



EMERGENCY REFUGE CHAMBERS
for Tunneling





EMERGENCY REFUGE CHAMBERS

Emergency Refuge Shelters are complete safety systems built for the critical purpose of providing a safe-to-breathe, isolated atmosphere when the breathing air in the working section has become compromised. They are ideal for incidents such as a fire outbreak, ventilation failure, sudden release of toxic gas or a gas-related explosion. They are intended for use when self-escape is not possible.

Breathable Air

EXTERNAL COMPRESSED AIR SOURCE

Chambers connected to operations main air-compressors have an indefinite supply of breathable air. This air passes through a purifying filtration system as it enters the chamber. Specialized relief valves maintain a safe internal pressure for the occupants.

Onboard Stand-Alone Breathable Air System

Strata ActiveAir® carbon dioxide scrubber equipped with a built-in fan system to circulate air through soda lime

- Soda lime packaged in spill-proof cartridges for easy handling and elimination of airborne dust.
- Premium grade soda lime 11-year shelf life from date of manufacture (DOM)



- Built-in automated timer with audio visual alarms for cartridge change-out schedule. Back-up chart provided.
- Individual cylinder, valve-mounted regulators with flow meters, to provide regulated O2 supply.
- * **OPTIONAL** built in O2 and CO2 gas detectors with digital read-outs

Atmospheric Monitoring & Remote Connectivity (optional)

Gas detection sensors of choice, LED display, AV alarms, control relays, datacomms and direct programming.



Electrical Power

- Chambers connected to the mains power source have an indefinite supply of power to operate the lights and internal systems
- A step-down transformer can be included as needed
- Power management systems regulate power supply to protect chamber circuits from extreme power fluctuations
- All external systems have an IP67 rating

ONBOARD BACKUP POWER SOURCE

A fully automatic 12/24-volt battery backup for all life support systems is standard on all chambers. This powers all essential equipment, such as the ActiveAIR® CO2 scrubber, atmospheric monitoring system, and interior/exterior lighting. Chambers equipped with air conditioning have a separate battery backup independent of the primary system. Battery power options range from 12 – 96 hours (scalable to customer preference).

Air Conditioning and Dehumidifier

Highly efficient Mitsubishi 220/230 VAC 50/60 hz air conditioning unit.

First Aid

First aid kit to suit the number of occupants, and a foldable stretcher for transporting injured persons are stored under the seats.

Private Sanitation

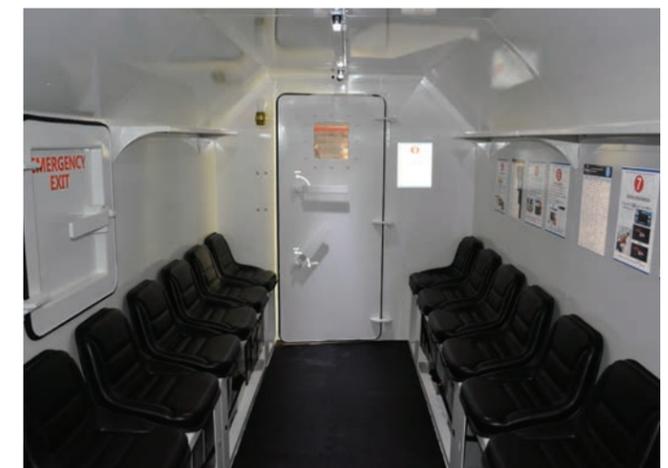
Portable chemical toilet with a 5.5-gallon (21L) water reserve tank and tissue paper.

Seating and Storage

Interior meets ITA space and volume standards. Padded seating for occupant comfort is constructed from high-grade materials and meet the ITA 500mm spacing standards. Storage facilities are provided under the seats and optional overhead shelves.

Food/Water

Ten-year shelf life emergency food and water is supplied as required. Minimal quantities to meet government regulations (scalable to customer preference).



Construction

Strata refuge chambers are purpose-built to withstand harsh environments and are designed to isolate people from potentially toxic environments. Strata provides multiple options to cater to specific applications which can be customized and equipped to fit the needs of each project.

CHAMBER OPTIONS



ERCX - Steel-sided, standard and narrow. Wheels optional.



TBM mounted with optional modified construction to suit the diameter of the roadway bore



ERCM - Modular design for flexible sizing and ease of handling. Wheels optional.



Rail-mounted, self-propelled for emergency evacuations



Portable, inflatable units for quick deployment



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