



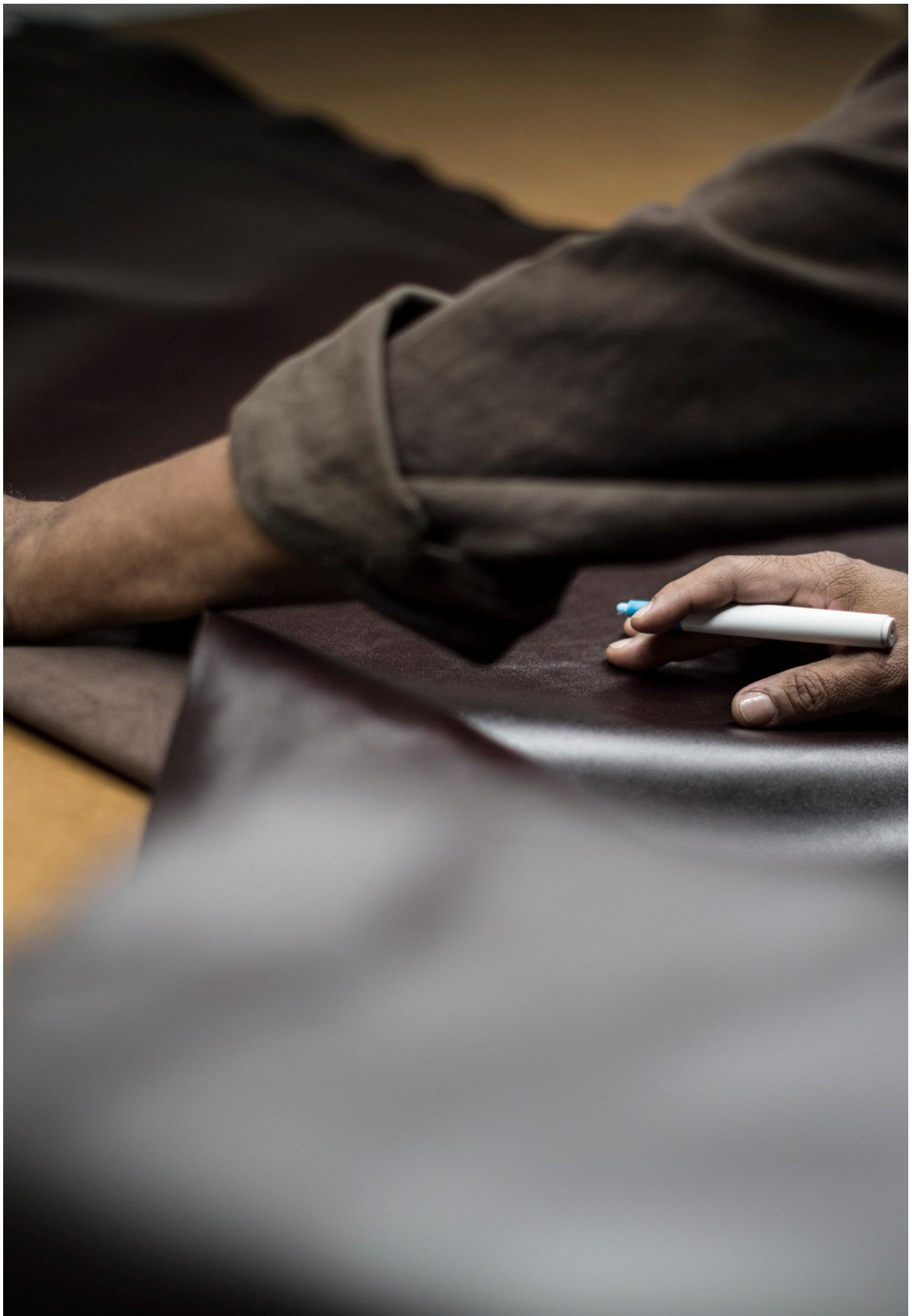
R. M. WILLIAMS
EST. 1932, AUSTRALIA

LEATHER QUALITY
MANUAL

2021

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OUR HERITAGE

MADE TO LAST

Born in the Australian outback 90 years ago, R.M.Williams creates purposefully designed and beautiful footwear, craft and accessories for all of life's adventures.

Reginald Murray ('RM') Williams founded the company, R.M.Williams, in 1932. RM recognised the need for hardwearing products and was determined to create a boot that could endure the harsh conditions of the Australian outback. Months were spent adapting a single piece of softened hide into one of the world's most recognisable footwear styles.

With an advertisement for 'Elastic Side Boots' published in Adelaide's Chronicle newspaper in 1934, R.M.Williams the brand was born and the people of Australia started to make their way to 5 Percy Street, Prospect, in South Australia.

The foundations of the R.M.Williams business are firmly built on the spirit of RM, the man. Reginald Murray Williams was a serial entrepreneur who spent his many years inventing, reinventing and perfecting new techniques. He investigated new businesses and markets, but remained grounded by his upbringing and experience.

This entrepreneurial, driven spirit remains at the core of the company culture today. Leaders across the globe are drawn to the effortless style and reliability that is at the heart of the brand, as are some of the most famous people on the planet.

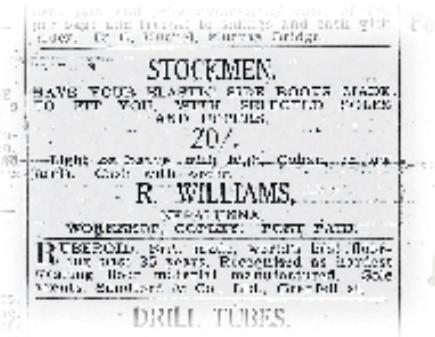
The classic boot styles incorporate more than 80 hand-held processes, each performed by men and women with multiple years' training and an eye for quality and detail. They also produce remarkable hand-plaited belts, made with more than 1000 plaits – a skill handed down from bushmen to RM himself, and then to the team who make the products today.

The iconic elastic-sided boot, made from one piece of leather, is durable enough to stand up to the rigours of the outback.

This one-piece leather construction stands R.M.Williams boots apart. Goodyear welting – the strip of leather that runs along the perimeter of the boot outsole – means not only a well-made, durable boot, but also one that can be repaired as good as new with a life expectancy of decades, if well looked after. The simplicity of the design means it can work with jeans in the outback or a suit in the city.

From the very early days, RM built his business around boots that were 'Made To Fit'. Helping the customer choose the perfect-sized boot remains critical to the enduring success of R.M.Williams, with expert staff in store to support and guide customers, and multiple boot size and width combinations available. Online, customers are given step-by-step instructions to ensure they order the perfect fit.

Through quality and extraordinary attention to detail, R.M.Williams now gives a piece of Australian outback culture to passionate followers of superior products the world over.



INTRODUCTION

The purpose of this R.M.Williams Leather Quality Manual is to provide tanneries with clear product expectations, testing and compliance requirements for all leather types. Only the leather that meets our quality, performance and safety requirements will be accepted by R.M.Williams.

Successful execution of a quality and compliance program will help to:

- deliver consistent quality to meet R.M.Williams and customer's expectations
- build and maintain a positive brand reputation
- minimise and mitigate risk
- comply with global safety, legal and environmental regulations enabling access to global markets
- meet product timelines.

SUPPLIER EXPECTATIONS

1. Suppliers are required to understand, implement, and comply with all procedures. This includes the responsibility for distributing this information to their team members and throughout their supply chain as appropriate. If a supplier is unable to comply with any procedure or requirement as outlined, R.M.Williams must be immediately notified in writing. Failure to do so may result in the evaluation of future business as well as rejection/cancellations of orders.
2. All leathers supplied to R.M.Williams are required to meet specified performance standards and any applicable legal regulations, laws or bans.
3. Once the leather is approved and established, no changes may be made without prior written notification and approval by R.M.Williams.
4. If there is any concern or knowledge that R.M.Williams leather standards or specifications cannot be met, it is mandatory these discrepancies are clearly communicated in writing to R.M.Williams. The leather specifications can be found in the following appendixes:
 - Appendix A – Upper leather
 - Appendix B – Lining leather
 - Appendix C – Vegetable tanned insole leather
 - Appendix D – Vegetable tanned top sole leather
 - Appendix E – Vegetable tanned double butt belt leather.
5. Compliance to all Product Safety and Restricted Substance List (RSL) requirements are mandatory and not negotiable. If a supplier is unable to comply with either of these requirements, they must immediately notify R.M.Williams in writing. Consequences of non-compliance to these two processes could include the termination of business. The RSL list can be found in the Appendix F.
6. For grading and leather selection please refer to R.M.Williams Leather Visual Quality Guidelines Appendix E.
7. R.M.Williams reserves the right to randomly test or request proof of leather compliance. This may be done at any stage during development, production, during product delivery and after leather is cut for boot making or sent to the store as a finished product. Suppliers may be randomly audited, either by random product testing, or review of the supplier's records to ensure compliance.

APPENDIX A

UPPER LEATHER SPECIFICATIONS

- **SUBSTANCE** (Thicker end of the scale is a must for all leather types)
 1. Black, Chestnut, Rum, Sandstone, Suedes, Crust, Croc, Ostrich and other yearling leathers
 - 1.4 - 1.6mm thick.
 2. Kangaroo – 0.7 - 0.9mm thick
 3. Greasy kips and other heavy leathers – 2.0 - 2.2mm thick
- **LASTOMETER** – [SATRA TM 24:1992] Distension of 7mm, Load of 20kg (specifications are for grain / finish crack).
- **TEAR STRENGTH** – [AS/NZS 2210.2:2009, 6.3] Baumann for 1.4 - 1.6mm leather thickness.
The preferred tear strength of 100N is desired. Less than 70N will be rejected.
- **TENSILE STRENGTH** – [AS/NZS 2210.5:2009, 5.4.4] minimum 10N/mm².
- **ADHESION OF FINISH** – [SATRA TM408:1993]. For full grained leather 250gms dry and 125gms wet.
- **ABRASION RESISTANCE** – [AS/NZS 2210.5:2009, 5.5.4], Dry 25.6kc & Wet 12.8kc.
- **FLEXING ENDURANCE** – [SATRA TM 55:1999] No cracking is to occur after 100,000 dry flexes and 10,000 wet flexes.
- **FINISHED MOISTURE CONTENT** – 12 - 14%
- **BLOCKING FINISH** – Must withstand blocking/ crimping process for 35 seconds @ 135-145 degrees C.
- **BREAK & PIPINESS SCALE** – [SATRA TM 36:1999], must be no greater than 3 on the Satra scale.
- **pH VALUE** [AS/NZS 2210.5:2009, 5.4.7] – The pH value must not be less than 3.2.
- **CHROMIUM VI** [AS/NZS 2210.5:2009, 5.4.9] – Chromium VI should not be detectable.
- **SOFTNESS** – Leather softness must be between 3 - 4 using accurately calibrated IUP/36 Test Instrument (ST300).
- **CHEMICAL SUBSTANCES & RMW RESTRICTED SUBSTANCE LIST (RSL)** – All leathers must comply with the R.M.Williams RSL and the European REACH Regulation (European chemical regulations).
- **FINISHING REQUIREMENTS** – No excessive finish as scars need to be detected before cutting.
Excessive finishing used to cover scars and other imperfections will be removed by our blocking process and result in rejects.
- **GRAIN / CORIUM RATIO** – A 30% Grain / 70% Corium ratio.

- **CUTTING YIELD** – R.M.Williams expects a minimum overall cutting yield of 0.5m²/pair of boots for each PO. This means if the PO received is 1000m², we expect to cut 2000 pairs of first quality uppers. To maximise the yield please send only grade 1 leather. Grades 2 & 3 leathers can be considered by R.M.Williams upon appropriate price negotiation.
- **GRADING & SELECTION** – MUST use R.M.Williams Visual Guidelines for unacceptable quality. Please do not use SATRA or ISO grading standards as this will result in false selecting/grading when excessive finishing is applied. We MUST see the scars and other imperfections when cutting one-piece uppers. Please make sure the Visual guidelines are followed and understood correctly. If in doubt, please let our team know.

These specifications are our minimum requirements.

Batches may be returned if specifications do not reach these standards.

APPENDIX B

LINING LEATHER

- **SUBSTANCE** – 0.9 - 1.1mm thick.
- **TEAR STRENGTH** – [AS/NZS 2210.2:2009, 6.3] Baumann for 0.9/1.1mm leather thickness.
The preferred tear strength of 50N is desired. Less than 30N will be rejected.
- **ADHESION OF FINISH** – [SATRA TM408:1993]. For full grained leather 250gms dry and 125gms wet.
- **ABRASION RESISTANCE** – [AS/NZS 2210.5:2009, 5.5.2], Dry 25.8kc & Wet 12.6kc.
- **MARRING COLOUR FASTNESS TO ACID PERSPIRATION** (Grey Scale) – [AS/NZS 2001.4.E04:2005], Minimum 4 required.
- **TRANSFER COLOUR FASTNESS TO ACID PERSPIRATION** (Grey Scale) – [AS/NZS 2001.4.E04:2005], Minimum 4 required.
- **TRANSFER COLOUR FASTNESS TO ALKALINE PERSPIRATION** (Grey Scale) – [AS/NZS 2001.4.E04:2005], Minimum 4 required.
- **MARRING COLOUR FASTNESS TO ALKALINE PERSPIRATION** (Grey Scale) – [AS/NZS 2001.4.E04:2005], Minimum 4 required.
- **DRY MARRING COLOUR FASTNESS TO RUBBING** (Grey Scale) – [AS/NZS 2001.4.3:1995], Minimum 4 required.
- **DRY TRANSFER COLOUR FASTNESS TO RUBBING** (Grey Scale) – [AS/NZS 2001.4.3:1995], Minimum 4 required.
- **WET MARRING COLOUR FASTNESS TO RUBBING** (Grey Scale) – [AS/NZS 2001.4.3:1995], Minimum 4 required.
- **WET TRANSFER COLOUR FASTNESS TO RUBBING** (Grey Scale) – [AS/NZS 2001.4.3:1995], Minimum 4 required.
- **FLEXING ENDURANCE** – [SATRA TM 55:1999] No cracking is to occur after 100,000 dry flexes and 10,000 wet flexes.
- **FINISHED MOISTURE CONTENT** – 12 - 14%
- **BLOCKING FINISH** – Must withstand blocking/ crimping process for 15 seconds @ 135 - 145 degrees C.
- **BREAK & PIPINESS SCALE** – [SATRA TM 36:1999], must be no greater than 3 on the Satra scale.
- **pH VALUE** [AS/NZS 2210.2:2009, clause 6.11] – The pH value must not be less than 3.2.

- **CHROMIUM VI** [AS/NZS 2210.2:2009, clause 6.11] – Chromium VI should not be detectable.
- **CHEMICAL SUBSTANCES & RMW RESTRICTED SUBSTANCE LIST (RSL)** – All leathers must comply with the R.M.Williams RSL and the European REACH Regulation (European chemical regulations).
- **LEATHER SOFTNESS** – [SATRA ST300 METHOD]. Softness required is 3 - 4.

These specifications are our minimum requirements.

Batches may be returned if specifications do not reach these standards.

APPENDIX C

DOUBLE BUTTS

- **SUBSTANCE** – 3.8 - 4mm thick. (Thicker end of the scale is preferred).
- **TANNING** – Must be a full grain Vegetable Tanned Double Butts. A cut section of the leather made by knife shall be smooth showing that the inside fibre is compact and fully tanned (dyed through).
- **FINISHING REQUIREMENTS** – The leather must be finished on the grain and flesh sides. The leather shall be good quality vegetable tanned leather. It shall be free from defects and should have a shiny finish (as per the sample provided).
- **ABRASION RESISTANCE** – [AS/NZS 2210.5:2009, 5.5.4], Dry 25.6kc & Wet 12.8kc.
- **FINISHED MOISTURE CONTENT** – 12 - 14%
- **pH VALUE** [AS/NZS 2210.5:2009, 5.4.7] – The pH value must not be less than 3.2.
- **CHROMIUM VI** [AS/NZS 2210.5:2009, 5.4.9] – Chromium VI should not be detectable.
- **CHEMICAL SUBSTANCES & RSL** – All leathers must comply with the R.M.Williams RSL and the European REACH Regulation (European chemical regulations).

These specifications are our minimum requirements.

Batches may be returned if specifications do not reach these standards.

APPENDIX C

VEGETABLE TANNED INSOLE LEATHER SPECIFICATIONS

- **SUBSTANCE** – Welt Insole 2.8 - 3.2mm (thickness must be consistent)
- **All insoles** are cut from the shoulder. Insoles to be leveled with a buffed grain. Insoles are stamped in the heel area on the flesh side. Small scars can be accepted, but no cuts of any sort are acceptable on the flesh side.
- **ABRASION RESISTANCE** – [VLS 7] [as per SATRA PM 84] Martindale Abrasion – 1000 revolutions with P 180 grit abrasion paper. Result must be a volume loss of less than 200mm³.
- **SOLE FLEX TEST** – [VLS 4] [as per SATRA PM 133] Sole Flexer. SATRA states that the result should be 100,000 flexes / cycles with no cracking on the grain surface.

- **GRAIN CRACK** – [VLS 15] [as per SATRA PM 48] Mandrels

Mandrel no:	1	2	3	4	5	6	7
Diameter mm	96	45	28	20	15	11	9

Grain Crack Resistance Index (GCRI) = Mandrel number + sole thickness = then divided by 10 results in the GCRI index. SATRA regards any leather with a GCRI of less than 1, as being below standard.

- **pH VALUE** – [VLS 17] [as per SATRA CM 23] SATRA advises that any vegetable tanned leather that indicates an acidic value on the strong side, causes rapid deterioration of that leather.
SCALE: 1 = Strongly Acidic, 7 = Neutral, 14 = Strong Neutral
- **TENSILE STRENGTH** – [VLS 18] [as per SATRA PM 43] Hounsfield Tensometer, measured in Kgf/Cm². SATRA state a value of no less than 155 Kgf/Cm².
- **ELONGATION AT BREAK** – [VLS 19] [as per SATRA PM 43] Hounsfield Tensometer. SATRA state an elongation value of 30% +.
- **WATER ABSORPTION** – [VLS 20] [as per SATRA PM 6] Electronic Balance. Two stages: Initial Water Absorption (I.A.) and Free Water. SATRA state a Free Water absorption rate of 36% +/- 10%.
- **HEAT RESISTANCE** – [VLS 24] [as per SATRA PM 17] oven heat and heated water shrinkage test – strip test. Oven heated to 130 Deg. C. for 1 hour. SATRA state less than 6% shrinkage after 1 hour, and that sole leather should shrink between 70-80 Deg. C.
- **DENSITY** – [VLS 5] [as per SATRA PM 68] Electronic balance thickness gauge. SATRA state, that sole leather should have a density between 1.10 to 1.50.
- **MOISTURE CONTENT** – [VLS 21] Electronic balance oven heat. SATRA state a required moisture content above 14.50%.
- **CHEMICAL SUBSTANCES** – All leathers must comply with the European REACH Regulation (European chemical regulations).

APPENDIX D

VEGETABLE TANNED TOP SOLE LEATHER SPECIFICATIONS

- **SUBSTANCE**

Men Top sole 5 - 5.5mm (thickness must be consistent)

Women Top sole (Adelaide boot) – 4.5 - 5mm (thickness must be consistent)

- **All top soles** are cut from butts. Top soles are rolled and size stamped on the grain side in the heel area.

- **ABRASION RESISTANCE** – [VLS 7] [as per SATRA PM 84] Martindale Abrasion – 1000 revolutions with P 180 grit abrasion paper. Result must be a volume loss of less than 200mm³.

- **SOLE FLEX TEST** – [VLS 4] [as per SATRA PM 133] Sole Flexer. SATRA states that the result should be 100,000 flexes / cycles with no cracking on the grain surface.

- **GRAIN CRACK** – [VLS 15] [as per SATRA PM 48] Mandrels

Mandrel no:	1	2	3	4	5	6	7
Diameter mm	96	45	28	20	15	11	9

Grain Crack Resistance Index (GCRI) = Mandrel number + sole thickness = then divided by 10 results in the GCRI index. SATRA regards any leather with a GCRI of less than 1, as being below standard.

- **pH VALUE** – [VLS 17] [as per SATRA CM 23] SATRA advises that any vegetable tanned leather that indicates an acidic value on the strong side, causes rapid deterioration of that leather.

SCALE: 1 = Strongly Acidic, 7 = Neutral, 14 = Strong Neutral

- **TENSILE STRENGTH** – [VLS 18] [as per SATRA PM 43] Hounsfield Tensometer, measured in Kgf/Cm². SATRA state a value of no less than 155 Kgf/Cm².

- **ELONGATION AT BREAK** – [VLS 19] [as per SATRA PM 43] Hounsfield Tensometer. SATRA state an elongation value of 30% +.

- **WATER ABSORPTION** – [VLS 20] [as per SATRA PM 6] Electronic Balance. Two stages: Initial Water Absorption (I.A.) and Free Water. SATRA state a Free Water absorption rate of 36% +/- 10%.

- **HEAT RESISTANCE** – [VLS 24] [as per SATRA PM 17] oven heat and heated water shrinkage test – strip test. Oven heated to 130 Deg. C. for 1 hour. SATRA state less than 6% shrinkage after 1 hour, and that sole leather should shrink between 70-80 Deg. C.

- **DENSITY** – [VLS 5] [as per SATRA PM 68] Electronic balance thickness gauge. SATRA state, that sole leather should have a density between 1.10 to 1.50.

- **MOISTURE CONTENT** – [VLS 21] Electronic balance oven heat. SATRA state a required moisture content above 14.50%.

- **CHEMICAL SUBSTANCES** – All leathers must comply with the European REACH Regulation (European chemical regulations).

APPENDIX E

LEATHER VISUAL QUALITY GUIDELINES

DEFECTS - MAJOR AND MINOR

The visual quality of leather is defined as the level of defects within the leather and the leather appearance, compared to the set standards and the leather characteristics. The quality level is expressed through the visual performance by leather inspection.

Leather can be graded using SATRA 5 Point Grading System only if scars and the other leather imperfections are not covered/hidden by the finishing process. However, our preferred method of assessing leather is using the cutting efficiency and production testing/performance (fit for purpose).

Scars and other leather imperfections covered/hidden during the finishing process will be exposed at blocking operation. When this occurs the SATRA Grading Standard becomes irrelevant. All defects, which are clearly noticeable from one meter and not considered a part of the character of the leather by R.M.Williams, and suppliers, should be classified as per the R.M.Williams Visual Leather Grading Defect Standard.

R.M.WILLIAMS VISUAL LEATHER GRADING DEFECT STANDARD			
EXAMPLE	DEFECT	CLASSIFICATION	
		MAJOR	MINOR
Colour and finish	Colour not as specified (not matching the swatch)	X	
	Colour not uniform affecting appearance	X	
	Heavy finish/print applied	X	
Feel	Leather feels boardy and firm (not matching the swatch)	X	
Grain pipiness	Excessively loose break on the finished leather/skin	X	
Leather/skin appearance	Any defect in leather such as scars, growth marks, tick marks, bacterial marks and any other defect easily noticeable at close inspection shall be classified as follows:		
	- when seriously affecting appearance, covering at least 1/2 or majority of skin	X	
	- when affecting appearance but not seriously, covering only small part of the skin		X

No leather/skins with major defects will be accepted by R.M.Williams unless specifically discussed and agreed with the supplier/tannery.

LEATHER INSPECTION & AUDITS

All leather(s) consigned to R.M.Williams must be 100% inspected by the supplier according to R.M.Williams procedures and versus the agreed specifications. The inspection report should be available and sent to Quality Control when requested.

The production / inspection outcome can always be audited by the R.M.Williams Quality Control on a random basis.

MARKING REQUIREMENTS OF MINOR AND MAJOR DEFECTS

- Minor defects must be marked with chalk
- Major defects shall also be identified / marked with chalk should they be accepted by R.M.Williams
- Any major defects 20cm or bigger but covering less than half the skin must be cut out by the tannery
- Indelible pen / chalk marking for minor defects is not accepted.
- Any shipment can be rejected if the marking of the defects is not done or not done well.

SKIN SIZES

- a. All skins are to be supplied as full half skins. The size of the skins (half skins) will naturally vary but should not exceed 2.8m².
- b. Full skins are not acceptable, unless specifically agreed by RM. Williams due to storage and handling difficulties.
- c. The size of each skin must be clearly stamped in m² at the back of the skin.
- d. The size stamps must be in the same position on all skins.

LEATHER COLOR AND SHADE EVALUATION

The color consistency and shade are visually assessed by the supplier during inspection, versus an agreed master /color swatch. Maintaining good color and shade consistency is of extreme importance.

- a. A shade standard (master and or limit(s) if applicable) must be established and agreed to by both R.M.Williams and supplier during development stage.
- b. Shade limits will be established by Product Development for all leathers considered applicable.
Limits may not be required if the color consistency is believed to be good enough.
All shade / limits are visually assessed.
In cases when limits are applicable, it is the supplier's responsibility to propose them and Product Development / Quality Control to evaluate / approve them.
Shipments may not be made outside the agreed limits with prior submission / approval.
It is supplier's responsibility to ensure the shade limits are not exceeded for the bulk production.
- c. If in doubt the supplier must send one skin as pre-shipment sample for color evaluation/approval by Product Development / Quality Control.
- d. Leather Testing will keep one skin (half a skin) from the first bulk shipment for future reference.
- e. Shade evaluation shall be performed under TL 84 (or 86) and D65. Under both light sources the shades should be equal. Colors with metamerism characteristics are not accepted.

INDIVIDUAL LEATHER SPECIFICATIONS

Each developed leather should have an Individual Development Leather Specification Sheet with the color specification sheet. These specifications are agreed upon and signed off by the Product Development and the leather supplier(s).

The specifications must include:

- individual spec sheet (physical specifications/standards)
- an A4 correct color swatch
- any other requirements specified by RM. Williams.

LEATHER PHYSICAL TESTING/EVALUATION

- a. The physical evaluation is fully executed by the leather supplier according to the agreed test methods, sampling plan and the signed off specifications.
- b. The consistency and supplier performance on testing methods and test results is monitored through an independent accredited laboratory.
- c. Physical results should be kept and provided when asked. In case of non-compliance the Quality Control should be immediately informed and the leather should be blocked.
- d. All leathers must comply with the relevant Bulk Production Physical Testing Sampling Requirements.

Unless otherwise agreed, the following are the sampling requirements:

- for every individual production batch / drum lode 300 - 1000m: a minimum of 1 sample per shipment per leather/colour
- for production batches / drum loads > 1000m: 1 sample for each 500m

Tests	Leather
Substance	X
Tensile strength	X
Tear strength	X
Lastometer test	X
Adhesion of finish	X
Abrasion resistance	X
Flexing endurance	X
Moisture content	X
Blocking	X
Break and pipiness	X
pH value	X
Chromium VI	X
Softness test	X
Colorfastness	X
Salt spew test	X
Corium / Grain ratio	X

Refer to individual leather specifications for detailed testing required, including standard testing methods.

SPECIFICATIONS FOR LEATHER PUT-UP AND LOGISTICS

- a. All leathers must be packed in such a manner that it will be protected from all types of damage during transportation and storage.
- b. Standard size pallets must be used unless otherwise specified or approved by R.M.Williams
- c. The individual pallet weight must not exceed 650kg
- d. The identification tickets must be visible for all leathers/bundles.

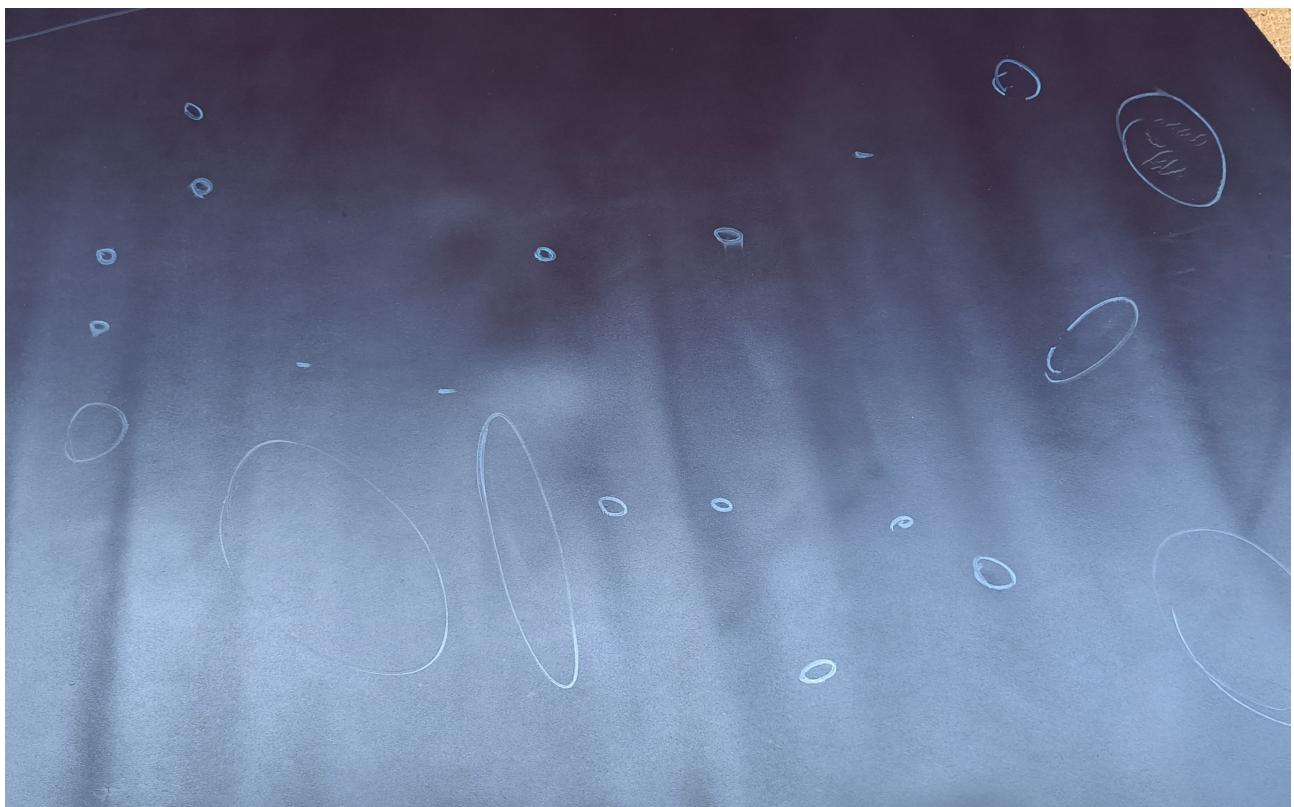
These tickets should give the following information:

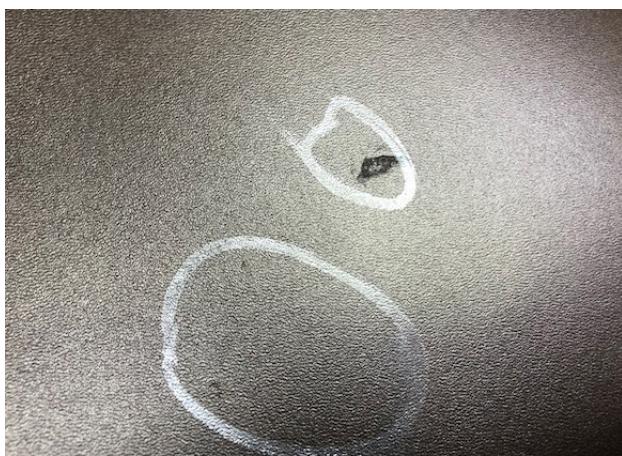
- product code
- colour
- supplier
- production Lot number
- R.M.Williams Purchase Order number
- pallet number.

VISUAL GUIDELINES OF UNACCEPTABLE QUALITY

SCARS

If there are too many scars on the skin, it becomes difficult to cut large one-piece uppers, there's a lot of waste of leather, and customers don't want scarred boots.





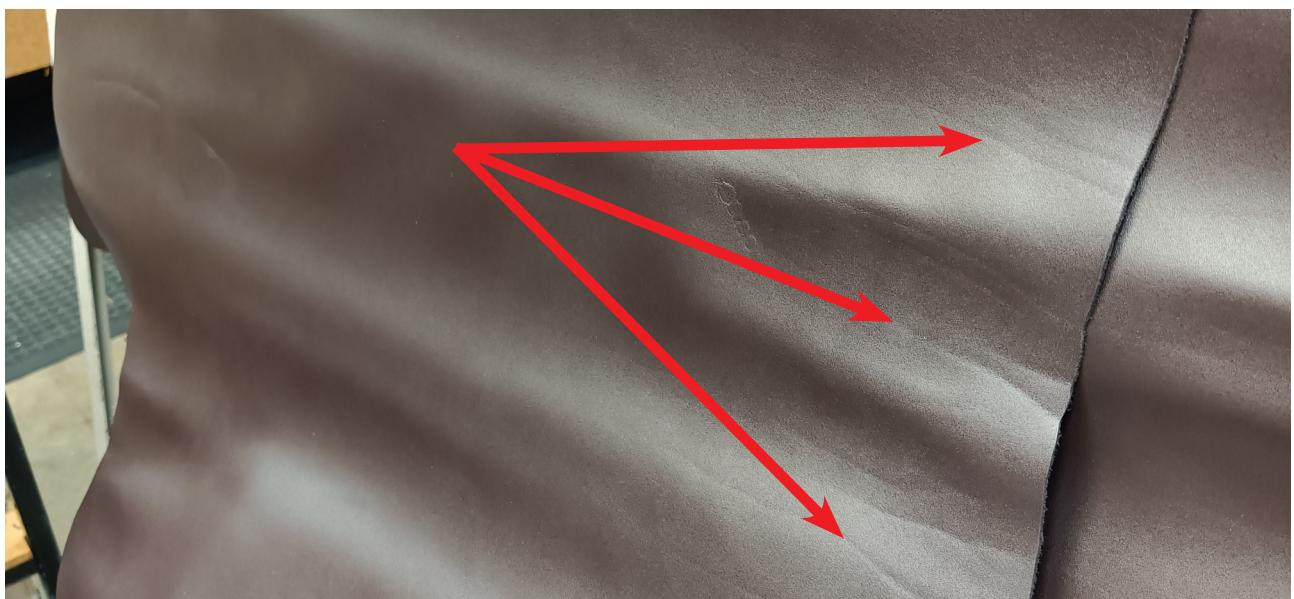
POSITIONING DIFFICULTIES

Operator must position knives around noticeable imperfections based on the selection of the skins. We are not able to respect the direction of the grain when cutting.



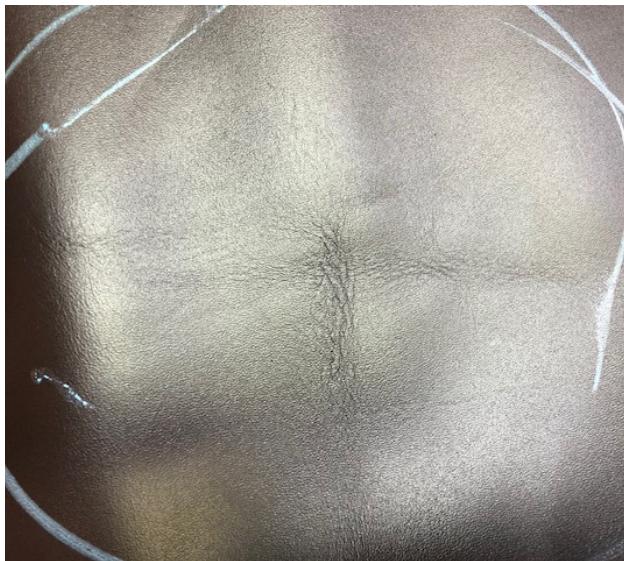
GROWTH LINES

Customers perceive it as a defect, heavy growth in uppers result in rejected uppers.



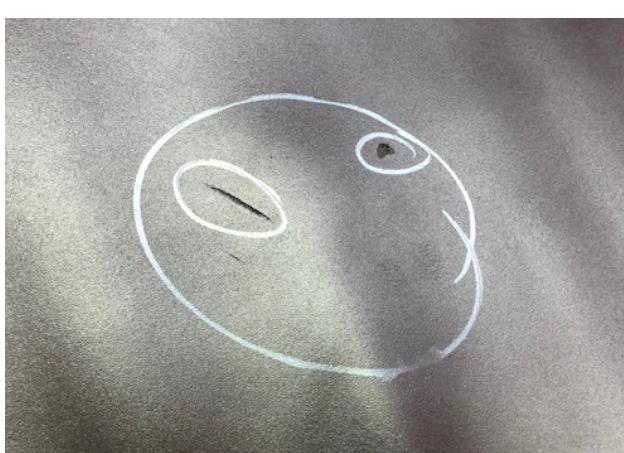
FLANK

Stretching leather does not block well. The shape of the boots fall out at the end of the process causing the upper surface to lift and break.



BUTCHER CUTS

Cannot be hidden and must be cut around.



EXCESSIVE CORRECTED FINISH

Excessive corrected leather covered scars and are exposed when blocked with heat.



DON'T USE THE NECK

Can't use the neck due to excessive growth lines.



APPENDIX F

R.M.WILLIAMS CHEMICAL POLICY

To control chemical compliance R.M.Williams established a Restricted Substances List (RSL) that specifies permitted limits of toxic and harmful substances. The RSL was developed in line with REACH regulations, as well as legislative and regulatory requirements set by trading territories that R.M.Williams operate within. There is no way to prove that a product is compliant without it undergoing full testing.

All R.M.Williams suppliers and partners are required to implement a robust chemical management system and due diligence testing to ensure compliance with R.M.Williams Restricted Substances List (RSL) and relevant international standards and legislations

Certain OEKO-tex certificates will be accepted by R.M.Williams in lieu of chemical testing.

These are only style level certificates where the whole product and all its components have been tested, e.g. OEKO-tex 100.

In addition to the routine testing carried out by the supplier, R.M.Williams reserves the right to independently test random products as a part of R.M.Williams' due diligence program. If the product conforms to limits outlined by our RSL, the costs associated with this testing will be covered by R.M.Williams.

In the event of non-conformance, cost will be at the responsibility of the supplier.

Failure to meet R.M.Williams requirements will not be commercially accepted.

Non-conformity against legal requirements R.M.Williams QA Manual and compliance processes may most definitely result in:

- rejection/return and destroy/disposal of non-compliant stock (arranged at supplier's expense)
- withdrawal product from the market or/and product RECALL from end users
- cancellation of any current and future Purchase Order deliveries
- imposition of financial deductions including but not limited to coverage of the complete costs associated with product recall, testing cost, penalties to surveillance authorities and NGOs
- debit against the supplier for lost profits
- damage of the brand/supplier's reputation
- re-examination and termination of the existing business relationship with supplier
- indemnification of R.M.Williams against third party claims resulting from non-conformity.

R.M.Williams is committed to providing you with support and guidance in exchange for transparency.

R.M.Williams strongly encourage all suppliers and partners to exceed requirements set in RSL and to promote best practices and continuous improvement.

We reserve the right to ask for test reports at any time and if proof of conformance has been submitted to R.M.Williams, we may contact the relevant laboratory to discuss details where necessary.

APPENDIX G

R.M.WILLIAMS RESTRICTED SUBSTANCES LIST (RSL)

CLASSIFICATION	RESTRICTED SUBSTANCE	CAS NO	TESTING METHOD	REGULATION / LIMIT VALUE
ARYLAMINES				
	o-Aminoazotoluene	97-56-3		
	2,4-Diaminoanisole	615-05-4 (39156-41-7)		
	2,4-Toluylenediamine	95-80-7		
	2,4-Xyliidine	95-68-1		
	2,6-Xyliidine	87-62-7		
	2-Amino-4-Nitrotoluene	99-55-8		
	2,4,5-Trimethylaniline	137-17-7 (21436-97-5)	Textiles: EN ISO 14362- 1:2017 EN ISO 14362- 3:2017	EU REACH Annex XVII Entry 43 Regs (EC) No 1907/2006
	p-Cresidine	120-71-8	Leather: ISO 17234-1:2015 ISO 17234-2:2011	COMMISSION REGULATION (EU) 2018/1513 of 10 October 2018
	3,3'-Dimethyl-4,4'- Diaminodiphenylmethane	838-88-0		Limit Value for each listed amine: 20 mg/kg
	4,4'- Diaminodiphenylmethane	101-77-9		
	4,4'-Methylene-Bis-(2- Chloroaniline)	101-14-4		
	4,4'-Oxydianiline	101-80-4		
	4,4'-Thiodianiline	139-65-1		

CLASSIFICATION	RESTRICTED SUBSTANCE	CAS NO	TESTING METHOD	REGULATION / LIMIT VALUE
CARCINOGENIC AND DISPERSE DYESTUFF				
Allergenic and Carcinogenic	Disperse Blue 3	2475-46-9	Textile: DIN 54231:2005 and LFGB §64 BVL B 82.02-10	Germany: §64 LFGB B82.02-10 Limit Value: 50 mg/kg - each listed substance
	Disperse Blue 7	3179-90-6		
	Disperse Blue 26	3860-63-7		
	Disperse Blue 35	56524-77-7 56524-76-6		
	Disperse Blue 102	12222-97-8		
	Disperse Blue 106	12223-01-7		
	Disperse Blue 124	61951-51-7		
	Disperse Red 1	2872-52-8		
	Disperse Red 151	61968-47-6		
	Disperse Red 11	2872-48-2		
	Disperse Red 17	3179-89-3		
	Disperse Yellow 1	119-15-3		
	Disperse Yellow 9	6373-73-5		
	Disperse Yellow 39	12236-29-2		
	Disperse Yellow 49	54824-37-2		
	Acid Red 26	3761-53-3		
	Basic Violet 14	632-99-5		
	Direct Black 38	1937-37-7		
	Direct Blue 6	2602-46-2		
	Direct Red 28	573-58-0		
	Direct Brown 95	16071-86-6		
	Disperse Blue 1	2475-45-8		
	Disperse Orange 11	82-28-0		
	Disperse Orange 149	85316-74-9		
	Disperse Yellow 3	2832-40-8		
	Disperse Yellow 7	6300-37-4		
	Disperse Yellow 23	6250-23-3		
	Disperse Yellow 56	54077-16-6		
	Acid Violet 49	1694-09-3		
	Basic Blue 26	2580-56-5		
	Basic Green 4	569-64-2 2437 -29-8 10309-95-2		
	Basic Violet 1	8004-87-3		
	Solvent Blue 4	6786-83-0		
	Solvent Violet 8	52080-58-7 561-41-1		
	Solvent Yellow 2	60-11-7		
	Solvent Yellow 14	842-07-9		
	Blue colorant	118685-33-9		
	Disperse Orange 37/76/59	13301-61-6 12223-33-5 51811-42-8		
	Disperse Brown 1	23355-64-8		
	Disperse Orange 1	2581-69-3		
	Disperse Orange 3			
	Basic Red 9			
	Basic Violet 3			
Others	Quinoline	91-22-5	DIN 54231:2005 AfPS GS 2019:01	COMMISSION REGULATION (EU) 2018/1513 of 10 October 2018 - Limit Value: 50 mg/kg

CLASSIFICATION	RESTRICTED SUBSTANCE	CAS NO	TESTING METHOD	REGULATION / LIMIT VALUE
BIOCIDES				
Chlorinated Phenols	Pentachlorophenol	87-86-5	Textile: Chromatographic Methods and/or Method LFGB § 64 BVL B 82.02.8 or ISO 17070	POP Regulation (EU) 2019/1021
	2,3,4,5-Tetrachlorophenol	4901-51-3		Switzerland: Chemical Risk Reduction (ChemRRV) (SR 814.81)
	2,3,4,6-Tetrachlorophenol	58-90-2	Footwear: ISO 17070:2015 or DIN 50009:2019	0.5 mg/kg each
	2,3,5,6-Tetrachlorophenol	935-95-5		
Tin Organic Compounds	Dibutyltin (DBT) compounds	1002-53-5 683-18-1	Textile, Footwear, Leather, Plastic: CEN ISO TS 16179:2012	EU REACH Annex XVII Entry 20 Regs (EC) No 1907/2006
	Diocetyltin (DOT) compounds	15231-44-4 15571-58-1		Limit Value: 1000 mg/kg by weight of Tin
	Tributyltin (TBT) compounds	36643-28-4 56-35-9		
	Triphenyltin (TPhT) compounds	668-34-8		
Biocides:	Dimethyl Fumarate (DMFu)	624-49-7	Textile: EN 17130:2019 Other Materials: CEN ISO/TS 16186:2012	EU REACH Annex XVII Entry 61 Regs (EC) No 1907/2006 Limit Value: 0.1mg/kg
Pesticides	2-Octylisothiazol-3(2H)-on	26530-20-1	ISO 13365:2011 or CADS-KOH-method	250 mg/kg
	2-Phenylphenol	90-43-7		1000 mg/kg leather 100 mg/kg other
	2-(Thiocyanomethylthio)-Benzothiazole	21564-17-0		500 mg/kg
	Triclosan	3380-34-5		50 mg/kg
	4-Chlor-3-Methylphenol (CMK)	59-50-7		600 mg/kg leather
	various	various	Chromatographic Methods and/or Methods US EPA 8081A, US EPA 8081B and US EPA 8151A	POP Regulation (EU) 2019/1021 Switzerland Chemical Risk Reduction (SR 814.81) BPR (EU) Nr. 528/2012 forbidden

CLASSIFICATION	RESTRICTED SUBSTANCE	CAS NO	TESTING METHOD	REGULATION / LIMIT VALUE
HEAVY METALS				
Heavy Metals	Cadmium (Cd)	7440-43-9	Leather: EN ISO 17072-2:2017 Other: EN 16711-1:2016 RoHS: DIN EN 62321	Limit Value: 75pp
	Chromium (VI)	18540-29-9	Leather: EN ISO 17075-2:2017 (With aging through: Time: 24hrs, Temperature 80°C ± 2°C, Humidity: <10%) RoHS: DIN EN 62321	EU REACH Annex XVII Entry 47 Regs (EC) No 1907/2006 Limit Value: 3 mg/kg
	Lead (Pb)	7439-92-1	Leather: ISO 17072-2:2019 RoHS: DIN EN 62321 Other: EN 16711-1:2016 Footwear: DIN EN 14602 Migration EN 16711-3	EU REACH Annex XVII Entry 63 Regs (EC) No 1907/2006 Denmark Statutory Order Regulation 856-2009 (others)
	Mercury	7439-97-6	Leather: EN ISO 17072-2:2017 Other: EN 16711-1:2016 RoHS: DIN EN 62321	Norway Regulation No. 922 of Limit Value: 10 mg/kg
	Nickel (Ni) Release	7440-02-0	EN 1811:2011 +A1:2015 (non-coated) EN 12472:2005+ A1:2009 (Coated items)	EU REACH Annex XVII Entry 27 of (EC) No 1907/2006 < 0.5µg/cm²/week non-pierced components < 0.2µg/cm²/week pierced components
Extractable Heavy Metals	Arsenic and arsenic compounds	7440-38-2 various	Textiles: EN 16711-2:2015	COMMISSION REGULATION (EU) 2018/1513 of 10 October 2018 Materials with skin contact 1 mg/kg
	Cadmium and cadmium compounds	7440-43-9 various		
	Lead and lead compounds	7439-92-1 various		
	Chromium(VI) compounds	18540-29-9 various	EN 16711-2:2016 with EN ISO 17075-1:2017 if Cr is detected	(Expressed as As/Cd/Pb/Cr(VI) metal that can be extracted from the material)

CLASSIFICATION	RESTRICTED SUBSTANCE	CAS NO	TESTING METHOD	REGULATION / LIMIT VALUE
PERFLUORORGANIC COMPOUNDS				
PFCs	Perfluorooctanesulfonic Acid and PFOS-related substances (PFOS)	1763-23-1 various	Textile, leather and plastic: EN ISO 23702-1:2019	POP Regulation (EU) 2019/1021 1 µg/m ² textile, coated leather
	Perfluorooctanoic Acid (PFOA) and PFOA-related salts and substances	335-67-1 various		EU: REACH Annex XVII Entry 68 (effective date: 4th July 2020) 1 µg/m ² textile, coated leather 0.025 mg/kg not coated leather for PFOA and its salts. 1 mg/kg for PFOA-related substances
ALKYLPHENOLS AND ALKYPHENOLETHOXYLATES				
AP/APEO	Alkylphenol (Ethoxylates)	Various	Alkylphenols: EN ISO 21084:2019 Alkylphenol Ethoxylates: Textile: EN ISO 18254-1: 2016 Leather: EN ISO 18218-1:2015	EU: REACH Annex XVII Entry 46a of (EU) No 2016/26 Limit Value:100 mg/kg

CLASSIFICATION	RESTRICTED SUBSTANCE	CAS NO	TESTING METHOD	REGULATION / LIMIT VALUE
VOLATILE ORGANIC COMPOUNDS AND SOLVENTS				
VOC	Formaldehyde	50-00-0	Leather: EN ISO 17226-1:2019 Textile: EN ISO 14184-1:2011	Various National Legal Requirements: < 3 years old with skin contact: 20 mg/kg Adults: Direct skin contact: 75 mg/kg Non-direct skin contact: 300 mg/kg
	1,2-Dichloroethane	107-06-2	Headspace-GC-MS (120°C/45 min)	Limit Value: 10 mg/kg
	2-Phenyl-2-Propanol	617-94-7		Limit Value: 20 mg/kg Toys: 1 mg/L
	Ethyl benzene	100-41-4		Limit Value: 10 mg/kg
	Acetophenone	98-86-2		Limit Value: 30 mg/kg Toys: 0.75 mg/L
	Benzene	71-43-2		Limit Value: 200 mg/kg
	Styrene	100-42-5		Limit Value: 100 mg/kg
	Formamide	75-12-7		Limit Value: 50 mg/kg
	Cyclohexanone	108-94-1		Limit Value: 10 mg/kg
	2-Butanone (MEK)	78-93-3		Limit Value: 50 mg/kg
	Phenol	108-95-2		Limit Value: 30 mg/kg
	Tetrachloroethylene	127-18-4		Limit Value: 30 mg/kg
	Toluene	108-88-3		Limit Value: 10 mg/kg
	Trichloroethylene	79-01-6		Limit Value: 10 mg/kg
	Xylene	1330-20-7		Limit Value: 30 mg/kg
	Dimethylformamide (DMFa)	68-12-2	Chromatographic Methods Footwear: CEN ISO/TS 16189:2013	EU: Annex XIV of REACH Authorisation List. Limit Value: 1000 mg/kg
	1-Methyl-2-pyrrolidone (NMP)	872-50-4	CEN ISO/TS 16189:2013	COMMISSION REGULATION (EU) 2018/1513 of 10 October 2018 Limit Value: 3000 mg/kg
	N,N-Dimethylacetamide (DMAc)	204-826-4		Limit value: 0.06 mg/L
	Dichloromethane	75-09-2	Test methods: EN71-10/11	Limit value: 5 mg/L
	Methanol	67-56-1		Limit value: 0.02 mg/L
	Nitrobenzene	98-95-3		

CLASSIFICATION	RESTRICTED SUBSTANCE	CAS NO	TESTING METHOD	REGULATION / LIMIT VALUE
FLAME RETARDANTS				
Flame Retardants	Octabromodiphenyl ether (OctaBDE)	32536-52-0	DIN EN ISO 17881-1:2016-09, DIN EN ISO 17881-2:2016-09 RoHS: DIN EN 62321	EU REACH Annex XVII 45 Limit Value:1000 mg/kg
	Heptabromodiphenyl ether (HeptaBDE)	68928-80-3		
	Hexabromodiphenyl ether (HexaBDE)	36483-60-0		
	Pentabromodiphenyl ether (PentaBDE)	32534-81-9		POP Regulation (EU) 2019/1021 Limit Value: 500 mg/kg
	Tetrabromodiphenyl ether (TetraBDE)	40088-47-9		
	Decabromodiphenyl ether (DecaBDE)	1163-19-5		
	Polybromobiphenyls (PBB)	59536-65-1		
	Tris-(2,3-dibromopropyl)-phosphate (TRIS) / (TDBPP)	126-72-7		
	Tris-(aziridinyl)-phosphine oxide (TEPA)	545-55-1		Germany Customer Goods Ordinance
ORGANOCHLORINE COMPOUNDS				
Organochlorinated Compounds	Pentachlorobenzene	608-93-5	Textile: Chromatographic Methods and/or Method DIN 54232:2010-08	POP Regulation (EU) 2019/1021 Limit Value:1 mg/kg
	Hexachlorobenzene	118-74-1		
	Polychlorinated naphthalenes	70776-03-3		
	4-Chlorobenzotrifluoride	5216-25-1	Leather: Chromatographic Methods	COMMISSION REGULATION (EU) 2018/1513 of 10 October 2018 Limit Value: 1 mg/kg
	Benzo trichloride	98-07-7		
	Benzyl chloride	100-44-7		

CLASSIFICATION	RESTRICTED SUBSTANCE	CAS NO	TESTING METHOD	REGULATION / LIMIT VALUE
PHTHALATE ESTERS				
Phthalates	Dibutyl phthalate (DBP)	84-74-2	RoHS: DIN EN 62321-8 Textile: ISO 14389:2014 Footwear: CEN ISO/TS 16181:2011 Leather and Plastic: Chromatographic Methods	EU REACH Annex XVII Entry 52 of (EC) No 1907/2006 4 Phthalates $\Sigma = 1000 \text{ mg/kg}$ (All articles, including RoHS)
	Benzylbutylphthalate (BBP)	85-68-7		EU REACH Annex XVII Entry 52 of (EC) No 1907/2006
	Diethylhexylphthalate (DEHP)	117-81-7		Children <14 years old
	Diisobutylphthalate (DIBP)	84-69-5		$\Sigma = 1000 \text{ mg/kg}$
	Diisodecylphthalate (DIDP)	26761-40-0		
	Diisononylphthalate (DINP)	28553-12-0		
	Di-n-octylphthalate (DNOP)	117-84-0		
	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6		COMMISSION REGULATION (EU) 2018/1513 of 10 October 2018
	Bis-(2-methoxyethyl)-phthalate (BMEP)	117-82-8		9 Phthalates $\Sigma = 1000 \text{ mg/kg}$ (Apparel and Footwear)
	Diisopentylphthalate (DiPP)	605-50-5		
(PAHs)	Dipentylphthalate	131-18-0	Plastic: AfPS GS 2019:01 PAH, (GC/MS analysis) Footwear: CEN ISO/TS 16190:2013	
	Di-n-hexylphthalate (DHP) (DnHP)	84-75-3		
	Benzo[<i>j</i>]fluoranthene	205-82-3		
	Benzo[e]pyrene	192-97-2		EU REACH Annex XVII Entry 50 of (EC) No 1907/200
	Dibenzo[a,h]anthracene	53-70-3		Adults: Limit Value: 1 mg/kg each
	Benzo[a]pyrene	50-32-8		
	Benzo[k]fluoranthene	207-08-9		
	Benzo[b]fluoranthene	205-99-2		
	Chrysene	218-01-9		Limit Value: 10 mg/kg
	Benzo[a]anthracene	56-55-3		
	Naphthalene	91-20-3		
	Acenaphthylene	208-96-8		
	Acenaphthene	83-32-9		
	Fluorene	86-73-7		
ENVIRONMENTALLY RELEVANT SUBSTANCES				
Short Chained Chlorinated Paraffins	SCCPs (C10-C13)	85535-84-8	Leather: DIN EN ISO 18219:2016 Plastics: CADS SCCP/MCCP-Method	POP Regulation (EU) 2019/1021 REACH (EC1907/2006) Limit Value: 1000 mg/kg
Ozone-depleting Substances	Various	Various	GC/MS headspace 120°C for 45 minutes	(EC) No 1005/2009 Limit value: 5 mg/kg
Fluorinated Greenhouse Gases	Various	Various	Sample preparation: Purge and trap – thermal desorption or SPME Measurement: GC/MS	(EC) No 842/2006 Limit value: 0.1 mg/kg

CLASSIFICATION	RESTRICTED SUBSTANCE	CAS NO	TESTING METHOD	REGULATION / LIMIT VALUE
OTHERS				
pH-value	pH-value	None	Non-Leather: DIN EN ISO 3071:2006; Extraction in potassium chloride Leather: EN ISO 4045:2018	Textiles: 4.0 - 7.5 / Footwear 4.0 - 7.5 Accessories: 4 - 8.5 Leather: 3.5 – 7.0 Footwear & Accessories: 3.2 – 7.0
PACKAGING PARAMETERS				
Asbestos	Various	Various	NIOSH 9002 by Polarized Light Microscopy	REACH (1907/2006/EC) Annex XVII; Entry 6 1000 mg/kg
Chlorophenols	Pentachlorophenol	87-86-5	Wood and cork: CEN/TR 14823:2003 Textile, paper and cardboard: Chromatographic with derivatization as acetate: Methods and/or Method LFGB § 64 BVL B 82.02.8	Switzerland: Chemical Risk Reduction (ChemRRV) (SR 814.81) Limit Value: Each 0.5 mg/kg
	Tetrachlorophenols	4901-51-3 58-90-2 935-95-5		
Biocides	Dimethyl Fumarate	624-49-7	Textile, Leather and Plastic: Chromatographic Methods (GC-MS and LC-MS) ISO/TS 16186:2012	REACH (1907/2006/EC) Annex XVII; Entry 61 Limit Value: 0.1 mg/kg
Flame Retardants	Various (As above)	Various (As above)	Solvent Extraction followed by GC MS/LC-MS Analysis (EPA methods 527 and 8321B)	REACH (1907/2006/EC) Annex XVII; Entry 67 POP Regulation (EU) 2019/1021 Limit Values: As above
Organochlorinated Compounds	Pentachlorobenzene	608-93-5	Textile: Chromatographic Methods and/or Method DIN 54232:2010-08 Leather: Chromatographic Methods	POP Regulation (EU) 2019/1021 Limit Value: 1 mg/kg
	Polychlorinated Naphthalenes	70776-03-3		
Pesticides	Various	Various	As above	As above
Short Chain Chlorinated Paraffins	SCCPs (C10-C13)	05535-84-8	Leather: DIN EN ISO 18219:2016 Plastics: CADS SCCP/MCCP-Method	POP Regulation (EU) 2019/1021 REACH (EC1907/2006) Limit Value: 1000 mg/kg
Heavy Metals	Sum of Lead, Cadmium, Mercury, Chromium VI	Various	Lead, Cadmium Mercury: Total digestion; ICP-OES or ICP-MS (EPA methods 3015A and 6020A). Chromium(VI), by extraction and UV-Vis analysis (EPA method 7196A)	European Parliament and Council Directive 94/62/EC on packaging and packaging waste Limit Value: $\geq 100 \text{ mg/kg}$
SUBSTANCES OF VERY HIGH CONCERN				
SVHCs	REACH (EC1907/2006), Suppliers to fulfil obligations imposed by Article 33, for the SVHCs in the concentration of above 0.1% by weight of whole product: https://echa.europa.eu/candidate-list-table In case a customer is requesting information on SVHCs, we will require an official statement in writing from your company. This information must be provided within 5 working days upon receipt of the notification about request.			