

Functional Description of the Extraction System for Shaping

This plant is a voluntary measure for the reduction of emissions into the environment. The capacity of the enterprise is the same before and after the measures are implemented, because only a filter system with heat recovery and air-conditioning is incorporated into the exhaust duct.

In the area of shaping, emissions from wolfram carbide cobalt powder occur during the machining process. Boehlerit's dedusting plants are currently operated with pressurised air. Due to the use of a high-pressure ventilator, the small filter systems can be operated without pressurised air. The high-pressure range is for suction directly at the workpieces. This is where the majority of the dust occurs, which can be used again in single varieties, thanks to the small filter systems.

The dust sucked away from the machine room is suctioned and filtered by a medium pressure plant. Speeds of approx. 25m/s are projected in the individual pipes, so that no impurities will remain in the ducts.

A hall exhaust ventilation system with a double air change is also built into the system. With a ceiling height of 5m and an area of 173.5m², a suction rate of 1,735m³/h is achieved.

Total flow rate: 5,500m³/h + 1,735m³/h + 8,765m³/h = 16,000m³/h

In the production area, a temperature of +22°C±2K is required in the hall. The air from the high pressure, medium pressure, and hall air suction is guided into a manifold outside. This air is discharged over the roofs as exhaust air, via a ventilation unit with heat recovery.

The ambient air is sucked in by means of a ventilation unit with a built-in filter. In order to ensure the most energy-efficient operation possible, the ambient air is guided via a plate heat exchanger and either pre-heated or cooled down by the exhaust air.

The air is then conditioned by means of a cooling battery and a heater battery in such a way that a hall temperature of +22°C±2K is achieved. The heated / cooled additional air is brought into the hall, in a low-impulse and draught-free way, by means of a textile supply hose.

Grant application B713736 – plant optimisation of dedusting plant for shaping

Name of the beneficiary:

Boehlerit GmbH & Co.KG, 8605 Kapfenberg, Austria

Project name:

Plant optimisation of the dedusting plant for shaping

Filing date:

22 September 2017

Planned completion date:

31 March 2019

Project objective:

Saving 150t of CO₂

Eligible costs:

EUR 116,799

Maximum overall production:

EUR 35,040

Financing:

The subsidy is 90% financed by funds from the IWB/EFRE regional programme.