



AIR XS DEPLOYED FOR TESTING IN ENGINEERED STONE INDUSTRY

REAL RISK. REAL WORLD. REAL TIME.

Whilst the attitude towards real-time monitoring continues to positively grow, quite often we're still asked:

“Why would I bother with real-time monitoring if it's not regulatory?”

But we've found the benefits of real-time monitoring span much further and wider than just complying with regulation. As part of the ongoing testing and development of our AIR X particulate monitoring range, we often come across real-life examples of where data collected from incorporating real-time monitoring provides in-depth insights on processes and equipment that bring up results you may or may not expect, and our recent testing of AIR XS is no exception.





FIELD TESTING IN REAL-WORLD CONDITIONS

We recently collaborated with a leading workbench manufacturer to better understand some of the processes that are involved in generating potentially unsafe working environments due to dust exposure.

We simulated a kitchen installation, which was designed to measure exposure to respirable crystalline silica (RCS) during tool use. As the current reference method of RCS measuring, we used the common measurement system of a gravimetric sample to generate the average exposure over a 90-minute period.

The operative performed a series of cutting tasks using a common plunge saw and cross-cut saw — both equipped with HEPA filters (M Class rating) — as well as dry cutting with a grinder, all of which are common tools within the industry.

Throughout the test, the gravimetric sample recorded a task-based RCS exposure concentration of 0.191 mg/m^3 , equating to an 8-hour TWA of 0.036 mg/m^3 — assuming no further exposure.



THE RESULTS

On the surface, this would seem unsurprising for many.

However, whilst the 8-hour TWA only calculated 0.036 mg/m^3 , in real time, AIR XS recorded the following exposures...



PLUNGE SAW · 0.125 mg/m^3



CROSS-CUT SAW · 0.332 mg/m^3



GRINDER · 2.642 mg/m^3

Looking at the data set presented, these results highlight the capability of AIR XS to augment statutory monitoring by delivering activity-specific exposure insights in real time to give a much clearer picture.



WHY DOES THIS MATTER?

The 8-hour TWA is below the legal limit...

Whilst that's technically true – assuming no further exposure – the key takeaway is the stark difference in exposure levels from certain tools over shorter periods of time. This highlights the importance of selecting the safest tool for the job, understanding the high exposure risk of tools like grinders, and being able to manage or even eliminate those risks based on total daily use.

We're all a little surprised the grinder was nearly nine times higher than the cross-cut saw, and over twenty-one times higher than the plunge saw. Even the on-site users were shocked. While they may not be trained Occupational Health employees, they're the ones exposed to RCS daily and responsible for managing and mitigating the risks.

For these workers, it was a good learning curve that really struck home.

This is a common trend that we always see, though. And for us a key indication that incorporating real-time particulate monitoring, particularly in environments where multiple processes occur during various time frames throughout the working day, can be a real lifesaver when it comes to mitigating risks of overexposure, and gaining a wider awareness of understanding the problem.

If only we had the gravimetric average to work from, we could easily have assumed these processes were more equal in terms of exposure, or potentially even favoured the wrong tool for longer time frames, dramatically increasing exposure over a normal working day.

Data helps employers make better decisions – particularly when it's used correctly.

This is a fundamental cornerstone of our continued development towards evolving our ambitious AIR X particulate monitoring range and what drives our testing to ensure they remain useful tools for making workplace environments safer for those at risk of harmful respirable dusts in the workplace.