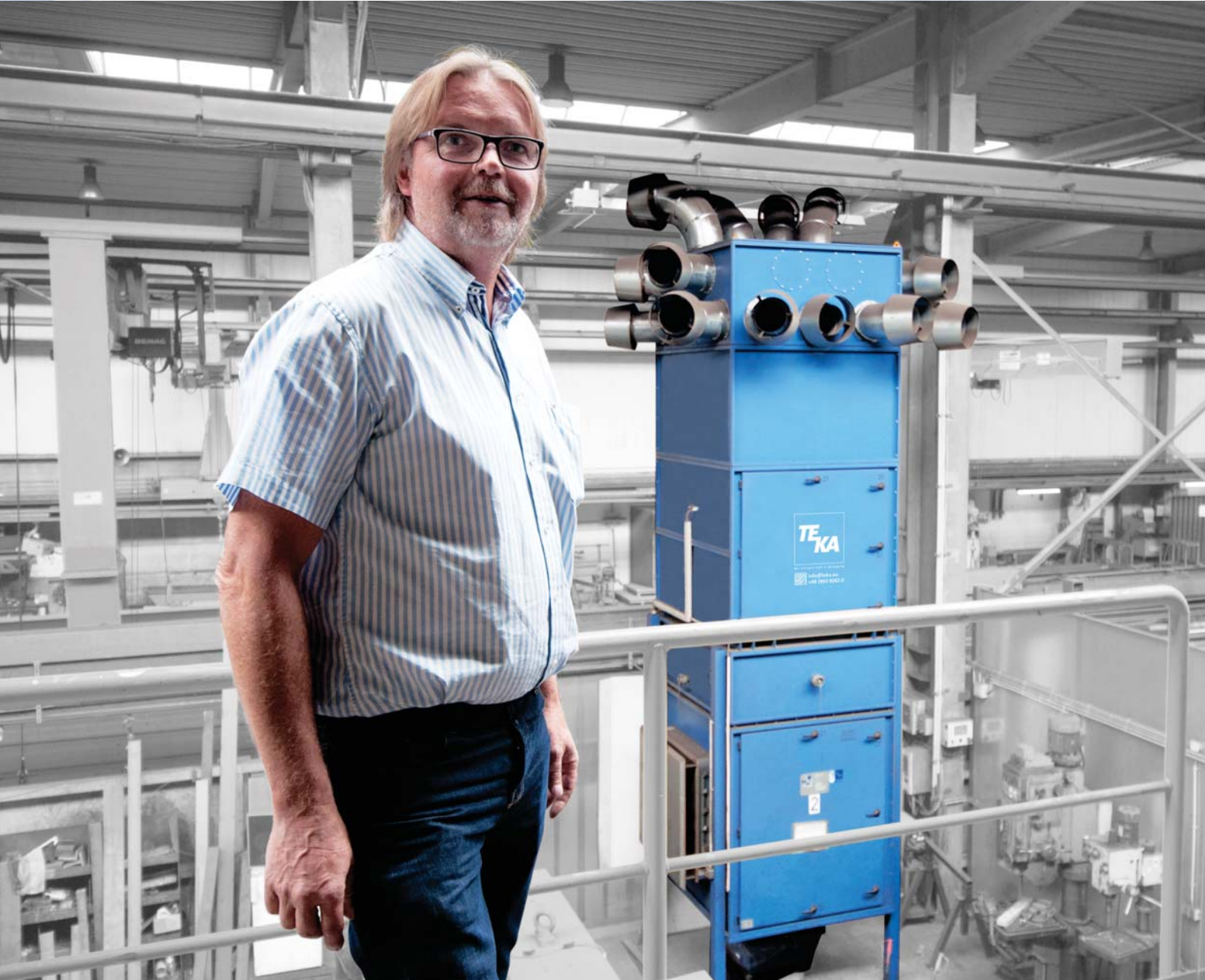


„The shroud of mist was gone, the mucous membranes were free“

TEKA

Heinz-Geert Peters uses an ambient air unit solution for purifying the air in the hall



number of sick leaves at Peters Stahlbau at a record low +++ top energetic performance
+++ astonishing result in the compliance with limit values +++ professional association
surprised about the effectiveness

We set air in motion

„The desired success has been achieved“

A constructor of halls reports on his experiences in our interview

Building halls is a „dirty business“. Everyone in the industry is familiar with the problem: A lot of welding fume and sanding dust is produced when processing big steel parts. A shroud of mist is spread everywhere in the hall, it is difficult to breathe. Health impairments such as nausea, headaches and lung problems are a common result.

The polluted particles do not only involve health risks, but they also disturb the entire production process. Dirt forms a dusty film on installations and machine parts. High maintenance and repair costs are the consequence. Extraction and filter units reliably resolve the problem. General manager Heinz-Geert Peters reports on his experiences with the ventilation system AIRTECH in our interview:

Mister Peters, what is remarkable about your company?

Peters: Our family-owned company with 165 employees in Itterbeck (Lower Saxony) has operated in this business for more than 80 years. We offer everything from the planning to the execution from a single source. We transform about 10,000 tons of steel each year on a production area of 7,000 m². Thereby we consider the employment of state-of-the-art technology as one of the pillars for high quality standards.

Does this apply for the occupational safety as well? How important is it to you?

Peters: We wish to provide high quality to our customers. Therefore, safe and healthy workplaces are an indispensable condition - and a clean working environment is part of it.

What role does the extraction technology play in it?

Peters: When expanding our production hall, the professional association for wood and metal contacted us and asked: „How do you handle the welding fume?“ After that we took a close look at the topic.

What was the result?

Peters: We have noticed that mobile units with suction arms are impracticable for us when processing big components. A system with pipelines was not an option neither because of the multitude of suspension and console cranes.

Which system did you choose?

Peters: In our three-span hall we use a ventilation system that does not require pipelines. It consists of six permanently installed extraction and filter units that purify the hall air and thus considerably improve the indoor climate.

„The shroud of mist was gone. The mucous membranes were free.“

How do they work?

Peters: The units take up the smoke-containing air produced during MAG-welding via side canals, filter it and lead the purified, warm process air via ejection nozzles back into the hall with an air exchange rate of five per hour.

What did you notice after the installation of the extraction units?



Heinz-Geert Peters swears by the ventilation system AIRTECH when it comes to the purification of the indoor air in halls.

Peters: The shroud of mist that had been drifting through the hall bay was gone, the mucous membranes were free.

„We almost don't notice the units, only if a light blinks once in a while.“

How did your employees react?

Peters: Everyone showed a positive reaction. The initial scepticism of the employees was replaced by general approval. When we lowered the rotational speed for testing purposes, the employees started protesting. When we speeded them up, we had right away a better indoor climate in the hall. In January visitors who had known our hall asked: „What has happened here?“ Our cleaning staff reported that there was less dust on the desks of the neighbouring office building. We almost don't notice the units, only if a light blinks once in a while.

And from a technical point of view?

Peters: The professional association predicted: „This will never work out. You won't be able to meet the exposure limit.“ The opposite turned out to be the case: We were below the statutory limit values for alveolar and inhalable dust at all the measurement points. Except for one at one workplace that does not exist anymore today.

Which requirements did you have for the system?

Peters: The safety and health of our employees is very important to us. We have undertaken a risk assessment for every



Breaking news

The AIRTECH series can now be supplied with a heating grid to serve as an air filter and a hall heating at the same time.

workplace and we have developed solutions for example for the fire protection together with the manufacturer. Electric releases ensure that, if needed, 15 m³ CO₂ flow into the filtration chamber and prevent a fire before it occurs.

„The professional association predicted: ,This will never work out. You won't be able to meet the exposure limit with it.' The opposite turned out to be the case.“

Which aspect was important to you besides safety?

Peters: The technical know-how. We receive the information about the operation and the state of the units on one screen. The operation is carried out via automation. We can increase or decrease the volumetric flow rate individually for every tower according to the work intensity. This saves energy.

Which role did the topic of energy efficiency play in general?

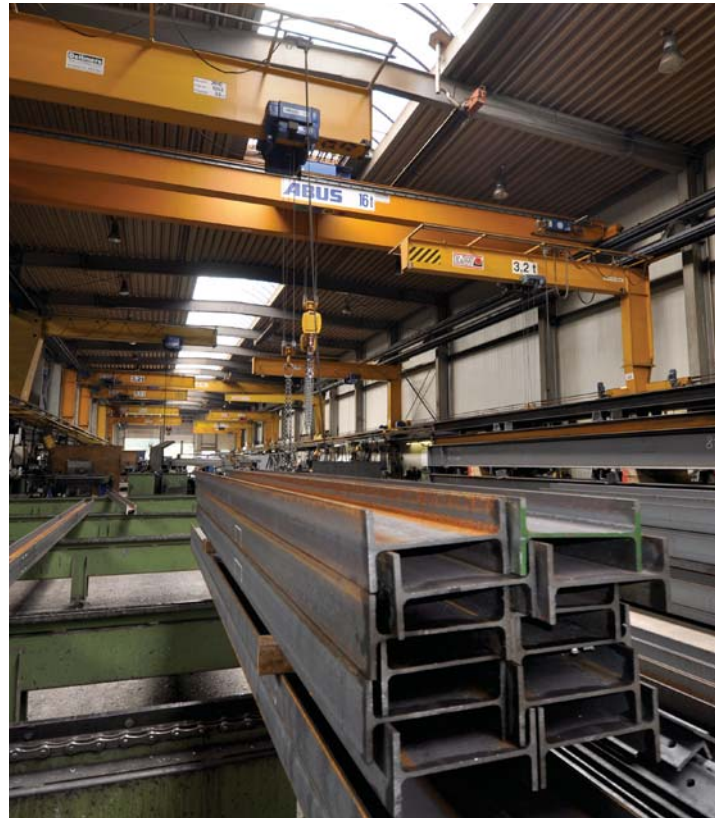
Peters: First of all, it makes sense, of course, to purify the existing warm process air and to reuse it instead of blowing it outside and implementing an energy intensive fresh air supply. In our case we are talking about 342,000 m³ air/hour that do not need to be led back from the outside and be heated up. Furthermore, this cuts heating costs. We heat with ceiling spots. We need them very seldom since we use the extraction and filter units as the outlet nozzles at the units spread the process air quickly and evenly.

How did you notice?

Peters: Our measurements have shown that the circulation of the warm air really works. We only have a minimal temperature difference between the head area of the employees and a height of eight meters. Thus we have a consistent temperature in all layers of the hall.

What balance do you draw?

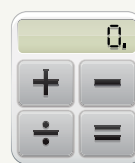
Peters: If you want dirt and fume exposure in your hall to be part of the past, then I can recommend you this system. The desired success has been achieved. When I see other systems in other companies I feel confirmed. This was a good investment!



Peters Stahlbau is one of the biggest German steel and hall construction companies

Good to know

Saving energy costs with AIRTECH:



The saving in energy (costs) is best exemplified by the following model calculation*: As shown by the example of Peters Stahlbau, 342.000 m³/h air do not need to be warmed

up thanks to the warm air return.

This can lead to a saving of 3 million kWh/year which would be about 130,000 EUR at a gas price of 3.5 cents per kW/h. This calculation is based on an operating time of 4000 hours/year and an average temperature difference of 7 degrees for the year. At the same time the environmental impact falls by up to 700 t CO₂/year. In comparison: You need about 5000 kWh/year to heat an apartment of 55 m².

You can calculate your individual heating cost savings within seconds!

<http://rechner.teka.eu>

**The real savings always depend on the spatial circumstances on the spot.*



The expert in constructional steelwork:
Peters Stahlbau

Peters Stahlbau has operated in this business for more than 80 years and guarantees expertise from a single source to customers worldwide. The company with 165 employees from Itterbeck (Lower Saxony) offers everything from the planning to the execution.

The core business is the construction of steel halls. The spectrum ranges from industrial buildings and power plants to stadium constructions. The employment of state-of-the-art technology is one of the pillars for high quality standards. Up to 10,000 tons of steel are transformed each year on a production area of 7,000 m².

Any questions concerning constructional steelwork?
+49 59 48 900-20



The expert in extraction:
TEKA Absaug- und Entsorgungstechnologie

TEKA Absaug- und Entsorgungstechnologie GmbH was founded in 1995 and is considered a reliable partner for pure air at the workplace. The company based in Velen (Westphalia) ranks among the leading manufacturers of extraction and filter units for the industry, craft enterprises and laboratories in Europe.

Whether for welding, grinding, lasering or soldering - wherever employees are exposed to health-endangering risks, the mobile, stationary and central extraction units provide for an appropriate protection and a better indoor climate.

Any questions concerning air purification?
+49 28 63 92 82-0

TESTIMONIALS FROM OTHER STEEL CONSTRUCTION COMPANIES



STADLER

» The extraction units have provided for a palpably better air in the hall. A positive side effect: The ambient temperature has increased by 4° C. The heating can stay switched off in winter. We were surprised about the low noise level.«



Sew

» Blowing the warm air outside in winter is a real waste of energy. The solution has provided for better air and an outstandingly regulated indoor climate in the hall. The temperature has increased noticeably.«



GISLER POWER

» Performance and reliability are extremely important to us. Hence we didn't want to compromise when we put the occupational safety on a new basis. And with this solution we take modern occupational safety regulations into account. «