

A large roll of metal sheet is the central focus of the image, positioned in a dark industrial setting. The roll is supported by a heavy metal frame. The background shows the complex structure of a rolling mill, with various beams and machinery. The lighting is dramatic, highlighting the metallic surface of the roll and creating strong shadows.

# Optimizing the performance with improved capture efficiency

Rolling mill industry, India



*A large manufacturer of foil product approached Munters with a request to remove VOCs and other harmful particles. Industrial sectors such as rolling mills must follow certain emission standards not only to control pollution but to also optimize costs.*

### **Background**

The customer is prominent in the aluminum foil processing industry. They produce foil products with various thickness and quality margins for pharmaceutical and flexible packaging industries all over the world.

### **Process overview**

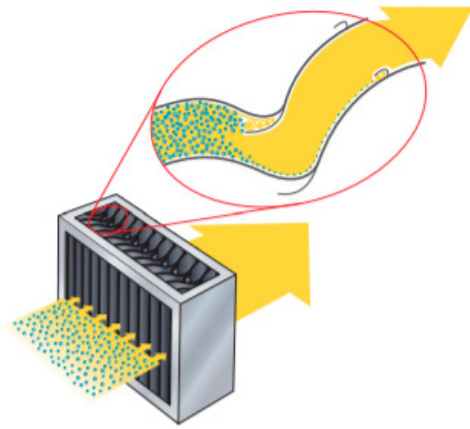
Aluminum foil is produced by rolling slabs cast in a rolling mill to desired thickness. It is a heat sensitive process and large amount of thermal energy is released from various production stages. The fumes coming out from this process needs to be filtered for removal of harmful chemicals, hydrocarbons, and VOCs before it is vented to atmosphere.

### **Case study**

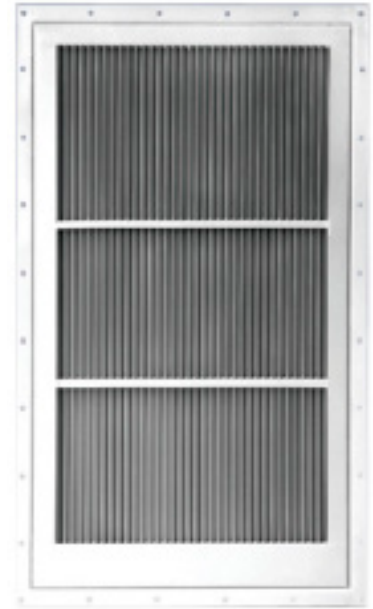
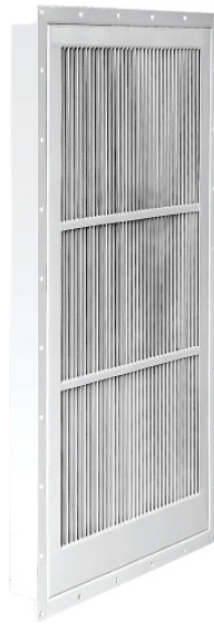
- Improved capture efficiency

### **Advantages:**

- High separation efficiency
- Specifically designed for high vapor volume
- Wide face velocity range and tailor made lengths available
- Wide range of assembly profiles available
- In house ISO 9001 certified manufacturing



*Principle illustration.*



## Customer's Requirement

Munters' mist elimination systems are virtually everywhere there are liquids and gases that need to be separated. Munters' systems have provided satisfactory results for many customers with similar applications.

For this project, the customer was looking to remove more than 95% of VOC from the exhaust gases with a low pressure drop in the system. They encountered high solvent loss in the form of carryover, which needed immediate attention. The existing system had limited space constraints to accommodate new equipment, and the flow through this exhaust gas system was horizontal, which made the design a challenge.

### Solutions provided

The Munters' mist eliminator required an accurate hydraulic check and all the available Munters' models were considered.

The inlet flow through fume exhaust system was as high as 60,000 m<sup>3</sup>/hr. This exhaust air contained the liquid particles of the oil used in the rolling process. System dimensions were limited to fit where the mist eliminator needed to be installed along with supporting frames.

The Munters' DH 5000 series mist eliminator was selected for horizontal flow. The droplets impinge onto the profiles, where they form a liquid film which is subsequently drained off because of gravity.

Specially shaped separating chambers ensure that the liquid is drained off correctly, while at the same time enhancing the separation of these very fine droplets. With accurate hydraulic calculations, we designed the mist eliminator to provide a required efficiency of more than 95% and a pressure drop of as low as 30 mm WC.

Would you like to find out if Munters has a solution for your company too? If so, please visit our website, [www.munters.com](http://www.munters.com)