INTERNATIONAL UNION OF LEATHER TECHNOLOGISTS AND CHEMISTS SOCIETIES

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IUE 12 - Guidelines for Minimum Environmental Standards

Introduction

In view of ever increasing social pressures, no tanner can afford to be unfamiliar with the main issues and principles of environmental protection pertaining to tannery operations. Among these, preventing pollution and promoting cleaner leather processing remain a priority. Yet, despite all preventive measures, there is still an amount of the pollution load to be dealt with by the end-of-pipe methods. The purpose of this document is to give tanners or tannery managers guidelines for the Minimum Acceptable Environmental Standards (MAES).

This IUE document is based on the environmental performances, not on the means required to achieve these performances. Therefore, tanners retain the freedom to choose which options they implement among prevention, clean technologies, end-of-pipe treatment, new and innovative solutions.

The objective is to protect the environment and nearby residents on a short term approach, so the guidelines include both on-site and off-site (waste and waste water) treatments.

This document does not refer to any national regulations and therefore the guidelines can be used in any country. Obviously this means that for some points the guidelines are less restrictive than some national regulations.

Scope

Greenhouse Effect Emissions are excluded from this reference document because policies around the globe are widely different from one country to another. Furthermore, Leather Carbon Footprint methodologies are still to reach an agreed consensus, so Carbon Footprint of the tannery is outside the scope of this guideline. However, there are basic good housekeeping practices improving energy efficiency that can be adopted showing commitment to good environmental practices with a knock-on effect for carbon emissions.

Guidelines for Minimum Environmental Standards

The basic environmental parameters to be checked are listed in the tables hereafter.

1. General requirements

General Parameters	Guidelines for Minimum Environmental Standards
Environmental Management	
Environmental Policy	The tannery should have a documented company environmental policy available for any stakeholder.
Supply Chain	
Visibility throughout the supply chain from raw to finish	A tanner should be able to provide identification of the source of the material supplied - especially for intermediate steps such as pickled hides and skins, wet-blue and crust leather. For example, documented identification of materials received at the tannery.
Water Consumption	
Water consumption	Water consumption has to be monitored and reported relative to the quantity of hides and skins processed. Data required: volume (m^3) per year, tons of hides and/or area (m^2) of leather. **No threshold required for this parameter. It is a monitoring requirement.**

2. Waste water

Parameters for Waste Water	Minimum for Minimum Environmental Standards	
Waste Water Management and Monitoring	**Release into a Common or Municipal Effluent Treatment Plant (Sewer)**	**Release into Surface Water (from a CETP or ETP)**
Drainage systems	Requirement is to have a piping and Instrumentation diagram (PID) that describes the drainage systems of the tannery specifying the existing segregation systems (i.e., sulfides, chromium, processing (float) water, rinsing water and other waste water).	
Waste water discharge monitoring	Yes	Yes (Water volume, Cr, sulfides, COD, suspended solids, nitrogen or ammonia, pH)
Total chromium	The quantity of chromium used in the process should be optimized. Removal of excess chromium at the source is preferred to treatment via a CETP. (See IUE-1)	2 mg/l
Sludge	Sludge containing more than 2500 mg/kg dry matter should be managed in a way not to release any chromium into the environment.	
Sulphides (See IUE 8)	When unhairing with sodium sulphide, a treatment system based on oxidation is required, preferably installed adjacent to the beamhouse area. It might also be anywhere in the tannery site or within the CETP. It is however better when minimised at the source. (See IUE 8)	1 mg/l
Suspend Solids management	1500 mg/l	100 mg/l
Chemical Oxygen Demand (COD)	-	300 mg/l
Nitrogen (TKN or Ammonia)	-	50 mg/l for TKN or 35 mg/l for ammonia
pH	5.5 to 9.5 (Except for some municipal waste water treatment plants that welcome tannery effluents to balance the pH of other inputs.)	6 to 9
Total Dissolved Solids (TDS) (See IUE 1 and IUE 3)	TDS should be minimised at source.	Depending on local conditions.

3. Solid waste

Parameters for Solid Waste	Guidelines for Minimum Environmental Standards
Waste sorting / separation (See IUE 2)	Chromium containing waste and waste free of chromium should be sorted and managed separately.
Tanned waste (shavings, wet-blue splits, etc) (See IUE 2)	Chromium containing waste should be managed in a way that chromium is not released into the environment.
Non-hazardous empty barrels and containers (See IUE 2)	The tannery should follow a non-hazardous waste procedure for non-hazardous empty barrels and containers.
Hazardous waste management	The tannery should follow a hazardous waste procedure. Hazardous waste should be treated/disposed of in a dedicated plant for hazardous waste.

4. Chemical storage

Parameters for Chemical Storage	Guidelines for Minimum Environmental Standards
Flammable chemical storage	Flammable chemicals should be stored in a dedicated ventilated zone, retained in a secured and isolated area, labeled and protected from possible sources of ignition.
Non-flammable chemical storage	Hazardous chemicals (and hazardous waste) shall be retained in a secure, isolated area and labeled.
Safety Data Sheets (SDS) and labeling (See IUE 11)	All Safety Data Sheets (SDS) should be available where the chemical is stored. Chemicals should be handled and used according to the SDS. Compatibity of chemicals have to be taken into account when stored in the same area.

5. VOC emissions

Parameters for VOC emissions	Guidelines for Minimum Environmental Standards
Solvent inventory (See IUE 8)	VOC consumption should be monitored (and regularly updated) using data provided by chemical suppliers (when solvents are used).
Extraction for equipment using solvents	All equipements using solvents, such as finishing spray booths, have to be equipped with adequate extraction.
VOC ratio	VOC emissions should be quantified and reported relative to the surface area of leather produced (grams of VOCs per square metre of leather produced). No threshold required for this parameter. It is a monitoring requirement.

6. Energy

Parameters for Energy	Guidelines for Minimum Environmental Standards
Non-renewable energy monitoring	Non-renewable energy should be monitored and reported relative to the quantity of hides, skins or leather. No threshold required for this parameter. It is a monitoring requirement.

7. Soil and ground water protection

Parameters for Soil and Ground Water Protection	Guidelines for Minimum Environmental Standards
Seepage	Measurements should be taken to check that no seepage of process waters or chemical contaminates the soil.

8. Odour

Parameters for Odour	Guidelines for Minimum Environmental Standards
H_2S gas (See IUE 8)	H_2S in the workplace: a maximum of 10 ppm is not to be exceeded.
Odours	All measures should be taken to avoid odours from putrefaction, sulphides, VOCs and the waste water treatment plant.