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.

D1c Pig iron production; Blast furnaces

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

D1d Production of oxygen blown steel

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

D2 Production of primary aluminium

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

D3 Iron and steel foundries and smelting plants

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.

Foundries

Particulates

The general standards of the NeR apply to particulate emissions.

Amines

The waste gases which are produced in core fabrication, core-sand mixing, recycling, drying and hardening must be collected as much as possible or be exhausted at the source, and then submitted to treatment by cleaning equipment.

The emission concentration of amines may not exceed 5.0 mg/m_o^3.

Smelting furnaces

Dioxins

Feedstocks for the smelting furnaces must contain the least possible content in chlorine compounds in order to prevent the formation of dioxins.

Particulates

New smelting furnaces and newly installed dust separation devices must comply with the general standards for particulates.*

* The feasibility of this standard is still the subject of consultations and research.

E1 Coking plants

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

E2 Production of chlorine

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

E3 PVC-production, suspension polymerisation

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.

Vinyl chloride

The emission of vinyl chloride must be kept as low as possible.

Before the reactor may be opened it must be flushed at least twice (for example with nitrogen), and the flushing gases must be redirected to a suitable recovery plant for vinyl chloride.

The gases and vapours from the water stripper must be discharged to a recovery plant or to a boiler or a dedicated incineration device.

In the case of a mass flow per source below the limit mass flow of 25g/h a daily average emission concentration level of 30 mg/m_o^3 applies if an active carbon filter is used.

Where incineration is practised, the general standard applies.

The PVC powder, on leaving the afterdrier, may not contain vinyl chloride levels in excess of 2.0 mg/kg.

The emission of vinyl chloride from the siphon shaped water locks of the gas holders should be kept to minimum possible levels.

> As per July 2000 there are legal requirements in place for the production of PVC using the suspension polymerisation process (*Staatscourant* 2000, no. 136).