

Project RDE – Reducing Diffuse Emissions

An innovative exhaust system, the largest environmental protection measure at Aurubis Hamburg since the 1980s

Responsible corporate governance and the highest sustainability standards are part of our identity. With a new, innovative exhaust system for Reducing Diffuse Emissions (RDE) at the Hamburg site, Aurubis is setting standards in environmentally friendly primary copper production, thus demonstrating a clear commitment to sustainability. Through extensive investments in the installation, Aurubis is now also reducing residual diffuse emissions from primary copper production that previously couldn't be captured from a technical standpoint. As a result, Aurubis is securing the future of the site, which is close to the city, as requirements for environmental protection increase. One component of RDE is the nearly emission-free processing of intermediate products from primary copper production in a new, closed building extension. This will also be connected to the exhaust system by 2022.

Exhaust system with state-of-the-art, ultra-fine filters

Aurubis has continuously reduced particulate emissions since 2000. With an investment volume of € 85 million, the RDE installation is the largest environmental protection measure in the plant in the Veddel district since the 1980s. It ensures another significant reduction in diffuse emissions.

Innovative and powerful

For RDE, new technologies are being used and combined in completely new ways. The specially developed, needs-based control of the ridge turrets enables a level of digitalization in environmental protection that is unique in the metals industry thus far, as well as efficient implementation with the high volumes of exhaust air.

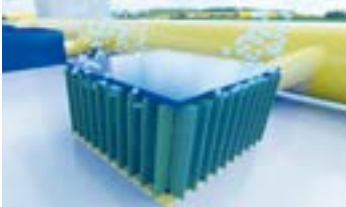


View of the new exhaust system (highlighted in color) at the Hamburg site in direct vicinity to the city

RDE at a glance

- » € 85 million investment in environmental protection
- » Automatic control of the 71 m² ridge turrets in alignment with current needs
- » Pipeline system with a total length of 185 m and an inner diameter of 4.50 m
- » Over 6,300 filter elements
- » Up to 540,000 Nm³/h air suction capacity
- » Filtering of particles smaller than 10 µm
- » 1.5 years of preparation, 1.5 years of construction
- » Commissioning in October 2021

The installation



Roof openings on the building housing the primary smelter (RWO) were closed and connected to a high-performance suctioning system. These **ridge turrets** are controlled in alignment with current needs, meaning that any time residual emissions are expected in the exhaust air in the production hall, the ridge turret lamella close automatically and the suctioning is activated.

The ridge turrets are connected to a central **pipeline** through which a volume of up to 540,000 Nm³ of air per hour can be suctioned off. That's the volume of air that would be required to fill three hot-air balloons in one minute. RDE is therefore one of the most powerful installations of this kind worldwide.



The suctioned-off air is now conducted through the 185 m long pipeline system to the actual **filter unit** and cleaned there in over 6,300 individual filter elements. For this purpose, the extremely fine, nano-sized dust particles are bonded with the help of precisely dosed quantities of lime and collected in the filter funnels.

The exhaust air cleaned in this way is then conducted away through a 110 m high **chimney**, and the collected ultra-fine particles are returned to the production cycle. This creates a closed cycle.



A global example

Today, Aurubis is already one of the world's most sustainable and efficient smelter networks. Since 2000, the Group has continually invested € 650 million in environmental protection measures in copper production – € 300 million at the Hamburg site alone. Aurubis is committed to the goal of becoming carbon-neutral by 2050 at the latest and has set ambitious,

science-based targets to reduce CO₂ emissions through the Science Based Targets initiative. These targets are being implemented in related projects. In addition to RDE, decarbonization projects in Hamburg such as the use of industrial heat, the power-to-steam procedure, and hydrogen trials are a few of the projects to achieve the sustainability targets.

More
information in
our **project video**
(in German)



Aurubis AG

Hovestrasse 50,
20539 Hamburg, Germany
info@aurubis.com