

- 31. BAT is to lower the hydrocarbon content of the sinter feed by appropriate selection and pretreatment of the recycled process residues.**

**In all cases, the oil content of the recycled process residues should be <0.5 % and the content of the sinter feed <0.1 %.**

### **Description**

The input of hydrocarbons can be minimised, especially by the reduction of the oil input. Oil enters the sinter feed mainly by addition of mill scale. The oil content of mill scales can vary significantly, depending on their origin.

Techniques to minimise oil input via dusts and mill scale include the following:

- limiting input of oil by segregating and then selecting only those dusts and mill scale with a low oil content
- the use of ‘good housekeeping’ techniques in the rolling mills can result in a substantial reduction in the contaminant oil content of mill scale
- de-oiling of mill scale by:
  - heating the mill scale to approximately 800 °C, the oil hydrocarbons are volatilised and clean mill scale is yielded; the volatilised hydrocarbons can be combusted.
  - extracting oil from the mill scale using a solvent.

### *Energy*

- 32. BAT is to reduce thermal energy consumption within sinter plants by using one or a combination of the following techniques:**

- I. recovering sensible heat from the sinter cooler waste gas
- II. recovering sensible heat, if feasible, from the sintering grate waste gas
- III. maximising the recirculation of waste gases to use sensible heat (**see BAT 23** for description and applicability).

### **Description**

Two kinds of potentially reusable waste energies are discharged from the sinter plants:

- the sensible heat from the waste gases from the sintering machines
- the sensible heat of the cooling air from the sinter cooler.

Partial waste gas recirculation is a special case of heat recovery from waste gases from sintering machines and is dealt with in BAT 23. The sensible heat is transferred directly back to the sinter bed by the hot recirculated gases. At the time of writing (2010), this is the only practical method of recovering heat from the waste gases.

The sensible heat in the hot air from the sinter cooler can be recovered by one or more of the following ways:

- steam generation in a waste heat boiler for use in the iron and steel works
- hot water generation for district heating
- preheating combustion air in the ignition hood of the sinter plant
- preheating the sinter raw mix
- use of the sinter cooler gases in a waste gas recirculation system.

### **Applicability**

At some plants, the existing configuration may make costs of heat recovery from the sinter waste gases or sinter cooler waste gas very high.

The recovery of heat from the waste gases by means of a heat exchanger would lead to unacceptable condensation and corrosion problems.