

Case Study

Blower respiratory protection systems for Lead smelters



Help reduce the blood Lead levels of metal workers by selecting appropriate PPE

Lead is an essential material for numerous applications. Despite state-of-the-art technology, recycling and production of lead products can be very demanding, loud and dusty. Above all, employees in lead smelting works need to be protected from possibly harmful levels of airborne lead fume and dust. The example of a lead smelting works in North Rhine-Westphalia shows how it is possible to optimise occupational personal protection with a modern powered air purifying respirator system and helmet.

Lead smelting works create lead and lead alloys of the highest purity and quality from the raw material, ore. The heavy metal is used in a variety of ways, due to its special properties.

High purity lead and lead alloys are used in a wide range of industries and applications due to the unique physical, chemical and electrical properties of the metal. Primary lead production involves reduction of ores to yield lead and other valuable by-products. However, due to the ease of reclamation, the majority of lead production is from secondary sources – recycled metal, with raw material processing smelting, refining and casting operations to yield the final product.

A company from North Rhine-Westphalia is one of the leading producers of primary lead in Germany, with around 100,000 tonnes of lead per year and around 170 employees. 3M™ Versaflo™ Helmets and 3M™ Versaflo™ Powered Air Turbos are used here to protect the employees from potentially harmful levels of airborne lead fume and dust, as well as other airborne and physical hazards.

The health and safety of their workers is paramount to lead smelters. The heavy metal can cause serious acute but particularly long-term chronic health effects. In addition to improved process technologies, optimised workplace conditions and other control measures, the company uses personal protective equipment (PPE) from 3M to help prevent employees from being exposed to lead fume and dust as much as possible. An integrated powered air purifying system is used here, consisting of a powered air turbo, high-efficiency filters and a loose-fitting respiratory helmet to provide respiratory protection.

All-round protection combined with optimum comfort

In addition to respiratory protection, the helmet also provides integrated protection by helping to protect the head as well as the eyes and face. PPE is worn for long durations or the entire working shift, often whilst conducting hard physical work or in hot humid conditions. The comfort of the PPE is a significant consideration in the selection and use process. 3M Versaflo powered air respirators

and helmets allow workers to move freely around the workplace, are designed to be lightweight and balanced when worn and are engineered to make breathing easy during work thanks to the steady supply of filtered air into the helmet.

Effective protection from Lead dust

The lead smelting works in North Rhine-Westphalia proactively and consistently ensures compliance with high safety standards. For example, operating areas where PPE must always be worn are clearly marked and controlled, and respirators are used as part of an effective and comprehensive respiratory protection programme. The changeover to powered air purifying respiratory systems has proved a success. Blood tests, which are carried out regularly for all company employees, have yielded encouraging results. Since using the powered air respirators from 3M, blood lead values have decreased by up to 40 per cent.

Contact 3M to get support from our experts and help find the right PPE for your workers

At 3M we have a passion for PPE and we know the challenges and hazards of your profession. With our 3M™ Versaflo™ powered air respirators providing integrated protection from airborne hazards, eye, face and head impacts you can be confident of having full safety protection with the added benefit of comfort and enhanced productivity.

Plus, with our wide range of welding, hearing and other PPE, you can have confidence that we will help you find the right solution to keep your workers safe.

Get in contact with us and speak to a 3M personal safety expert for more information.

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