

<p><b>Safety regulation 30</b></p> <p><b>Unconducted dust emissions due to dusting</b></p>	
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## 1 PURPOSE

Describe the measures taken by Nyrstar Balen / Pelt to keep the dust emissions from the storage of pollinating substances and from installations where pollinating substances are transported or treated as low as possible in order to comply with environmental legislation (VLAREM II – section 4.4.7 Control of non-conductive dust emissions).

## 2 SCOPE

The control measures of unguided dust emissions at the Nyrstar Site (Balen / Pelt) for activities that have a potential impact on dust emissions carried out by both own staff and contractors.

Operators (both internal and external) who use means of transport and transshipment are made aware of this safety regulation.

## 3 DEFINITIONS

**Dusting substances:** unpackaged substances that may result in non-conductive (diffuse) dust emissions during transport, processing, manufacture or storage.

**Dusting material storage capacity:** the area of the site reserved for the temporary storage of dusting materials (excluding the area of closed storage areas).

**Transshipment of pollinating substances:** the quantities of pollinating substances supplied or removed to or from the site of the establishment, whichever is greater, including the direct transshipment of substances between two means of transport. Substances of pollination category SC3 may be charged for 10%.

Pollinating substances are classified into 3 pollinating categories based on the sensitivity to pollination and the possibility of preventing atomization (whether or not by wetting):

- SC1: Sensitive to dust, not wettable (roasting, zinc powder, quicklime, etc.)
- SC2: Dust-sensitive, well wettable (Cu cements, Co cements, BLP, soil, ...)
- SC3: Hardly sensitive to dust (sulphur residue, HgSe, etc.)

## 4 REGISTER OF POLLINATING SUBSTANCES

The Environment Department has drawn up a register of pollinating substances, taking into account the classification in pollinating categories according to VLII annex 4.4.7.1.: Classification of pollinated substances in pollinator-sensitive categories. This register can be consulted via the SHEQ page.

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## 5 WORK INSTRUCTIONS

### 5.1 Storage of dusting substances

Pollinating substances of pollinating category SC1 (e.g. ore) are stored in a closed storage area (silos and/or ore hall).

The number of openings in the ore hall is kept as low and as small as possible:

- non-functional openings are closed;
- Functional openings (doors, flaps,...) are kept closed as much as possible;
- the unloading of ores is done in an unloading pit in the ore hall; This discharge pit is located in an enclosed space that consists of a canopy / plastic flaps. As a result, the entrance and exit is closed during the unloading of ores.

Silos for the storage of pollinating substances of pollinating category SC1 and SC2 are equipped with a dust removal system; there is an emission limit value for dust of 5 mg/Nm<sup>3</sup> according to the special conditions included in the environmental permit. The relevant emission points are included in the control measurement program.

When storing pollinating substances of pollinating categories SC2 and SC3 in the open air (e.g. outside lodges near the ore square), dust dispersion is limited as much as possible by wetting the pollinating substances.

The following additional measures have also been taken on the Nystar site:

- the installation of a green screen in accordance with an approved green screen plan;
- collect the stored quantity in as few heaps as possible;
- choose the slope of the heaps in such a way that the top layer does not slip;
- Regular wet cleaning of weighing.

### 5.2 Transport, loading and unloading of dusting materials

Dust dispersion during transport, loading and unloading of dusting materials is prevented as much as possible by:

- limit the number of traffic activities on the site;
- make maximum use of fixed routes on paved roads;
- If possible, transport on the site is mechanical or pneumatic;
- limit the vehicle speed on the terrain to 30 km/h;
- watering the roads if there is a risk of dust spreading / wet cleaning regularly;
- regularly clean the places where storage and transshipment take place;
- wettable substances of pollinating category SC2;
- lorries with an open body filled with dust category SC1 or not sufficiently wettable substances of pollen category SC2 should be covered with a tarpaulin.

If grabs are used:

- use gripper shells that fit snugly;
- at the top, semi-closed or closed grippers can be used for substances of pollination category SC1 and SC2.

If conveyor belts are used:

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- Shield open conveyor belts from wind attack via longitudinal screens, cross screens or canopies
- switch to closed conveyor systems if dust emissions remain visually perceptible.
- conveyor belts for the transport of substances of pollination category SC1 are closed or covered.

Dust dispersion during the loading and unloading of dusting materials via dumping hoppers is prevented as much as possible:

- hopper for pollinating category SC1 and insufficiently wettable substances of pollinating category SC2 shall be provided with effective baffles or grids; This condition does not apply to loading and unloading at the ores square (see 5.1).
- fixed hoppers for dust category SC1 are equipped with a dust extraction system

Dust dispersion during loading and unloading of dusting materials via chutes, filling tubes, filling pipes and conveyor belts is prevented as much as possible by:

- fitting the loading and unloading equipment with brake pads or modifying their ends in order to limit the spread of dust;
- fitting new loading and unloading installations with brake pads or modifying the end of the installation to limit the spread of dust.

Dust dispersion during the loading and unloading of trucks and railway wagons with dusting materials is prevented as much as possible by providing the drop pits in which dusting materials are dumped with baffles.

### 5.3 Measures for the transfer of dusting substances

Depending on the means of transport and transfer used, the following measures apply:

#### 5.3.1 For grippers

- a. Hoisting, swinging and fouring:
  - grippers that are open at the top are not overloaded;
  - the scales of the grab are closed when hoisting, swinging and fouring;
  - when slewing, the speed is gradually increased to avoid sudden movements;
- b. open:
  - the gripper is opened slowly;
  - above a dump, the grab is opened as low as possible (< 1-2m);
  - Above a barge or other ship, the grab is only opened after it has descended into the hold of the barge or ship. In the vicinity of the bridge or wheelhouse, the grabs can only be lowered to the upper bridge or wheelhouse for safety reasons;
  - In the case of a hopper, the grab is not opened until it has sunk below the upper walls of the hopper;
  - after discharging, the gripper is left in the container for a sufficient period of time to ensure proper discharge;
- c. When servicing the gripper, care is taken to ensure that the gripper scales are well sealed;
- d. a maintenance plan for the grab is drawn up and implemented;

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**5.3.2 For Wheel Loaders**

- a. the use of wheel loaders in the open air is limited as much as possible;
- b. the loading scoop is not overloaded; there is no loading above the side walls;
- c. sudden movements with loaded wheel loaders are avoided;
- d. loaded wheel loaders travel at an adjusted speed;
- e. Wheel loaders should be placed as low as possible and at a maximum of 1 meter above the storage heap unloaded;
- f. the wheel loader is unloaded correctly;
- g. wheel loaders are cleaned in a timely manner so that the dust is removed;

**5.3.3 For continuous mechanical transport**

- a. the conveyor belt is tightened sufficiently to reduce vibrations;
- b. the speed of the conveyor belt is adjusted;
- c. the conveyor belt is not overloaded;
- d. the drive systems are placed as close to each other as possible;
- e. a sufficiently wide conveyor belt is used so that the predetermined capacity can be achieved at a limited speed;
- f. The tire is sag as concave as possible so that a sidewall is created that shields bulk goods;
- g. the conveyor belt in operation is kept clean; Possible cleaning methods be:
  - placing a scraper at the transfer point;
  - scraping with a rotary elevator that releases the product back onto the conveyor belt that is open at the top;
  - blowing it away with compressed air;
  - knocking off the conveyor belt;
  - extracting the dust under the belt;
  - turning the tire after the turning point;
  - placing a self-cleaning drip tray under the returning belt;

**5.3.4 For dump hoppers:**

- a. the operator lowers the gripper as low as possible into the hopper before opening it;
- b. In order to minimize the drop height of the property, we always work with almost completely filled hoppers. In doing so, the extraction points shall be taken into account if there is an extraction system is used;
- c. The following filling grades are indicative of the overloading of the hopper To prevent:
  - SC1: 75%;
  - SC2: 85%;
  - SC3: 95%;

**5.3.5 For chutes, filling pipes, filling pipes and conveyor belts**

- a. The end of the tube or pipe is lowered below the walls of the loading unit;
- b. The end of the tube or pipe is brought as low as possible against the loading unit and, if possible, into the property already deposited;

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**5.3.6 For loading and unloading trucks and railway wagons:**

- a. The loading and unloading activities of dusting materials take place in an enclosure such as that does not lead to additional transport movements. For substances of pollinating categories S1 and S2 that enclosure is sealed off as much as possible;
- b. overloading of the body is avoided;

**5.4 Maintenance of installations**

Installations that may cause dust emissions and dust treatment systems (e.g. bag filters) are checked preventively and periodically and properly maintained. If necessary, maintenance work is carried out to minimise dust emissions.

Dust filters are replaced in a timely manner to ensure proper operation. Information about maintenance for the technical installations is kept up to date [via PO plans and / SAP](#) and is kept available for inspection by the supervisory authority.