

CASE STUDY: QUARRY



The cost-effective way to increase employee respiratory protection compliance.

Personal respiratory protection against small particle dusts, or toxic fumes that are non-visible and odourless, is one of the greatest occupational health and safety challenges facing industrial companies.

THE CHALLENGE

A major building and construction materials supplier, with operations in Australia, US and Asia, sought to strengthen their current respiratory protection program by introducing PAPRs without 'blowing the budget.'

Ensuring employee cooperation and compliance was a key concern for the company when using disposable and reusable half masks. The associated costs, not only in the turnover in disposable units and filters, but also the financial impacts of employee morale, productivity and absenteeism were also a concern.

The company's hard rock quarries had many workers who regularly confronted hot conditions and dust hazards during daily shifts. While negative pressure masks and disposable

"Although small, the respirator has an intelligent software system that delivers clean, fresh air and is breath-responsive. The system adjusts the mask pressure and air flow to match that needed by the wearer, regardless of how hard they are working. It's a remarkably comfortable mask."
Dr Alex Birrell, CEO, CleanSpace Technology

respirators were being worn to protect employees during the production and maintenance phases, the company still faced a number of challenges in maintaining a safe and cost-effective working environment.

Many employees working over long periods of time, were required to carry a range of equipment and personal protection equipment (PPE) during high exertion activity. Despite knowing the risks, in hot conditions there was a natural desire for some workers to seek relief from cumbersome or uncomfortable face masks by removing or constantly adjusting their masks.

- The disposable respirators also relied heavily on the wearer correctly fitting the mask. Subsequent reports from quarry workers said the masks were tight and uncomfortable, and contributed to safety glasses fogging up - another cause for workers to remove their masks.
- The company was concerned employees weren't replacing the disposables and filters as often as they should when the filters became dirty, or in other cases, masks were being thrown away before they needed to be. This was significantly adding to the cost of the site's PPE program.





THE SOLUTION

Following an extensive review of available respiratory protection solutions and discussing the options with a leading national safety supplier, the company selected the half-mask PAPR unit CleanSpace2, designed and engineered in Australia.

CleanSpace Respirators are a revolution in the area of respiratory protection because while they provide all the protection of a Powered Air Purifying Respirator, they are free from belts, battery packs and hoses.

With its innovative, award-winning revolutionary design, the breath responsive CleanSpace Respirators gives employees a level of comfort and confidence against airborne particulate and gas contamination that has never before been experienced in the workplace. Compared to disposable masks, CleanSpace Respirators are high protection reusable devices with economic advantages, as the annual cost of replacing disposables stacks up.

“We were pleasantly surprised when we compared the costs of CleanSpace Respirators against the ongoing costs of disposables. There was a significant reduction in our long-term costs on respirators when we switched to CleanSpace Respirators. Every employee at our trial site now has their own battery charger, filter pack and mask,” The Company’s Health and Safety Officer

THE RESULT

When trialing CleanSpace Respirators, the Company’s hard rock quarries quickly discovered employees preferred wearing a CleanSpace Respirator over the traditional disposable dust masks that had been in use on-site for many years.

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The employees said the unit was more comfortable to wear, easy to use and simple to maintain. For the management team, this meant it was easier to implement the use of respirators in line with the site’s mandatory PPE requirements.

The positive air pressure meant the silicone masks did not need to be tightly fitted against the face, negating the need for regular fit tests. The site evaluation, supported by Portacount data, clearly demonstrated the high protection factor of the PAPR vs APR.

The trial highlighted additional benefits from using CleanSpace Respirators such as eliminating the issue of safety glasses fogging up. Employees also reported less heat stress and were able to perform daily tasks with greater ease as a result of the fresh airflow across their mouth, nose and face.

The company also noted the filter blockage detection system, which alerts the wearer to replace the filter when the system detects a heavy particulate load, ensured employees maintained an effective level of filtering while eliminating costs associated with unnecessary filter changes.

From an environmental perspective, the company felt proud to be reducing its waste footprint with the re-usable units.

To save costs even further, the company found the CleanSpace respirator unit, with its removable silicone masks, could be shared between staff members. Thanks to a closed circuit design, the exhaled air will not travel into the powered section of the respirator unit. With each person issued their own correctly sized face piece, the air is exhaled out through the exhalation valve, thus preventing the potential for the transfer of communicable pathogens between staff.

Since the initial trial, the company’s other Australian sites have witnessed similar improvements in safety, productivity and costs. With the support of Protector Alsafé they are now looking to implement CleanSpace powered respirators at many of its quarry sites as a replacement for disposable respirators.

CleanSpace is enabling thousands of operators around the world to work safely in comfort and with minimal intrusion to the task at hand. A wide range of blue-chip companies and governments are trusting CleanSpace to help meet their duty of care in managing down the safety risks of their operations.

CLEANSPEC TECHNOLOGY – A REVOLUTION IN RESPIRATORY PROTECTION