

CleanSpace2™

EVERY BREATH COUNTS

CASE STUDY

INDUSTRY: QUARRY



The cost effective way to increase employee respiratory protection compliance

THE CHALLENGE

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 heavy industry companies in their quest to ensure the everyday and long term health of their employees.

A major building and construction materials suppliers, with operations in Australia, US and Asia, recently re-addressed this challenge by examining their current respiratory protection program to see if it could be strengthened by introducing PAPRs without 'blowing the budget.'

The Company's two biggest concerns in using disposable and reusable half masks were compliance among employees in terms of uninterrupted, continuous use of the current respirators and the associated cost, not only in the turnover in disposable units and filters, but the financial impact of employee morale, productivity and absenteeism.

The Company's hard rock quarries have many workers who regularly confront hot conditions and dust hazards during daily working shifts. While negative pressure masks and disposable 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, with subsequent reports from quarry workers that the masks were tight and uncomfortable, and contributed to safety glasses fogging up, another cause for workers to remove their masks.
- Disposable and reusable respirators created concerns over whether employees were replacing the disposables and filters as often as they should when the filters became dirty, and, 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.



“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, PAFtec

THE SOLUTION

Having conducted an extensive search and review of respiratory protection solutions available and discussed the options with a leading national safety supplier, the Company selected the half-mask PAPR unit CleanSpace2, designed and engineered by the Australian company PAFtec Australia.

CleanSpace2 combines the ease of use and mobility of a passive respirator with the added protection, reliability and durability of a positive air powered respirator. What makes CleanSpace2 so different is that it does this all in Australia's most compact powered respirator unit (less than 700g), and without the high costs normally associated with the purchasing and maintaining PAPRs.

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With its innovative, award winning revolutionary design, the breath responsive CleanSpace2 gives employees a level of comfort and confidence against air borne particulate and gas contamination that has never before been experienced in the workplace.

With its origins in the medical device industry, CleanSpace2 recently won numerous design and innovation awards including Australian International Design Awards, British Safety Industry Federation Award, Preventica, Innovation Award, France and the SHP IOSH Awards, Finalist - Innovation of the Year, UK.

“We were surprised and pleased that when we projected out the cost of CleanSpace2 compared to use of our disposable respirators there was a significant reduction in our long-term costs on respirators when we switched to CleanSpace2. 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

After trialing of the CleanSpace2, the Company’s hard rock quarries quickly discovered that the employees preferred to wear CleanSpace2 over the traditional disposable dust masks that had been in use on-site for many years.

The employees said that 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 and support 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 provided by PAFtec Australia, clearly demonstrated the high protection factor of the PAPR vs APR.

The trial highlighted additional benefits from using CleanSpace2; including eliminating the problem of the safety glasses fogging up. Employees reporting less heat stress and that they were able to perform their 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, that 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 says it feels proud that it is reducing its waste generation with the re-usable units.

To save costs even further, the Company found that the CleanSpace2 respirator unit, with its removable silicone masks, can be shared between staff members. By issuing each person with their own correctly sized facepieces, the powered unit being a closed circuit design means that the exhaled air will not travel into the powered section of the respirator unit. 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 and with the support of Protector Alsafe, are now looking into implement the widespread use of the CleanSpace2 powered respirator at many of its quarry sites as a replacement for disposable respirators.

PAFtec Australia are finding that more and more organisations are turning to CleanSpace2 as the answer to a significant OH&S issue that they had assumed could not be addressed without major costs or impact on employee productivity.

CleanSpace2, the next generation in personal respiratory protection now makes this possible for all.