

# CERTIFICATE OF ACCREDITATION



**New Zealand Leather & Shoe Research Association**

**Client Number 251**

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**Authorised Representative**

Mr Brendon Hayman  
Quality Manager

**Programme**

Mechanical Testing Laboratory

**Accreditation Number 578**

**Initial Accreditation Date 2 October 1995**

**Conformance Standard**

ISO/IEC 17025:2017

General requirements for the competence of testing and calibration laboratories

**Laboratory Services Summary**

4.30	Safety Equipment
4.62	Textiles
4.64	Leather and Leather Products

**Key Technical Personnel**

Mr Aden Murtagh	4.30, 4.62, 4.64
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**4.30 Safety Equipment**

**(e) Safety Footwear**

**The following tests on protective footwear for fire fighters to AS/NZS 4821:2014 and referenced tests**

*General*

clause 2.2.1 Type and classification  
 Design (Design A excluded)  
 Height of upper

*Whole Footwear*

clause 3.5.1 Contact heat  
 clause 3.13 Slip resistance  
 clause 3.5.3 Flame resistance

*Toe Protection*

clause 3.7 Rigidity of toe at 500 N, mm

*Resistance to Inimical Environments*

clause 3.2 Laces melting  
 clause 3.4 Heat resistance test  
 clause 3.9 Chemical resistance  
 clause 3.10 Micro-organism resistance  
 clause 3.11 Zipper  
 clause 3.12 Eyelet and stud post attachment

*Upper*

clause 3.3.1 Thread strength  
 clause 3.3.2 Thread melting  
 clause 3.5.2 Radiant heat  
 clause 3.5.3 Flame resistance

*Outsole*

clause 3.8.1 Cleat design  
 clause 3.8.2 Cleat height  
 clause 3.8.3 Breast heel

**The following tests on protective footwear for firefighters to BS EN15090:2012 Footwear for Firefighters and AS/NZS 4821:2014 Protective footwear for firefighters – Requirements and test methods (EN 15090:2012, mod)**

5 Sampling and conditioning  
 6.3.1 Insulation against heat

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- 6.3.2 Radiant heat
- 6.3.3 Flame resistance
- 6.4 Rigidity of the toepuff
- 6.5 Resistance to chemicals
- 6.6.3 Antistatic footwear
- 6.6.4 High electrical resistance outsoles
- 6.7 Outsole
- 6.8 Zipper

**The following to ASTM F2412:2011 and ASTM F2412:2018 Standard test method for foot protection**

- clause 5 Impact Resistance
- clause 6 Compression Resistance
- clause 7 Metatarsal Impact Resistance
- clause 11 Puncture Resistance

**The requirements defined in ISO 11999.6 (2016) in accordance with the test methods of: EN 13832.3 (2006) or ISO 20344 (2011) or ISO 20345 (2011) or ISO 6942**

- 6.2.1 Insulation against Heat
- 6.2.2 Radiant Heat
- 6.2.3 Flame Resistance
- 6.3.1 Degradation Resistance
- 6.3.2 Permeation Resistance
- 6.5 Water Resistance
- 6.6.2 Cleat Height
- 6.7.3 Zipper Attachment Strength
- 6.7.3 Zipper Lateral Strength

**The following tests on protective footwear for fire fighters in accordance with ISO 11999.6 (2016)**

- Test 7.1 Insulation against Heat
- Test 7.2 Radiant Heat
- Test 7.3 Flame Resistance
- Test 7.4.1 Zipper Attachment Strength
- Test 7.4.2 Zipper Lateral Strength

**The following tests on protective footwear to CAN/CSA Z195-14**

- Clause 5.1.1 Protective toe cap impact resistance
- Clause 5.2.1 Protective sole penetration test

**The following tests on protective footwear for fire fighters to ISO 20345:2004/Amd.1:2007 (including referenced tests), ISO 20345:2011 and ISO 20344:2004 and ISO 20344:2021**

The laboratory's accreditation also includes the following Malaysian and Singaporean Standards for the tests for which the identical ISO Standards above are mentioned:

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MS ISO 20345:2008	is identical to ISO 20345:2004	
SS513 Part 1	is identical to ISO 20345:2004	
SS513 Part 2	is identical to ISO 20344:2004	
<i>General</i>		
clause 5.2.2	Height of upper, mm	ISO 20344:2004 clause 6.2.2
clause 5.2.3	Seat region	
<i>Whole Footwear</i>		
clause 5.3.1.1	Construction	
clause 5.3.1.2	Upper/outsole bond strength	ISO 20344:2004 clause 5.2 ISO 20344:2021 clause 5.2
clause 5.3.4	Specific ergonomic features	ISO 20344:2004 clause 5.1 ISO 20344:2021 clause 5.1
clause 6.2.2	Electrical properties	ISO 20344:2004 clause 5.10 ISO 20344:2021 clause 5.10
clause 6.2.4	Energy absorption of seat region	ISO 20344:2004 clause 5.14 ISO 20344:2021 clause 5.17
clause 6.2.6	Metatarsal protection	ISO 20344:2004 clause 5.16 ISO 20344:2021 clause 5.20
clause 6.2.1	Penetration resistance	ISO 20344:2004 clause 5.8.2 ISO 20344:2021 clause 5.8.2, including dimensional conformity
clause 5.3.2.1	General	
clause 5.3.2.2	Toe cap length, mm	ISO 20344:2004 clause 5.3 ISO 20344:2021 clause 5.3
clause 5.3.2.3	Impact resistance	ISO 20344:2004 clause 5.4 ISO 20344:2021 clause 5.4
clause 5.3.2.4	Compression resistance	ISO 20344:2004 clause 5.5 ISO 20344:2021 clause 5.5
clause 5.3.2.5	Behaviour of toecaps (thermal and chemical)	ISO 20344:2004 clause 5.6.1 ISO 20344:2021 clause 5.6
clause 5.6.2	Behaviour of toecaps (thermal and chemical)	EN 12568 and ISO 22568
<i>Resistance to Inimical Environments</i>		
clause 6.2.3.1	Heat insulation of sole complex	ISO 20344:2004 clause 5.12 ISO 20344:2021 clause 5.15
clause 6.2.3.2	Cold insulation of sole complex	ISO 20344:2004 clause 5.13 ISO 20344:2021 clause 5.16
clause 6.2.5	Water resistance	ISO 20344:2004 clause 5.15.1 ISO 20344:2021 clause 5.15.1
clause 5.3.3	Leakproofness	ISO 20344:2004 clause 5.7 ISO 20344:2021 clause 5.7

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*Metatarsal Protection*

clause 6.2.6.2	Impact resistance of metatarsal protective device	ISO 20344:2004 clause 5.16 ISO 20344:2021 clause 5.20
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*Upper*

clause 5.4.2	Thickness	ISO 20344:2004 clause 6.1 ISO 20344:2021 clause 6.1
clause 5.4.3	Tear strength	ISO 20344:2004 clause 6.3 ISO 20344:2021 clause 6.3
clause 5.4.4	Tensile properties	ISO 20344:2004 clause 6.4 ISO 20344:2021 clause 6.4
clause 5.4.5	Flexing resistance	ISO 20344:2004 clause 6.5 ISO 20344:2021 clause 6.5
clause 5.4.6	Water vapour Class 1 only	ISO 20344:2004 clause 6.6 & 6.8 ISO 20344:2021 clause 6.6, 6.7 & 6.8
clause 5.4.8	Hydrolysis	ISO 20344:2004 clause 6.10 ISO 20344:2021 clause 6.10
clause 6.3.1	Water penetration	ISO 20344:2004 clause 6.13 ISO 20344:2021 clause 6.13
clause 6.3.2	Upper construction	

*Vamp lining & Quarter lining*

clause 5.5.1	Tear strength	ISO 20344:2004 clause 6.3 ISO 20344:2021 clause 6.3
clause 5.5.2	Abrasion resistance	ISO 20344:2004 clause 6.12 ISO 20344:2021 clause 6.12
clause 5.5.3	Water vapour	ISO 20344:2004 clause 6.6 & 6.8 ISO 20344:2021 clause 6.6, 6.7 & 6.8

*Tongue*

clause 5.6.1	Tear strength	ISO 20344:2004 clause 6.3 ISO 20344:2021 clause 6.3
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*Insole*

clause 5.7.1	Thickness	ISO 20344:2004 clause 7.1 ISO 20344:2021 clause 7.1
clause 5.7.3	Water absorption and desorption	ISO 20344:2004 clause 7.2 ISO 20344:2021 clause 7.2
clause 5.7.4	Abrasion resistance	ISO 20344:2004 clause 7.3 ISO 20344:2021 clause 7.3

*Outsole*

clause 5.8.1	Thickness (outsole dimensions)	ISO 20344:2004 clause 8.1 ISO 20344:2021 clause 8.2
clause 5.8.2	Tear strength	ISO 20344:2004 clause 8.2 ISO 20344:2021 clause 8.3

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clause 5.8.3	Abrasion resistance	ISO 20344:2004 clause 8.3
		ISO 20344:2021 clause 8.4
clause 5.8.4	Flexing resistance	ISO 20344:2004 clause 8.4
		ISO 20344:2021 clause 8.6
clause 5.8.5	Hydrolysis	ISO 20344:2004 clause 8.5
		ISO 20344:2021 clause 8.7
clause 5.8.6	Interlayer bond strength	ISO 20344:2004 clause 5.2
		ISO 20344:2021 clause 5.2
clause 5.8.7	Resistance to fuel oil	ISO 20344:2004 clause 8.6
		ISO 20344:2021 clause 8.8
clause 6.4.1	Cleated area	ISO 20344:2004 clause 8.1
clause 6.4.2	Thickness of cleated outsoles	ISO 20344:2021 clause 8.2
clause 6.4.3	Cleat height	ISO 20344:2004 clause 8.1
		ISO 20344:2021 clause 8.2
clause 6.4.4	Resistance to hot contact	ISO 20344:2004 clause 8.7
		ISO 20344:2021 clause 8.9

**The following tests on protective clothing for users of hand-held chain saws**

ISO 11393-3:1999 (E)	Part 3: Test methods for footwear
BS EN 381-3:1996	Part 3: Test methods for footwear
ISO 17249:2013	Resistance to chainsaw cutting

**(f) Other safety products**

**The following tests on Occupational protective gloves to AS/NZS 2161.3:1998 Protection against mechanical risk**

clause 6.2	Blade cut resistance
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**The following tests on protective clothing for users of hand-held chain saws**

ISO 11393-2 Part 2:	Test Methods and performance requirements for leg protectors – Clause 9.3 Testing of resistance to cutting.
BS EN 381-2 Part 2:	Test Methods for leg protectors – Clause 8 Testing of resistance to cutting.
AS/NZS 4453.2:1997 Part 2:	Test Methods for leg protectors – Clause 8 Testing of resistance to cutting.

**The following tests to the methods shown**

ISO 7619.1:2004	Hardness of rubber and plastics to Shore A using a Durometer
AS/NZS 3744	Furniture – Assessment of the ignitability of upholstered furniture
Part 1: 1998	Ignition source – Smouldering cigarette
Part 2: 1998	Ignition source – Match-flame equivalent

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Part 3: 1998 Ignition sources – Nominal 160 mL/min gas flame and nominal 350mL/min gas flame  
BS 5852:2006 Methods of test for assessment of the ignitability of upholstered seating by smouldering and flaming ignition sources

**4.62 Textiles**

**Fabrics**

**(a) Tension tests**

ISO 13934-1 Tensile properties of fabrics – maximum force and elongation at maximum force using the strip method  
ISO 13934-2 Tensile properties of fabrics – Determination of maximum force using the grab method  
ISO 13935-1:2014 Seam tensile properties – Part 1: maximum force to seam rupture using the strip method  
ISO 13935-2:2014 Seam tensile properties – Part 2: maximum force to seam rupture using the grab method  
ISO 13936-2 Slippage resistance of yarns at a seam in woven fabrics – Fixed load Method

**(b) Tear tests**

AS 2001.2.10 Tear resistance of woven textile fabrics by the wing-rip method

**(c) Burst tests**

ASTM D3787 Bursting Strength—Constant-Rate-of-Traverse (CRT) Ball Burst Test

**(e) Wear tests**

ISO 12947-1 Abrasion resistance of fabrics – Martindale abrasion testing apparatus  
ISO 12947-2 Abrasion resistance of fabrics – Determination of specimen breakdown  
ISO 12947-3 Abrasion resistance of fabrics – Determination of mass loss  
ISO 12947-4 Abrasion resistance of fabrics – Assessment of appearance change  
ISO 12945-2 Fabric propensity to surface fuzzing and to pilling – Modified Martindale method

**(e) Other tests**

ISO 105-C06:2010 Colour fastness to domestic and commercial laundering.  
ISO 105-D01:2010 Colour fastness to drycleaning using perchlorethelyne solvent.  
ISO 105-E04 Colour fastness to perspiration  
ISO 105-E01 Colour fastness to water  
ISO 105-X12 Colour fastness to rubbing

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ISO 3801	Mass per unit length and mass per unit area
ISO 3759:2011	Preparation, marking and measuring of fabric specimens and garments in tests for determination of dimensional change
ISO 5077:2007	Determination of dimensional change in washing and drying
ISO 6330:2012	Domestic washing and drying procedures for textile testing
ISO 7211/1	Construction – Weave diagram only
ISO 12945-1:2000	Determination of fabric propensity to surface fuzzing and to pilling – Part 1: Pilling Box method.

**4.64 Leather and Leather Products**

**The following tests to ISO methods listed**

ISO 105-B02:1994(E) Method 1 to 4	Colour fastness to artificial light: Xenon arc fading lamp test
ISO 2418	Sampling (also referred to as IUP2/SLP2)
ISO 2419	Conditioning (also referred to as IUP3/SLP3)
ISO 2589	Thickness (also referred to as IUP4/SLP4)
ISO 3376	Tensile strength and percent elongation (also referred to as IUP6/SLP6)
ISO 3377	Measurement of tearing load (also referred to as IUP8/SLP7)
ISO 3379	Ball burst test
ISO 5402	Measurement of the flexing endurance of light leathers and their surface finishes (also referred to as IUP20/SLP14)
ISO 5403:2002	Dynamic waterproofness for upper leather (also referred to as IUP10/SLP22)
ISO 11640	Colour fastness to cycles of to – and fro rubbing (also referred to as IUF450/SLF470)
ISO 11642:2012	Colour fastness to water (also referred to as IULTCS/IUF 421)
ISO 11644:1993(E) Appendix A	Finish adhesion (also referred to as SLF11)

**The following tests to Other methods specified**

AATCC method 8:1989	Colour fastness to crocking
ASTM D 1813:00	Thickness of leather
ASTM D 1516:00	Width of leather
ASTM D 1913:00	Wetting of garment leather (spray-test)
ASTM D 2209:00	Tensile strength
ASTM D 2208:00	Breaking strength
ASTM D 2211:00	Elongation of leather
ASTM D 2212:00 (2005)	Slit tear resistance
ASTM D 2813:86	Sampling leather
ASTM D 4704:00	Tear strength – tongue tear
ASTM D 4705:00	Stitch tear – double hole
ASTM D 4786:00	Stitch tear – single hole

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ASTM D5053:00                      Colourfast of crocking of leather  
SATRA PM36: 1999                Break/Pipiness

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