Measures
On the basis of a careful consideration of the odour nuisance situation in the whole sector of industry, of the technical options and the business economics consequences, a standard set of measures was decided on. These measures indicate, for household organic waste composting operators, the current Best Available Techniques for limiting odour nuisance.

1 The composting must be carried out under closed conditions.
2 The waste gases produced by the composting proper and the extracted air from the pre-processing and the post-processing of crude compost are treated in a system using biofilters. The maximum allowable emission load must be determined exactly by the competent authorising body. The efficiency of the filter is at least 90% at nominal load. Other technologies with a comparable efficiency of removing odours may also be used.
3 The household organic waste must be received in an enclosed area. The air in the reception hall must be extracted and directed through an installation capable of effectively removing odours.
4 The post-processing of the crude compost must take place under contained conditions.
5 The percolated water and the contaminated process water must be stored in such a way that no odour emissions take place.
6 Products may only leave the contained situation for maturing if the temperature of the heaps is below 50°, to be determined using the method according to Rottegrad quoted in the KIWA directive (K256/02).

Measures
Closed conditions in this context means that processing is done in an area from which the air is subject to mechanical exhaustion. Contained conditions will also exist in the event of composting in open cells such that between the composting material and the atmosphere a barrier has been installed which is impermeable to odours and where air is introduced into the compost by extracting it from inside the heap.
The air used in the various processing stages is treated at all facilities for producing compost with the aid of biologically active filters. Occasionally pre-treatment is carried out using a plain water or chemical based scrubber. A new and promising pre-treatment technology which is capable of removing both ammonia and odours effectively is with so-called bio-trickling filters.
Depending on the design, the concentrations introduced into the system and the level of maintenance, values between 90 and 99% can be achieved in practice. The biologically active filter is operated at maximum efficiency by stringent control of the temperature and the moisture content. The details for monitoring the temperature, the moisture content, the acidity and the effectiveness of an optional pre-cleaning technology are laid down in a quality system developed by the operator, and which is used as a reference that can be used by the competent authorities in order to verify whether the operator is meeting his obligations. The quality system documents quote the design performance, the frequency of verifications and the tolerances for various process parameters.

Z1 Surface treatment of metals with nitric acid

These regulations were included in the NeR in May 1992. Unless specific requirements for emissions are explicitly mentioned in the following, the general provisions of the NeR will apply.

Continuously operating etching plants
Nitric oxides
The emission concentration of nitric oxides in the waste gas may not exceed 500 mg/m_o^3.

Z2 Production of carbon anodes

These regulations were cancelled in September 2004, following the inclusion of the BREFs in the NeR.

Z3 Leather industry

These regulations were included in the NeR in January 1996. Unless specific requirements for emissions are explicitly mentioned in the following, the general provisions of the NeR will apply.

Scope
These regulations are applicable to operators that produce leather.

Sources
Odour emissions from leather manufacturing operations ensue from two main activities which can occur separately or combined, namely the processing of skins or hides in tanneries (here the stock goes through a number of processing stages to obtain chrome tanned leather) and the manufacture of patent leather (wet and dry finishing).
For these sources odour emission factors are available. Please refer to the report '*Bedrijfstakstudie Geur van de lederindustrie, geuremissiekentallen en geurreducerende maatregelen* (Industry wide investigation into odours produced by the leather industry, key odour emission figures and odour abatement measures)', PRA report number FNLE94A.5, July 1995, for details.

Dispersion
The emissions from finishing operators generally originate in a channelled manner from spraying booths. The emissions from tanneries are mainly fugitive.

Nuisance
No generally accepted odour concentration level has been established at which nuisance is experienced. Assessment whether nuisance occurs is done with the aid of the 'system used for classifying nuisance caused by odours' (§3.6).

Measures

Possible measures to be taken are subdivided into two categories.

1 Standard measures, for general application and to be used under all conditions. Some of the measures can be used as a default, but conditions will apply. These measures are marked as 'optional'.
2 Extra measures, only to be used if considered necessary on the basis of the residual nuisance level.

The measures are indicated in table 1.

Table 1 Odour nuisance abatement measures

Measure	Standard, optional or extra	Details
Tanneries:		
Good housekeeping	standard	made explicit in permit requirements (point requiring special attention: storage of fleshing offal)
Use of sulphide oxidising agents in de-liming	standard	
Use of solvent-free degreasing agents	standard	
Separating or keeping separated acid and sulphide containing waste flows	standard	separate sewer system is to be preferred
Processing of fresh skins or hides	optional	cannot always be controlled by the operator
Hair preserving liming, reduced sulphur burden	optional	currently only possible for thin kinds of leather
Covering over of physical and chemical waste water treatment	standard	
Enclosed storage of sewage sludge	standard	
Covering over of the unit where the sulphide containing waste water is processed	standard	the equalisation tank if sulphide is bound by conversion to FeS, the the aeration tank if sulphide is being oxidised to sulphate
Central ventilation system on the tannery, emission of the ventilation air via a stack with a height of at least 2.5 times the height of the building	extra	exclusively on the basis of calculations using the applicable National model the height can be established
Finishing operations:		
Good housekeeping	standard	made explicit in permit requirements (point requiring special attention: timely replacement of water in wet scrubber /filter)
A switch to (less odour producing) water-based varnishes	optional	if feasible from a production (technical) point of view (exception: e.g. leather used in the car manufacturing industry)
Use of HVLP spray guns fitted with return line	optional	if feasible from a production (technical) point of view
Vertical emission of waste gases from the spraying booths in the case of processing varnishes	standard	Exhaust velocity off-gas at least 5 m/s; preferably 10–15 m/s; free unobstructed outflow;
Emission via a stack of at least 2.5 times the height of the building where varnish is used based on organic solvents	optional	Exhaust velocity of off-gas preferably 10–15 m/s; unobstructed outflow; height determination on the basis of standard calculations using the applicable National model.

Measures

In the Netherlands there are approximately four operators with a tannery producing wet blue, and less than 20 operators involved in finishing operations. The problems caused by odours are different for the two kinds of operations. In tanneries skins or hides are subjected to basic processing. After the skins or hides have been limed, de-haired and tanned they enter the final phase of finishing. For both kinds of operators an absolute precondition is observance of good housekeeping practices.

By this is meant: cleanliness generally, but due to the craft-like nature of the processes involved, also a keen eye for details to prevent situations which can cause trouble due to human error. One of the things that need to be remembered at all times is to keep windows and doors of areas in which sources of odours are stored closed. The potential measures are worked out in detail in the report on the industry wide investigation.

Prevention of release of odours is an important measure. Where odours are caused by sulphur compounds being released it is important to keep a tight control on the acidity of the various flows. The implementation of separate sewer systems constitutes a major operation for businesses that were established long ago. For new operators this is usually less of a problem.

The measure as regards the processing of fresh skins or hides is also optional. A fresh skin has not undergone any prior treatment, which means that less chemicals are consumed in the entire processing. Some tanners process parts of skins, for example necks, croupons or dossets. These must be collected and cut to specification by wholesalers in skins, and for this reason they can only be obtained in salted form. Operators who carry out tanning work on a subcontract basis are not free to decide which skins must be processed either.

The transition to water-based varnishes is almost completed in the case of leather finishing operators. For certain finished products, however, there is still no alternative to solvent containing varnishes.

Stack

Increasing the height of an emission point for discharging odours generally has a favourable effect on the odour levels perceived in the vicinity of the operation. At greater distances this effect is generally less pronounced. For this reason in situations where sensitive objects are found at distances of 200 metres and beyond it will have to be checked whether the odour concentration has been reduced sufficiently by relocating the discharge point to a stack.

Exceptions

If the competent authority is of the opinion that the remaining nuisance in a local situation is still unacceptable after the implementation of measures it is possible to make more stringent demands than can be achieved by the set of standard abatement measures and to demand that emission abatement measures are taken. In doing so attention must be given to the financial efforts required of the operator to ensure that they stand in a reasonable proportion to the reduction of the odour nuisance envisaged.