

Emergency Refuge Chambers

For Mines, Tunnels, Chemical Plants, & Surface Operations





What Is It

The Strata Refuge Chamber is a complete safety system designed to provide immediate refuge and breathable air in the event of an emergency that compromises the quality of breathing air in the working environment. They serve as a cache of clean, breathable air, ideal for any situation where workers could become trapped.

Considerable time and resources have been invested into fully understanding the issues of working underground and at new mining depths, as is common in today's mining.

BREATHABLE AIR

Strata chambers are designed to be fully autonomous with battery backup and breathable air, available for up to 48 hours of stand-alone operation. They can be connected to available utilities such as power, compressed air and water to extend the supply availability indefinitely



CO₂ Scrubber

BREATHABLE AIR SYSTEM

- On-board air system including an active soda lime carbon dioxide scrubber and high purity oxygen bottles. The scrubbers can be designed to meet any regulatory CO₂ standards for exposure (typically 5000 to 10000ppm). The soda lime is periodically changed out, based on the number of occupants and the maximum allowable level of CO₂.
- Inbuilt Carbon Monoxide removal system (No chemicals, no self-life)

COMPRESSED AIR CONNECTION

- High quality air filtration system for filtering out oil, water, odour or organic compounds from the operations compressed air lines before being released into the chamber (AS 17151/16). A silencer is used to reduce noise levels and pressure relief valves maintain a positive internal pressure while continuously purging the chamber of human exhaled carbon dioxide.

AIRLOCK

Entrance compartment created by adding a heavyweight PVC curtain. This compartment prevents contaminants from entering the chamber when the main door is opened during initial entry.

An optional active purge system can be installed to flush the airlock using compressed air prior to entering the main chamber.



BATTERY-POWER

A fully removeable battery backup system consisting of long-life, high energy density batteries and specialized multi-stage chargers is standard. Optional high temperature batteries are available for harsh conditions. Ask about our battery upgrades.



The battery bank is sized to provide power to operate air conditioner(s), CO₂ scrubber, lighting systems, atmospheric monitoring gas detectors and communication system (upon request) for the designed duration. It includes a visual indicator to warn against low voltage.

- Batteries are bundled in convenient, portable packs to optimise handling and transportation, by eliminating manual handling of individual batteries
- Battery packs are stored on a convenient to use pull-out “shelf” which enhances access and simplifies maintenance.
- Auxiliary battery power is conveniently located at the chamber entrance

COOLING & DEHUMIDIFYING SYSTEM

Strata chambers are equipped with air conditioners to regulate the interior temperature and humidity. They are uniquely designed to handle the high quantity of moisture produced by humans in a confined space. Internal insulation is installed in the chamber to improve temperature control and reduce the running time of the AC unit.



SEATING AND STORAGE:

Storage space is provided under the seats and on overhead shelving. Seats are constructed from a high-grade, humidity resistant padding and materials for durability.



EMERGENCY SIDE ESCAPE HATCH

In case of a secondary emergency, such as a rock fall blocking the main chamber entrance, an escape hatch provides a secondary escape route. This can be opened and removed both inside or outside the chamber.



SAFETY & DIRECTIONAL DECAL PACKAGE

Chambers have large reflective signs fitted to all sides to identify the unit and direction to reach the entrance. A reflective band around the chamber enhances visibility.



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