Waste Sorting Plant
Remondis GmbH & Co. KG

Stationary Fire Protection
Case Study
Fire protection in the recycling process

Remondis, Orglmeister, and Rosenbauer – global leadership.

Remondis – a leading company in the water and environmental services sector

Remondis is the world’s leading specialist in the area of water and environmental services. In more than 500 branch offices and associated companies on three continents, Remondis handles all steps of the value chain – from the collection, through the treatment, recycling and disposal of waste.

High-quality raw materials, premium products, as well as environmentally-friendly energy sources are produced from waste. Remondis substantially invests in research and development in order to create new, strong products through state-of-art recycling technologies. As a result, it is possible to establish more and more closed circuits, thus protecting the environment. The Remondis subsidiary in Bochum, Germany, sorts and treats 500 tons of lightweight packaging from household waste every day.
Rosenbauer – individual fire protection solutions

Rosenbauer means fire protection – and has for over 140 years. Today Rosenbauer is one of the world’s largest manufacturers of fire fighting vehicles, and both stationary and semi-stationary fire extinguishing system. Fire departments, operators of industrial plants and planning and engineering offices across the globe put their trust in Rosenbauer’s cutting-edge technologies, systems and solutions. Rosenbauer itself develops and manufactures the key components used in the technologies of firefighting and extinguishing-agent delivery, thus guaranteeing best-of-class quality and reliability in every detail.

Orglmeister Infrarot Systeme (OIS)

Orglmeister is an innovative enterprise with more than 20 years of experience in the field of infrared thermal imaging. It focuses on the development and implementation of automation solutions and early-fire detection systems.

Today, OIS offers a competent infrared (IR) product line from IR fire detection through to panoramic, thermal imaging systems. Many references from industrial clients, and from the field of recycling, underline the quality and innovative nature of the company’s products and system solutions.
**Challenging initial situation**

The waste sorting plant in Bochum stores all kinds of household packaging waste and sorts it for further treatment. These materials subsequently leave the plant as recycled products. The waste delivered to the plant is inherently hazardous, as it is easily flammable, and represents a substantial fire load. In case of spontaneous self-ignition of the waste, a fire could destroy the expensive sorting facilities, leading to long-term production downtimes and environmental damages.

**Perfect protection for complex requirements**

PYROsmart, the early-fire detection infrared system by Orglmeister scans the entire delivery and production hall around the clock and creates a thermographic panoramic image. It is able to distinguish between easily combustible areas (such as hot spots), and harmless hot objects such as truck exhausts.

The detection even works reliably when the area is covered in thick smoke. When a hot-spot is detected, the camera automatically sends a signal with the coordinates of the affected area to the Rosenbauer turret extinguishing system.

The turret, mounted on the ceiling of the hall, starts the extinguishing operation with pinpoint accuracy. Throw ranges of up to 60 m (197 feet) guarantee reaching combustible material safely over the length of the entire hall.

**Customized solutions**

The combination of an infrared early-fire detection system and CAFS extinguishing technology assures ongoing production operations at Remondis.

- Detecting fires before they break out
- Seamless monitoring of large areas
- Pinpoint extinguishing
- Durable, low-maintenance components
- Modularly extensible
Case Study Remondis – Rosenbauer

CAFS. For a quicker fire out!

Many Rosenbauer fire extinguishing systems are based on the innovative compressed air foam system (CAFS). The benefits this system offers include:

▪ Foam expansion is actively controlled in the CAFS mixing chamber, which is protected against environmental influences.
▪ Compressed air foam with its uniformly high foam quality sticks to hot surfaces, including vertical surfaces.
▪ Improved safety against back-burning and sustainable cooling thanks to efficient extinguishing.
▪ Flames are deprived of oxygen and extinguished more rapidly.
▪ Improved penetration into burning material due to reduction of the water's surface tension
▪ Low application rates ensure efficient firefighting and keep water damage to a minimum.

Safer production operations. Reliable technology.

From the storage area, the material is transported to a shredder. During the shredding process explosions can occur whereby flammable materials can enter the sorting plant via a conveyor belt causing damage to the expensive equipment.

Therefore the PYROsmart infrared system monitors the material on the conveyor belt. If an incipient stage fire is detected, the CAFS extinguishing system automatically distributes compressed air foam over the entire surface of the burning material using full cone spray nozzles. The automatic POLY CAFS fire extinguishing system is completely energy-autonomous - without the need for an external energy source or pumps.

Fire extinguishing system protecting the conveyor belt and shredder

▪ Activation: automatic through PYROsmart infrared detection
▪ Fire extinguishing system: 2 × POLY CAFS SL200
▪ Energy-autonomous POLY fire extinguishing system
▪ Application device: Special CAFS full cone spray nozzles
▪ Extinguishing agent: CAF (compressed air foam)

PYROsmart infrared system und CAFS extinguishing nozzles
“The main reason why we decided on a fire extinguishing system by Rosenbauer, more than anything else, was that we wanted to sustainably protect the assets that we have established here at the sorting plant. The intent was to mitigate the latent fire risk that we will always have here to the extent that we can fight a fire before it breaks out. The solution we found for this is the fully-automated fire extinguishing system by Rosenbauer in combination with infrared detection by Orglmeister. Establishing total protection for all of the risk areas at our sorting plant certainly sets new standards in the recycling industry.”

Bernd Hoffmann, Plant Manager Bochum subsidiary, Remondis AG & Co. KG