3.8 Remaining special regulations

3.8.1 Emission of particulates during the processing, preparation, transport, loading and unloading as well as during storage of drift sensitive materials

Standards to reduce particulate emissions must be imposed on installations in which drift sensitive materials are pretreated, produced, transported, loaded, unloaded and/or stored.
A distinction must be made here between fugitive and directional dust emissions. Directional emissions are also considered to include emissions from ventilation exhaust points, etc. Directional emissions may be regarded as point sources and must comply with the general emission standards set down in §3.2.

In the case of fugitive emissions, no visual dust dispersion may occur at the source.

The following classification, based on the susceptibility of a material to be dispersed and the possibility of dealing with the problem by wetting, is used for non-reactive products:
s1 highly drift sensitive, not wettable;
s2 highly drift sensitive, wettable;
s3 moderately drift sensitive, not wettable;
s4 moderately drift sensitive, wettable;
s5 not or very slightly drift sensitive.

The storage and transhipment of toxic and/or reactive products is disregarded here because when these products are loaded for transport or storage in bulk they are handled in closed systems or in packaged form and not as loose material.

Annex 4.6 to the NeR contains the classification used for most of the commonly occurring bulk goods. This list should not be regarded as complete and final, as it may be supplemented or amended.

The sections which follow give guidelines in the form of measures to limit fugitive emissions resulting from operations involving drift sensitive materials. These guidelines tie in with the classification into different dispersiveness classes used for these goods.
If, despite the measures taken, dust dispersion which is obvious to the naked eye occurs for some length of time in the immediate vicinity of the source, for example, due to certain weather conditions, the above-mentioned operations must be temporarily suspended.

Transport and storage of drift sensitive materials containing special components
The transport or storage of drift sensitive materials containing compounds subject to compulsory minimisation (carcinogens) or containing components from classes sA.1, sA.2 or O.1 must be in package form if possible or, if packaging is not possible, the materials must be treated as belonging to dispersiveness class s1 (or possibly s2).

The above generally does not apply if the concentration of the special components in the drift sensitive materials in a fraction separated from these materials by using sieves with a maximum mesh of 5 mm does not exceed the following values:
- components from classes C.1, sA.1 and O.1: 50 mg/kg dry matter;
- components from classes C.2, sA.2: 500 mg/kg dry matter;
- components from class C.3: 5000 mg/kg dry matter.

Pre-treatment and preparation of drift sensitive materials
Fugitive dust emissions due to pre-treatment or preparation of dispersive materials should be prevented by:
- closing machines and equipment completely dust proof wherever possible;
- fitting in particular supply, removal and discharge points with exhaust facilities at the source and purifying the extracted air in a dust-removing filter installation if necessary;
- wetting materials which are wettable.

Pre-treatment or preparation
Pre-treatment or preparation means activities such as breaking, grinding, screening, mixing, agglomeration, granulation, sintering, extrusion, calendering, pressing, pelletising, tablet forming, etc.

In order to control dust dispersion resulting from the mixing of drift sensitive materials, the following is required:
- mixing materials belonging to dispersiveness classes s1 and s3 is only permitted in an enclosed area, kept under reduced pressure, and the extracted air must be purified.
- heaps of materials belonging to dispersiveness classes s2 and s4 in the open air may only be piled up or dug off if the materials are wetted.

- a heap of materials may only be piled up if the slope of the heap is not greater than the natural slope, the last layer deposited consists of the least dispersive component of the mixture and the layer is kept sufficiently wet.

Storage of drift sensitive materials
In order to control dust dispersion during storage due to the effects of wind, materials belonging to classes s1 and s3 (and possibly s2) must be stored in enclosed areas (silos, sheds or covered areas). At times when no deliveries or collections take place the storage area must be securely closed off.
While the storage area is being filled with materials from class s1 (and possibly s2), the discharge point and hence the area itself must be provided with suction facilities and the air extracted must be purified.

Materials belonging to dispersiveness classes s4 and s5 (and possibly s2) may be stored outdoors provided the tip is kept wet in order to prevent dust dispersion. In the case of small-scale storage for short periods in the open air, the material may be covered with a tarpaulin or the like. When materials of classes s4 and s5 are stored for longer periods in the open air, the tip should be sprayed as often as necessary with a stabilising or binding agent.

Spontaneous heating in coal tips must be prevented, for example, by building up the tip layer by layer and compacting them by rolling.

Dust emissions as a result of outdoor storage of dispersive materials can also be limited by:
- covering over;
- erecting wind breaks;
- orienting the longitudinal axis of the storage facility parallel to the main wind direction;
- keeping unoccupied storage sites wet and/or clean.

Transport and loading and unloading of drift sensitive materials
Generally speaking, dust dispersion during the transport, loading and unloading of drift sensitive materials must be prevented by:
- limiting the height of discharge, particularly in the open air, to less than one metre and, as far as possible, ensuring that this height is maintained by automatic means;
- dust nuisance due to loading and unloading in the open air must be prevented by suspending the transhipment activities, depending on the local situation and wind direction, if, considering the dispersiveness class, the wind speed exceeds the following values:
  - classes s1 and s2 — 8 m/s, wind force 4/ moderate breeze,
  - class s3 — 14 m/s, wind force 6/ strong breeze,
  - classes s4 and s5 — 20 m/s, wind force 8/ fresh gale;
- preventing dust dispersion of wettable materials in dispersiveness classes s2, s4 and s5 by wetting the materials sufficiently prior to operations, where possible;
- controlling dust emissions from wettable materials in dispersiveness classes s2, s4 and s5 during loading and unloading by means of a mist curtain.

Continuous mechanical transport
In order to limit fugitive dust emission resulting from continuous mechanical transport the following is required:
- non-wettable materials from dispersiveness classes s1 and s3 must be transported under contained conditions, and the intake and discharge side of the conveyor must be enclosed; this enclosure must be subject to continuous suction and the extracted dust must as much as possible be recycled into the main product flow;
- wettable materials transported in an open conveyor system must be wetted in such a way that dispersion is prevented;
- the intake and discharge sides of the conveyor must be provided with barriers in the form of wind reduction screens or sprinklers;
- open conveyor systems in the open air must be protected from the effects of wind by means of longitudinal screens, transverse screens or barrel vault roofing.

Continuous mechanical transport
What is meant here is conveyor belts, screw or chain conveyors, etc.

Hoppers
In order to limit fugitive dust emission in the loading of products by hoppers the following is required:
- where highly drift sensitive materials belonging to dispersiveness classes s1 and s2 are being (un)loaded, hoppers must be designed in such a way that after the grab has opened over the hopper no dust dispersion that is visible for more than 1 metre beyond the edge of the hopper can occur;
- hoppers must be fitted with a (dust) extraction system in the case of transport of substances or materials from classes s1 or s2;
- wettable materials (classes s2 and s4) should, where possible, be wetted with the aid of an effective water sprinkling installation;
- for the loading of materials belonging to dispersiveness classes s3, s4 and s5, hoppers should be fitted with effective wind reduction screens.

The outlet of a hopper may not give rise to dust dispersion. The capacities of individual parts of the loading assembly must match up with one another. A factor to be taken into account here is the maximum filling level of the hopper.

The maximum filling levels for different types of material are as follows:

- classes s1 and s2 75%
- classes s3 and s4 85%
- class s5 95%

Grabs

In order to limit dust emission due to the loading and unloading of drift sensitive materials with the aid of grabs the following is required:

- loading and unloading of materials belonging to the dispersiveness classes s1, s2, s3 and possibly s4 must take place with grabs kept in good repair and covered at the top;
- dust dispersion in the area surrounding the discharge location must be prevented during the opening of the grab;
- the grab may only be opened during unloading after it has descended below the edge of the hopper, or, alternatively, below the edge of the wind screens.

Loading onto lighters

Dust dispersion during the loading (and unloading) of lighters should, except where materials belonging to class s5 are concerned, be controlled as follows:

- in the case of materials belonging to the dispersiveness classes s1, s2, s3 and s4 the lighter loading equipment must be fitted with a discharge pipe which almost reaches down onto the bottom of the cargo space or onto the material already loaded;
- baffles or similar devices should be fitted inside the discharge pipe in order to reduce the speed of descent of the material being loaded;
- the discharge pipe should be subjected to air evacuation where highly dispersive materials are concerned;
- where a discharge pipe of 'fishmouth' design is used, air must be evacuated from the discharge pipe; the quantity of air evacuated must be greater than that displaced by the material loaded;
- during discharge the grabs should only be opened once they have descended sufficiently far below the rim of the cargo space.

Pneumatic elevators

Dust dispersion due to loading and discharging by pneumatic elevators can be controlled by:

- fully enclosing weighing bunkers and discharge areas;
- regularly removing dust deposited in the overspill areas;
- fitting the discharge shoe with exhaust facilities.

Traffic

Dust dispersion due to traffic to and from the storage site should be controlled by:

- minimising the number of traffic movements on the site;
- ensuring that materials are moved at the site wherever possible by continuous mechanical or pneumatic transport systems;
- restricting motor traffic to metalled roads which are regularly cleaned;
- installing barriers between roads and unmetalled surfaces;
- limiting the speeds of vehicles at the site;
- keeping the roads at the site wet by spraying.

Dust dispersion by vehicles beyond the storage site must be prevented by hosing the vehicles down and by cleaning the tyres before the vehicles are allowed to leave the storage site, and by utilising the loading floor, partitioning it or covering it in such a way, that dust dispersion through spillage onto roads becomes impossible.