

# PRACTICE REPORT 52

Application examples for planners of complex construction projects

**VENTAFLEX®**

More efficiency in air guidance



## Roof installation for exhaust air usage

**Application area for VENTAFLEX®:**  
A greatly dimensioned air duct oval guides warm exhaust air for wood drying back to the handling process

## “Air recycling” in great dimensions!

About one third of the energy for wood drying is saved by the use of waste heat. VENTAFLEX® air ducts take care of the reliable transport of up to 80.000 m<sup>3</sup> of valuable warm air.

### Task

The Brandenburg Group ranks among the market-leading specialists for wood fiber materials in the segments of animal bedding, smoking wood chips and industrial fillers and aggregates. Next to its headquarters in Goldenstedt in Lower Saxony the company has five other sites with different production foci. Sustainable economic activity is embedded in the guiding principles of the company: Only certified wood from preferably regional sources are allowed to be processed. Furthermore the energy management of the production is certified by ISO 50001.

Thereby the use of waste heat, which emerges at the four wood mills of the Goldstedt production site, was one relevant aspect. The warm air is directly guided over 100m to the drying unit; in order not to lose any valuable energy on this way, the choice was made for the highly insulated VENTAFLEX® system. The direct way over the roof served as the transport way of the air since it should be kept as short as possible. Again this is where the great dimensioned VENTAFLEX® air ducts scored, thanks to the light PUR-material: statically everything is in the “green range” too!

### Arguments for VENTAFLEX®




#### 1. Low thermal loss

A thermal loss of 100 Watt per 1 m air duct results from a temperature difference of 40 Kelvin = 10.000 Watt at 100 m length of air guidance.

Comparison: Type of duct and thermal loss at the total length of 100 m		
Thermal loss in W	Duct type	Thermal loss in degree C
10.000 W	VENTAFLEX®	0,37 °C
18.000 W	insulated air duct	0,67 °C
540.000 W	uninsulated air duct	20 °C

#### 2. Low pressure loss

Air ducts by VENTAFLEX® are significantly more streamlined than square air ducts due to the oval form and the smooth surfaces. The pressure loss is only 0,33 Pa/m referring to 80.000 m<sup>3</sup>/h for oval air ducts.

Comparison: Form of the duct and pressure loss		
Circumference	Form	Pressure loss
100 %		100 %
103 %		106 %
119 %		128 %

*Influence of the duct form on material consumption (→ weight/statics) and pressure loss (→ energy consumption/operating costs) at the same cross-section area*

#### 3. Quick realization

The route and the heat exchanger were able to be used. Only new air guidance had to be installed. This could be put into operation within one month because of short-term delivery and very fast installation time.

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