

# ISO 23875 implementation: what success looks like

## Part 3

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### ABSTRACT

The third article in this series explores the varying definitions of success for different stakeholders involved in the implementation of ISO 23875, the international Standard for air quality in mining operator enclosures. This article examines success from the perspectives of standards development, original equipment manufacturers producing certified cabins under ISO 23875, mining companies evolving their culture around indoor air quality, and regulators utilising industry best practices. The discussion includes potential benefits, such as improved operator health outcomes, enhanced public image, reduced legal liability, increased stakeholder accountability, and site-wide compliance fostered by a mining culture that fully supports operator enclosure air quality.

### INTRODUCTION

This final article in the three-part series examines the impact of ISO 23875 as it becomes widely implemented. The foundation for these observations is the experiences of the author over the past three-and-a-half years, travelling extensively to mine sites and machine manufacturers, and presenting to various occupational hygiene associates and government regulators in the USA, Australia, Canada, and South Africa. The impact of ISO 23875 will play out over the next decade as it becomes the way in which the world does business related to operator air quality. Extensive input has been provided on the Standard by users in all sectors, which will contribute to future revisions, further enhancing its usefulness and effectiveness.

### WHAT DOES A SUCCESSFUL ISO 23875 IMPLEMENTATION LOOK LIKE: DEFINING SUCCESS FOR DIFFERENT STAKEHOLDERS

Success in implementing ISO 23875 varies among stakeholders.

**Occupational hygienists:** success is measured by quantifiable results, such as a reduction in the incidence of sickness related to workplace exposures to respirable crystalline silica (RCS).

**Administrative teams:** success is defined as a process that is transparent, auditable, and consistent, ensuring accountability and regulatory compliance.

**Mine worker recruiters:** success means the ability to staff mine operations consistently, which is facilitated by providing safe and healthy working environments.

**C-suite executives:** success involves fully implementing a sustainable process that promotes healthy working conditions while minimising company risks.

**Machine operators:** success means going to work knowing that time spent in the operator enclosure will be a pleasant experience with no negative health impacts.

**Maintenance teams:** success is having clear maintenance expectations and checklists, enabling effective machine maintenance and meeting of both operators' and management's expectations.

**Mine site operations:** success is defined by the productivity of both workers and machines. ISO 23875 addresses both worker health and machine health, making it crucial for all stakeholders at a mining site.

### THE ROLE OF ISO 23875 IN DEFINING SUCCESS

ISO 23875 provides a framework that aligns the interests of all stakeholders. It offers clear guidance on implementing and maintaining solutions that ensure air quality inside operator enclosures. Properly

constructed and utilised standards can harmonise and synthesise diverse stakeholder objectives, fostering a culture of safety and accountability within mine sites.

### ORIGINAL EQUIPMENT MANUFACTURERS AND THE FUTURE OF ISO 23875

Since the publication of ISO 23875 in 2021, original equipment manufacturers (OEMs) have been assessing market interest in the Standard. Adoption by mining companies has led to machine tenders requiring ISO 23875 compliance, motivating manufacturers to redesign their machines to meet customer demands. As of this writing, every major mining machine manufacturer was addressing the need to produce ISO 23875-certified cabins.

Mining companies are motivated to comply with ISO 23875 by several factors, including regulatory requirements and stakeholder demands for good air quality. Adopting the Standard significantly mitigates risks associated with poor air quality, demonstrating to employees, regulators, and investors that air quality is a corporate priority. This also aids recruitment efforts and reduces legal risks. Despite concerns about the initial costs, the benefits include lower maintenance costs, increased machine and operator uptime, and a culture that promotes good air quality.

### CASE STUDY: IMPLEMENTATION AND CULTURAL SHIFT

A recent case study from a coal mine with a large fleet of haul trucks illustrates the benefits of implementing ISO 23875. Each truck was retrofitted to comply with the Standard. According to the site's occupational hygienist, the site culture shifted dramatically as more machines were retrofitted, with operator opinions evolving from indifference to strong support. The site achieved 95% compliance, with machines operating at average dust concentrations below 25 µg/m<sup>3</sup>. Operators now expect good air quality and comply with guidelines, such as keeping doors closed while operating machines. The union, maintenance personnel, and operators have all embraced the Standard, and efforts are underway to implement it site-wide.


### CHALLENGES AND FUTURE DIRECTIONS

The primary challenge to universal adoption of ISO 23875 is widescale implementation. Educating all stakeholders at the mine site remains a critical need. The International Society of Environmental Enclosure Engineers ([ISEEE.net](http://ISEEE.net)), in partnership

with mining companies, is developing a universally available stakeholder education curriculum. This curriculum focuses on both in-person and online training opportunities tailored to the specific needs of each stakeholder.

Experience shows that immediate improvements in operator air quality occur when the engineering controls required by ISO 23875 are implemented. However, maintaining cabin air quality over the life of the machines requires ongoing administrative oversight to ensure sustained compliance and continued benefits for all stakeholders.

## CONCLUSION

The benefits of ISO 23875 extend to all stakeholder groups, enhancing health outcomes, improving public image, reducing legal liabilities, and fostering a culture of safety and accountability. Despite the initial costs of retrofitting machines to comply with the Standard, the long-term benefits include reduced maintenance costs, increased productivity, and a healthier, more engaged workforce. Full realisation of these benefits depends on comprehensive implementation and integration into mine site culture, and establishing ISO 23875 as the standard practice for mining industry operator enclosures. 

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### INTERNATIONAL

Connection from occupational practice to research and global evidence: An ICOH webinar for practitioners

Virtual, 14h00 to 16h00 CET, 21 October 2024

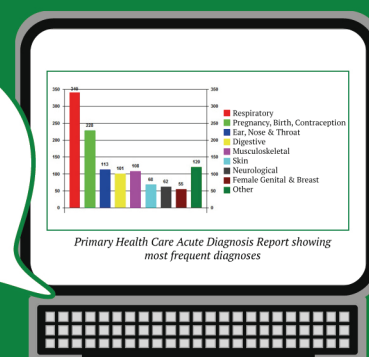
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