C1 Woodworking, Production of wood fibre and particleboard; Sawmills

These regulations were included in the NeR in May 1992 and amended in april 2003.
Unless specific requirements for emissions are explicitly mentioned in the following, the general provisions of the NeR will apply.

Wood dust
The emission concentration of wood dust in the extracted air originating from wood sanding, planing or sawing operations may not exceed 10 mg/m_o^3.

Requirement for the emission of particulates
Given the carcinogenic properties of hard wood and the suspected carcinogenic properties of soft wood, an emission standard of 10 mg/m^3 must be complied with at a minimum.

Organic substances
Emissions of organic substances from chip dryers must be limited as much as possible, for example, by keeping the working temperatures within controlled limits.

C2 Coarse ceramics industry

These regulations were included in the NeR in June 1994. Unless specific requirements for emissions are explicitly mentioned in the following, the general provisions of the NeR will apply.

The emission values are based on a content of oxygen in the waste gas of 18% by volume.

New installations
New installations for the production of coarse ceramic materials made of clay must comply with the general requirements of the NeR.

Existing Installations
For existing Installations the following requirements apply.

Fluoride
By employing measures in accordance with Best Available Technique it is possible to satisfy the general concentration requirements of the NeR for fluoride (5 mg/m_o^3, calculated as HF).
These measures must be implemented for all facilities producing an (untreated) emission mass flow of more than $8.4*10^3$ kg fluoride, calculated as HF, on an annual basis; this is in contrast to the provisions of §3.2.4.
In the case of facilities with an emission on an annual basis of less than $8.4*10^3$ kg, but where the emission can fluctuate substantially, causing the amount of fluoride emission to amount to more than 1.5 kg fluoride (calculated as HF) per hour on occasion, arrangements must be made in order to allow the emission requirement of 5 mg/m_o^3 maximum to be satisfied at all times.

Analysis of untreated mass flow
An analysis of the untreated mass flow must be carried out and the results compared with the emission data quoted in the report on the state of affairs regarding emissions by the Dutch coarse ceramics industry (TCKI, 1992/93). This information will have to be submitted when applying for a permit.

Nitric oxides, oxides of sulphur
For oxides of sulphur and nitric oxides it has been found that in general it is possible to satisfy the general requirements of the NeR without emission abatement facilities (§3.2.4.).

Nitric oxides, oxides of sulphur
Factories which use raw materials with a high sulphur content can only satisfy the general requirements with the aid of emission abatement technologies.

The trade organisations for the coarse ceramics industry will research the possibility of limiting further the emissions of nitric oxides by employing new or improved burner technologies, and at the same time carry out research into the possibilities for saving energy.

Compliance deadlines
The implementation of emission abatement measures must be done wherever possible concurrently with modifications or other work to the furnaces. The refitting of existing installations to satisfy the current standards must be completed by the year 2000.

C3 Production of mineral fibre

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

C4 Glass production

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

C5 Asphalt mixing plants

These regulations were included in the NeR in January 1996 and amended in April 2003.
Unless specific requirements for emissions are explicitly mentioned in the following, the general provisions of the NeR will apply.

The emission standards are based on an oxygen content of 17% (by volume).

Polycyclic aromatic hydrocarbons (PAHs)
In the recycling of asphalt using a parallel drum the waste gases from the drum must be recycled to the burner of the main drum or incinerated in some other way.

> **Tar-containing asphalt**
> Tar-containing asphalt may be incinerated if care is taken to destroy the PAHs in an installation specifically suited for that purpose, such as, for example, a Torbed reactor.

Particulates
Existing fabric filters must meet a minimum emission requirement of 30 mg/m_o^3.
New particulate cleaning equipment must comply with the general standards of the NeR.

Lignite
Existing Installations which within the framework of the diversification policy have been converted to lignite firing must meet the emission requirements for NO_x and SO_2 to a limited extent.
In the case of new installations using lignite as a fuel the emissions of oxides of sulphur and nitrogen must be reduced to levels similar to those from gas or oil fired asphalt mixing plants: 50–75 mg/m_o^3.

Odour

Sources of odour
Sources of odour emissions in the asphalt manufacturing process are:
- the heated tanks of bitumen;
- the drum containing the mineral charge;
- the mixer;
- the finished product conveyor and the discharge points;
- the emissions resulting from loading and unloading the finished product.

Specific emissions in the case of recycling asphalt are important:
- the parallel drum, or;
- the mixing drum (in the case of drum-based mixing installations).

The odour emissions from installations for high temperature recycling of asphalt are considerably higher than those from installations for making new asphalt.

The emissions from the mineral charge drum and the parallel drum are dispersed via a stack. In the case of installations that have not been fully enclosed the emissions from the mixer, the bitumen tanks and loading and unloading operations are released at ground level, between the buildings of the installation.

Odour abatement measures
No general odour concentration level has been established above which nuisance is experienced.

The following measures constitute standard provisions for both new and existing installations:
- Limiting emissions resulting from loading and unloading and continuous evaporation from the bitumen tanks by employing water locks. A vapour return system for emissions resulting from loading and unloading is another possibility, which results in comparable emission reductions.
- It must be possible to cover vehicles used on a regular basis for transporting finished product quickly and effectively in order to keep the period during which emissions occur as short as possible.

For new installations the following measures are also typical:
- A stack which is at least 20 metres high for installations where new asphalt is prepared.
- A stack which is at least 30 metres high for installations where old asphalt is recycled at high temperature.

Whenever nuisance is established in the application of the system used for classifying nuisance, extra measures can be demanded in order to limit the nuisance as much as possible, which may consist of, for both existing and new installations:
- Increasing the height of the emission point to the level required for new installations.

In the case of nuisance in the direct vicinity of the installation it is especially important to limit fugitive, short-lasting emissions. Potential measures are:
- placing an enclosure around the mixer, the discharge point of the mixer into the collecting vessel, the conveyor for finished product and the discharge point of the collecting vessel into the silo for finished product, and dispersing the extracted vapours through the stack;
- adapting the loading bay for transport vehicles architecturally in such a way that the emissions released can be extracted and vented via an elevated emission point.

Where enclosures are built around (new) installations because of their location the fugitive sources will also normally be vented via the stack.

Sources
Research has shown that the mineral charge drum is the greatest source of odour emissions in the production of new asphalt, and the parallel drum in the case of producing high temperature recycled asphalt (report: 'Evaluation of odour emissions by asphalt mixing plants', Intronplan, 94078b, 1994, available from VBW Asphalt of Breukelen, Netherlands; in Dutch only). The scale of odour emissions in the case of recycling asphalt is about 10 times greater than in the case of producing new asphalt.
The emissions resulting from mixing and loading and unloading operations of asphalt are of the same order, but they only occur for a short time per hour.
Where reference is made to recycling asphalt, recycling at a high temperature is meant. Cold recycling, which is done by adding approximately 10% old asphalt at ambient temperature, does not cause additional emissions as compared to the production of new asphalt.

Measures
Information requested of licensing authorities that deal with asphalt mixing plants showed that complaints about this type of operation are relatively rare. The scale of the odour nuisance problem is considered limited.
Due to the low incidence of complaint situations it was not possible to establish a distance within which nuisance is generally felt to occur on the basis of odour concentration, type of installation, or production scale. It was therefore decided to define a standard set of measures of which it may be expected that it will limit odour emissions sufficiently in nearly all cases. In situations where nuisance is still being experienced, for example due to an unfortunate siting relative to a residential area, a number of extra measures is possible. Whether it will be necessary to demand these measures must be decided using the general approach for determining what constitutes an acceptable nuisance level (see §3.6).
The regulation does not explicitly require measures for the major source of odour emissions, the parallel drum or the mixing drum. Due to the continuous nature of this source and because of the dispersion via the main stack at sufficient height, the nuisance resulting from this emission is limited. Adaptations of the production process aimed at avoiding direct contact with open flames and at overheating of the mixture are already commonplace, as these situations adversely affect the quality of the asphalt being produced.

Standard measures
The standard measures consist of limiting in particular the emissions originating from the loading and unloading of the bitumen tanks by employing water locks or by using a vapour return system. Both measures are capable of reducing to effectively nil the emissions resulting from loading and unloading bitumen.

In addition, the requirement is included that the transport of finished product to the location where it will be used must be done using lorries equipped with a tipping body that can be covered (quickly). Most will be fitted with doors that can be closed hydraulically or mechanically. Rapid covering of the tipping body limits the duration of emissions due to these operations, and thus the nuisance to especially the direct vicinity. This is a typical feature of the regular transport vehicles, but it is possible in the case of transport of very small quantities of asphalt that vehicles are used that lack such features.
The cost level of the standard measures is considered acceptable.

Extra measures
The extra measures consist of increasing the height of the stack and avoiding fugitive dispersion of emissions from the remaining sources. The last-mentioned measure means that those parts of the installation are enclosed or fitted with extraction at the source, whereupon the stream of air can be vented through the stack or treated using other technologies. This is a drastic and costly measure in the case of existing installations. Where installations are already being enclosed for other reasons (soundproofing), installing facilities for extraction of the sources mentioned can be included (and therefore demanded) easily.

Zoning
In the regulations there is no provision requiring that new installations must be enclosed by default. At certain locations this will be required nonetheless, mainly for reasons of limiting noise pollution. The zoning requirements for asphalt processing facilities are based mainly on considerations of limiting noise pollution, which means that they will typically be sited at distances of 200 to 500 metres from residential areas. This means that a separate rule with a view to expected odour nuisance is unnecessary.

D1a Pig iron production; Iron ore sintering

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

D1b Pig iron production; Iron ore pelletising

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