Sustainable Leather Foundation
Standard for Solid Waste

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FSE13 SOLID WASTE STANDARD AND BENCHMARK

Summary: The SLF Solid Waste standard provides the context, audit of facility Solid Waste, and provides the facility under audit the methodology to analyse and report their Solid Waste impacts to an interested party ensuring the reporting of Solid Waste levels, and such that the environmental impact of the facility can be compared to global levels and to other facilities of similar size and type.

1. Scope

Buljan and Král (2019) outlines the best practice options for the characterisation, treatment, and disposal of facility solid waste and by-products. The waste hierarchy is best applied to the strategizing of how a facility should consider solid waste: prevention, minimisation, reuse, recycling, recovery, and finally disposal.

Considering wastes and by-products from the entire value chain (from farm to end-of-life) in the direct and applied industries can produce a varied list. These solid wastes can be characterised in general categories as follows:

1) Office waste
2) Catering waste
3) Processing waste or by-products
4) Sanitation waste
5) Mitigation from emission and effluent solid waste (filtrates and sludges)
6) Packaging (this include contaminates waste from chemicals, drums etc.)
7) Old, not utilized or contaminated chemicals
8) Waste from maintenance – oil, etc (just we need to fine appropriate term)
9) Electro waste (this most likely also within tanneries will grow)

The Scope of this Audit Standard includes the facility and any of their sub-contractors. The method and definition of Solid Waste for all facilities in the leather value chain is included in this Standard. The facilities in the value chain include all facilities from the farm to the end-of-life of the leather.

The Standard on Solid Waste also includes the facilities (including their sub-contractors, and waste handling/treatment vendors) on their properties within Scope. The Solid Waste in question is only related to the Scope of the SLF audit (or mapped certification) that is being audited. The Scope of the Solid Waste Standard does not include indirect activities that are related to the preparation of inputs - that are then used on the site (included within the Scope of the audit).

2. Normative references

The following referenced documents are useful in the understanding of this document and are provided for further guidance. In the case of dispute these references form the core of the evidence in support of the Standard and Benchmarks used here:

Buljan, J. and Král, I. (2019) The framework for sustainable leather manufacture. (2 ed.) United Nations Industry Development Organisation (UNIDO), Vienna, Austria[1]

SLF (2021) *SLF Audit Standard* v 1.0. Sustainable Leather Foundation, Northampton, United Kingdom.

IULTCS: IUE 2 – Recommendations for Tannery Solid By-Product Management (2018 updated document)[2]

[1] https://leatherpanel.org/content/framework-sustainable-leather-manufacture-second-edition

[2] https://iultcs.org/wp-content/uploads/2020/07/IUE_2.pdf

3. Terms and definitions

By-product – an output that contains some value (a user would pay for obtaining it, as opposed to a waste being where a producer pays someone to take it), but not enough value to supersede the value of the main product being manufactured.

Waste – an output that has no value that generally results in a producer paying someone to take the material away for treatment or disposal. A waste that is valorised, after the waste handling transaction, undergoes an end-of-waste scenario.

4. Principle

The solid waste output quantified, must be linked to a Solid Waste Risk Assessment and a Solid Waste log which records which waste or by-products are produced on-site and at what level.

The facility solid waste quantities (or their contracted third-party facility) are monitored, divided by the total amount of square meters processed by the facility, and the levels obtained (kg/m^2) will result in the output being classified as A, B, C, or D. The principle of solid waste assessment is to measure the solid waste quantity that are produced by the facility (by weighing) and to provide the facility with data that helps minimise the contribution that the facility makes to those levels. The due diligence of the facility being audited is to do estimates (through calculations) and confirm them with measurements that show that that the facility is not responsible for the waste contribution into the environment. It is the requirement of this standard that the facility shows continuous improvement in the solid waste quantities of the facility and that a strategy is in place to improve low environmental performance, with waste levels falling in C and D bands.

The facility solid waste quality benchmark levels laid out in this Standard appear in four bands A, B, C, and D. The B-Banding correspond (in part) onto the Buljan and Král (2019) and includes an additional three SLF bands, see Table 1. The limit given in the B-band column, see Table 1, is the maximum level that the facility can have to be awarded a B-band.

A-Banding is a level considered using the levels given in Buljan and Král (2019) that demonstrate outstanding effort (possibly non-detectable levels, or maximum value). A-Banding is automatically awarded to facilities that do not have any processes that generate the wastes listed or whose waste inventories can show that the solid wastes listed is not directly produced by the facility, or that the tannery is obtaining maximum value from the waste. The limit given in the A-band column, see Table 1, is the level of solid waste that a facility can must be awarded an A-band. Valorised waste is listed in waste marked with an asterisk. If a facility does not valorise the waste the facility will obtain a D-banding.

C-Banding shows a level below the levels given in Buljan and Král (2019) which indicates, transparently, that the facility is below the Buljan and Král (2019) levels and that work is underway to improve this. If a stricter level than those given in C-Banding is required by law (then the regulatory limit will supersede the C-Banding limit). The limit given in the C-band column, see Table 1, is the maximum level that the facility can have to be awarded a C-band.

D-Banding shows that the solid waste quantity has not been measured at the time of the audit, is exempt from monitoring, or that the waste is not valorised.

The frequency of weighing solid waste is an important decision, with the optimum laying somewhere between too frequent and not frequent enough.

Minimisation and mitigation to lower solid waste before they can enter the environment and continuous improvement of the solid waste generated from the facility is considered minimum standard practice and the decision-making and monitoring of the facility must demonstrate this practice.

5. Procedure and benchmark

5.1 The quantity of material being handled or processed by the facility must be measured or estimated. Farms and slaughterhouses can use estimates based on area of raw materials known for certain size animals.

5.2 If using third parties to process the material, the area of leather must be measured or estimated as in Clause 5.1.

5.3 Solid waste streams associated with the facility must be identified from Table 1, the Solid Waste inventory, the Solid Waste Risk Assessment, and will be marked off on the report sheet, see Annex A. Exclusions should be fully explained.

Table 1Solid waste benchmarks for facilities (adapted from Buljan and Král, 2019).

Substance	Limit (kg/m^2)			
	A	B	C	D
Lime and raw trimmings*	1.50	0.72	0.20	NM
Fleshings*	2.50	1.95	0.50	NM
Splitting waste	0.20	0.77	1.50	NM
Shavings	0.20	0.72	1.50	NM
Tanned trimmings	0.05	0.15	0.50	NM
Buffing dust	0.01	0.07	0.30	NM
Hair*	0.15	0.04	0.01	NM
Crust trimmings	5	50	100	NM
Finished leather trimmings	0.01	0.04	0.15	NM
Packaging	0.01	0.03	0.1	NM

NM = not measured yet * must be converted into value

5.4 The frequency of solid waste measurement must be decided (recorded in a decision log) and reviewed (yearly).

5.5 Solid waste quantities must be tallied at least weekly, and the auditor will need a thorough explanation why the facility frequency of weighing was decided.

5.6 The facility will monitor (at the frequency decided in Clause 5.4 and 5.5) the total solid waste streams and these will be recorded on Annex A.

5.7 The quantities for each solid waste are diagnosed according to the scheme outlined below (and Table 1).

5.8 The banding should be recorded on the SLF Standard Solid Waste Annual Report (given in Annex B).

5.9 The facility will monitor and track (including visibly) the annual performance of the solid waste management.

5.10 A solid waste policy/plan for the facility or for the third-party sub-contractors must be detailed to ensure optimal performance of those plants.

5.11 The continuous improvement in lowering solid waste quantities will be monitored by annual review and necessary improvements planned for.

6. Calculation of solid waste quantities

6.1 Solid waste streams associated with the facility, that are marked off as laid out in Clause 5.3, must be compared, and rated using Table 1.

6.2 Solid waste quantities are measured (at a frequency decided by management) are recorded using Annex A and those levels transferred to Annex B to show yearly performance.

6.3 A test result that exceeds the maximum level permitted in the C-Banding constitutes an incident and should be recorded, as such, in Annex A.

6.4 A report explaining the incidents and their root cause should be generated for each incident, which should be reviewed by management, and decisions needed to prevent future incidents should be logged against each incident.

6.5 The Standard expects that the decisions to mitigate incidents should result in progress.

7. Diagnostic parameters

7.1 Solid waste levels determined by Clause 6, that a facility is required to monitor in whole or in part, in the manner specified by the Principle/Procedure (outlined above), will be published by their banding and measured annual average.

7.2 The publication will allow full transparency and focussed environmental objectives that can drive continuous improvement.

7.3 Solid waste associated with the facility, that have been excluded from Annex A must be fully justified.

7.4 The number of incidents calculated from Clause 6.3 must be recorded on Annex B for each.

7.5 The mitigation decision making outlined in Clause 6.5 should show tangible continuous improvement, specifically that the frequency of incidents is declining, not increasing.

8. Report

The annual test report for Solid Waste is the latest digital or printed report that shows the solid waste calculated (see Clause 6). The report, Annex B, should include:

1. A reference to this Sustainable Leather Foundation Standard (i.e., FS010.1: 2021)
2. Solid waste identified from Table 1, which were identified as relevant for the facility will be marked off on Annex A with justification for any exclusions being recorded in a decision log.
3. The levels of each solid waste stream that has been recorded (using Annex A) and averaged for the whole of the year, see Annex B.
4. The Solid Waste outputs and how they compare to the SLF benchmark should appear on the webpage dashboard and the digital device application content.

Note:

1. Some wastes – dedusted salt; raw trimmings; lime trimmings; limed split; recovered hair not is not always possible to reduce, e.g., limed trimmings (shoulders, flanks) are better if there are more, also possible for further processing. If splitting in pelt is accurate, we will have more limed split; shoulders and flanks but later less shavings. It is easier to valorise untanned waste – a tannery must be using the waste or the waste becomes problematic again.

Annex A

Facility name: **Date:**

Relevant? (Tick if Y)	**Solid waste stream**	**Measured Levels**	**Incident (Y/N)?**
☐	Lime and raw trimmings		
☐	Fleshings		
☐	Splitting waste		
☐	Shavings		
☐	Tanned trimmings		
☐	Buffing dust		
☐	Hair		
☐	Crust trimmings		
☐	Finished leather trimmings		
☐	Packaging		

Annex B – Sustainable Leather Foundation Solid Waste Annual Report (FS010.1)

Facility name: **Year:**

Relevant? (Tick if Y)	**Solid waste stream**	**Annual level (Banding)**	**Number of incidents**
☐	Lime and raw trimmings		
☐	Fleshings		
☐	Splitting waste		
☐	Shavings		
☐	Tanned trimmings		
☐	Buffing dust		
☐	Hair		
☐	Crust trimmings		
☐	Finished leather trimmings		
☐	Packaging		
What was the area of material processed by the facility?			**m²**
Was the material production contracted to a third party?		☐ **YES**	☐ **NO**
Were the exclusions of substances in Annex A justified?		☐ **YES**	☐ **NO**
Was a decision log (or similar) seen that justifies measuring frequency of all solid wastes?		☐ **YES**	☐ **NO**
Was the solid waste measurement frequency adequate?		☐ **YES**	☐ **NO**
Were incidents fully explained through reports?		☐ **YES**	☐ **NO**
Were there any signs, visually, that suggest solid wastes were not being handled responsibly?		☐ **YES**	☐ **NO**
Was there appropriate storage and handling of solid wastes?		☐ **YES**	☐ **NO**
Was the solid waste management system working?		☐ **YES**	☐ **NO**
Was there any indication that continuous reduction of solid waste quantities was taking place in the facility?		☐ **YES**	☐ **NO**
Can the SLF element be earned or not?		☐ **YES**	☐ **NO**