechanical)
aden.murtagh@lasra.co.nz

5. HOMOGENEITY

Several batches were prepared identically by the staff at South Quality.

Subsequently, a homogeneity study was conducted with an ISO 17025 accredited laboratory.

The control process followed ISO 33405: 2024, clauses 7.4.1.1 / 7.4.1.2. Stratified random sampling was applied, and samples were selected using random number generation software.

The results of this test are presented below:

Size of each batch: **100 pairs**

Tested samples from each batch: **20 pairs**

DETERMINATION	HOMOGENEITY OF RESULTS IN THE ANALYZED SAMPLES		
	BATCH: LPP3441	BATCH: LPP3442	BATCH: LPP3443
Radiant heat (Cl. 6.3.2)	YES	NO	YES
Flame (Cl. 6.3.3)	YES	YES	YES

Samples for this program are taken from the selected batch identified as **LPP3441**.

For the indicated batch, the values determined in the homogeneity study are utilized as the assigned values.

The analysis of the test data indicated that the selected samples exhibited sufficient homogeneity for the program. Therefore, the results of participants identified as outliers cannot be attributed to sample variability.

6. SAMPLE INFORMATION

The following samples were sent for testing:

Batch:	LPP3441
Sample ID:	05 + 12
Characteristics:	Protective footwear Trademark: NEOFIRE Model: SUNWALKER Size: 35 Quantity: 2 pairs

7. IMAGES

SAMPLES



8. ASSIGNED VALUES

BATCH: LPP3441		
CLAUSE	REQUIREMENT	RESULT
6.3.2 – 7.2	Temperature increase (MAX)	0.2°C SD: 0.05°C
6.3.2 – B.2.3	Cracking (> 1/2 thickness)	PASS
	Ignition / Melting (> 1/2 thickness)	PASS
	Split seams	PASS
	Outsole cracking	PASS
	Closure mechanism	PASS
6.3.3 – 7.3	Afterflame - LACES	(>10 s) - FAIL
	Afterflame - All other components	(≤ 1 s) - PASS
	Afterglow - All components	(< 1 s) - PASS
6.3.3 – B.2.3	Deep cracking	PASS
	Upper ignition/melting	PASS
	Split seams	PASS
	Outsole cracking	PASS
	Upper/outsole separation	PASS
	Closure mechanism malfunction	FAIL

9. PARTICIPANT RESULTS (SEE APPENDIX B)

CODE: LPP3441-05		
CLAUSE	REQUIREMENT	RESULT
6.3.2 – 7.2	Temperature increase (MAX)	0.2°C
6.3.2 – B.2.3	Cracking (> 1/2 thickness)	PASS
	Ignition / Melting (> 1/2 thickness)	PASS
	Split seams	PASS
	Outsole cracking	PASS
	Closure mechanism	PASS

CODE: LPP3441-12		
CLAUSE	REQUIREMENT	RESULT
6.3.3 – 7.3	Afterflame - LACES	(>8 s) - FAIL
	Afterflame - All other components	(≤ 1 s) - PASS
	Afterglow - All components	(0 s) - PASS
6.3.3 – B.2.3	Deep cracking	PASS
	Upper ignition/melting	PASS
	Split seams	PASS
	Outsole cracking	PASS
	Upper/outsole separation	PASS
	Closure mechanism malfunction	FAIL

10. STATISTICS

The results must be treated as qualitative and quantitative.

For qualitative results, the comparison will be made directly against the assigned values, so any difference will be evaluated as **Unsatisfactory**.

For quantitative results the comparison is made according to B.4.1.3 of ISO/IEC 17043 and the appropriate technique is to compare participant results with the assigned values.

The results can be compared using ***z score***.

$$z = \frac{x - X}{\hat{\sigma}}$$

x is the participant's result

X is the assigned value

$\hat{\sigma}$ is the standard deviation

The performance evaluation of each sample is carried out with the following criteria:

$|z| \leq 2.0$ indicates “satisfactory” performance and generates no signal;

$2.0 < |z| < 3.0$ indicates “questionable” performance and generates a warning signal;

$|z| \geq 3.0$ indicates “unsatisfactory” performance and generates an action signal;

11. EVALUATION OF PERFORMANCE

A - QUANTITATIVE RESULTS

CLAUSE	REQUIREMENT	BATCH: LPP3441		z score	PERFORMANCE RESULT
		PARTICIPANT RESULT	ASSIGNED VALUE		
6.3.2 – 7.2	Temperature increase (°C)	0.2	0.2	0	SATISFACTORY

B - QUALITATIVE RESULTS

CLAUSE	REQUIREMENT	BATCH: LPP3441		PERFORMANCE RESULT
		PARTICIPANT RESULT	ASSIGNED VALUE	
6.3.2 – B.2.3	Cracking (> 1/2 thickness)	PASS	PASS	SATISFACTORY
	Ignition / Melting (> 1/2 thickness)	PASS	PASS	SATISFACTORY
	Split seams	PASS	PASS	SATISFACTORY
	Outsole cracking	PASS	PASS	SATISFACTORY
	Closure mechanism	PASS	PASS	SATISFACTORY
6.3.3 – 7.3	Afterflame - LACES	FAIL	FAIL	SATISFACTORY
	Afterflame - All other components	PASS	PASS	SATISFACTORY
	Afterglow - All components	PASS	PASS	SATISFACTORY
6.3.3 – B.2.3	Deep cracking	PASS	PASS	SATISFACTORY
	Upper ignition/melting	PASS	PASS	SATISFACTORY
	Split seams	PASS	PASS	SATISFACTORY
	Outsole cracking	PASS	PASS	SATISFACTORY
	Upper/outsole separation	PASS	PASS	SATISFACTORY
	Closure mechanism malfunction	FAIL	FAIL	SATISFACTORY

12. CONCLUSIONS

The overall performance of this **SQ-5048.V3** program from the participant laboratory **LASRA - Physical Testing**, is **SUFFICIENT** based on expected results.

The criteria used for evaluating the overall performance are as follows:

- **SUFFICIENT** performance: No unsatisfactory/questionable results were obtained.
- **ALMOST SUFFICIENT** performance: No unsatisfactory results were obtained, but one questionable result was found.
- **INSUFFICIENT** performance: An unsatisfactory result was obtained.

APPENDIX A

INSTRUCTIONS



INSTRUCTIONS

PROGRAM:	FOOTWEAR FOR FIREFIGHTERS
CODE:	SQ-5048
VERSION:	3
STANDARD:	EN 15090
COORDINATOR:	Lic. Esther Casas (ecasas@ptsouthquality.com)

1 - General

This document serves as a guide for managing the results of the **SQ-5048.V3** program.

2 - Standard

EN 15090: 2012

3 - Tests involved

TEST	SUBTEST
Verification of performance of footwear for use by firefighters	Cl. 6.3.2 (Radiant heat) Cl. 6.3.3 (Flame)

4 - Samples

CODE	SAMPLE	QUANTITY
LPP3441-XX	Protective footwear - Size: 35	2 pairs

5 - Notes

- a) Being a bilateral program, there is no deadline for submitting results.
- b) The participant must submit the results using the usual report employed by their laboratory.
- c) The samples are to be handled as routine lab samples, with all testing, documentation, and reporting adhering to **EN 15090**.
- d) One pair shall be used to perform tests according to **Clause 6.3.2** and the other pair according to **Clause 6.3.3**.
- e) Samples must be retained until the end of the program, which concludes with the submission of the final report.
- f) To review the results, test images would be appreciated. Images can be attached at the end of this document or sent by email.

PHOTOGRAPHS

DSQ-012

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SQ-5048.V3

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APPENDIX B

PARTICIPANT RESULTS (TR # AP-26-11947)

New Zealand Leather & Shoe Research Association Inc.



Fitzherbert Science Centres, Dairy Farm Road, Palmerston North
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Attention: Aden Murtagh
 PT Lab

Report Details:
 Report Reference: AP-26-11947
 Date Registered: 15-04-2026
 Client Order Number:
 Submitted by: Aden Murtagh

Sample Information

Reference	Bilateral Program: SQ-5048
Number of Samples	2
Sample Type	Footwear
Testing	Flame Resistance, Radiant Heat

Results

Sample 1: LPP3441-05 - Protective Footwear - Size 35			
Test	Method	Requirement	Result
Radiant Heat	EN 15090:2012 clause 7.2	EN 15090:2012 clause 6.3.2 Temp increase: 24°C max Must conform to B.2.2 - No cracking affecting more than 1/2 material thickness - No ignition/melting affecting more than 1/2 material thickness - No split seams - Closure mechanism must remain closed and be opened easily	A: 0.1°C increase Conforms to B.2.2 B: 0.2°C increase Conforms to B.2.2

Guidance is available from LASRA regarding sampling; results can only apply to samples as received. Opinions and interpretations, where these are expressed, are outside the scope of the laboratory's terms of accreditation. This information is provided for, or at the request of members in accordance with the Rules of the Association and without liability and may only be reproduced in full.
 Testing was completed between the above Date Registered and date of report. For completion of individual analyses please contact the laboratory.

New Zealand Leather & Shoe Research Association Inc.



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Sample 2: LPP3441-12 - Protective Footwear - Size 35

Test	Method	Requirement	Result
Flame Resistance	EN 15090:2012 clause 7.3	EN 15090:2012 clause 6.3.3 Afterflame: 2s max Afterglow: 2s max Must conform to B.2.3 - No cracking affecting more than 1/2 material thickness - No ignition/melting affecting more than 1/2 material thickness - No split seams - No outsole cracks longer than 10 mm or deeper than 3 mm - No upper/outsole separation longer than 15 mm or wider than 5 mm - Closure mechanism must remain closed and be opened easily	Afterflame all components had at most 1 second of afterflame, with the exception of the laces which was greater than 8 seconds and required extinguishing Afterglow All components had 0 seconds of afterglow B.2.3 - No cracking greater than 1/2 thickness - No ignition/melting greater than 1/2 thickness - No split seams - No outsole cracking - No upper/outsole separation - Closure mechanism remained closed but could not be opened easily



Technical Service :0.00

analyses/assessment by : AM
 data checked by : ADMIN
 report checked by : AM
 date : 21-Apr-2026
 signed : 

designation of signee : Aden Murtagh
 Technician

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The following information is provided at the request of the client to assist in the interpretation of test results against the requirements of a standard, a specification, guidelines or similar.
This supplementary information is not IANZ endorsed.

Comments:

Flame Resistance

- Laces exhibited greater than 2s of afterflame
- Zip could not be easily opened after testing

date : 21-Apr-2026

signed :



designation of signee : Aden Murtagh
Technician

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