

ISO 23875: 2021 / Amended 1:2022 Cabin Air Quality Standard

ISO 23875:2021/AMD 2022 provides essential guidelines for air quality control systems in operator enclosures for the mining industry, prioritizing worker health and safety.

Performance Requirements

The standard sets air quality targets, including limiting **CO₂ levels to ambient + 400 ppm**, **particulate matter to $\leq 25 \mu\text{g}/\text{m}^3$** , and **decay time to ≤ 120 seconds**. Enclosures must maintain **pressurisation between 20 Pa and 200 Pa** to prevent contaminant ingress.

Cabin Design Requirements

Focuses on sealing enclosures to maintain pressurization, using durable, easy-to-clean materials, and designing airflow patterns that direct clean air into the breathing zone. Safety features, like **ROPS and FOPS, must remain unmodified** unless approved by the manufacturer.

Routine Maintenance Requirements

ISO 23875 recommends **high-efficiency filters, prefilters or powered precleaners** for extended filter life, and designing systems for easy maintenance access. Conduct **regular inspections** to ensure sustained system performance.

Monitoring Device Requirements

The standard requires **continuous monitoring of CO₂ levels and pressure** with reliable devices that provide accurate readings. **Alarms must alert operators** when thresholds (e.g., 1,000 ppm CO₂) are exceeded, with compensation for altitude and temperature changes.



ISO 23875 Requirement	BreatheSafe
Performance	 Our controllers are equipped with an advanced air quality sensor that measures CO₂ levels, Particulate Matter (PM) count and mass concentration , while also maintaining pre-set cabin pressure .
Cabin Design	 When mounting a High-Pressure HEPA Filtration system, it is vital to maintain the cabin's structural integrity. Therefore, BreatheSafe systems do not require any cutting or drilling of the cabin structure.
Routine Maintenance	 BreatheSafe HEPA filters are labeled, inspected, and tested per EN1822 standards . Designed for swift filter changes, supported by user manuals detailing maintenance schedules.
Monitoring Device	 The OnGuard system measures, records, and stores real-time data for Particulate Matter (PM) concentration, PM particle counts, CO ₂ levels, and other parameters. It alerts when thresholds are exceeded and adjusts the system to mitigate the issue promptly.

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Cabin Air Quality Standard

ISO 23875 is relevant to mining companies, equipment manufacturers, and health and safety professionals involved in the design, operation, and maintenance of air quality control systems for operator enclosures.

Mine Sites and Machine Manufacturers

Compliance with ISO 23875 ensures operator safety by setting clear air quality standards, **using effective filtration systems, conducting regular monitoring and maintenance**, promoting training, and fulfilling legal requirements. These measures **reduce exposure to hazardous airborne contaminants** in mining environments, protecting operators' health and well-being.



Health, Safety, Environment, and Quality

Complying with ISO 23875 helps HSEQ professionals by providing **clear standards for air quality management**, reducing health risks, improving monitoring and reporting capabilities, enhancing preparedness for incidents, and **ensuring legal compliance**.

Reach out to BreatheSafe for your team's protection.