



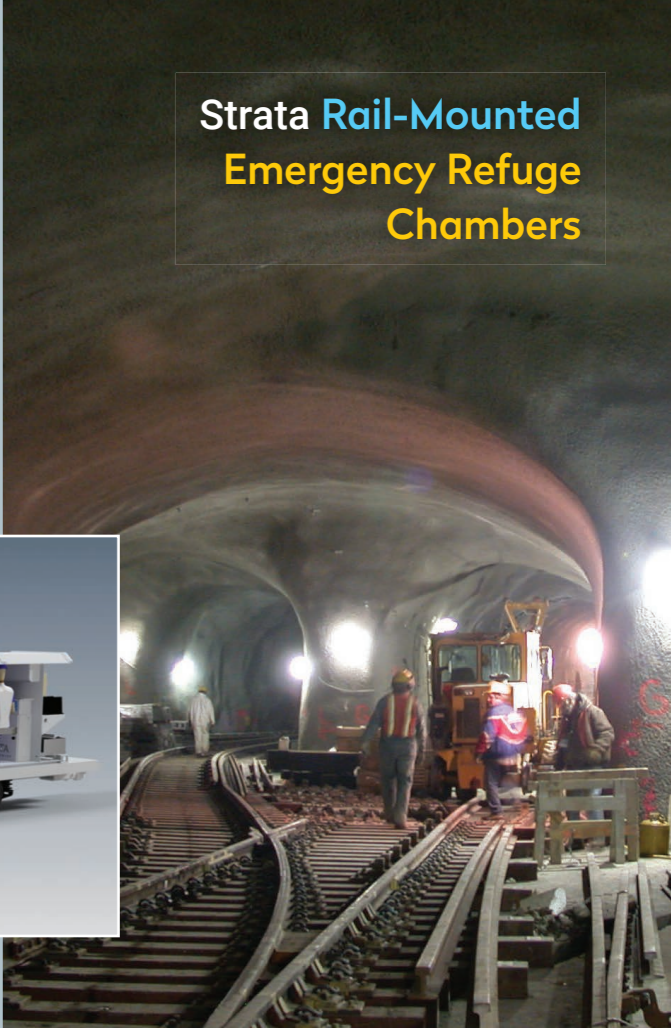
Emergency Refuge Chambers are a crucial safety system for workers underground. Built to provide a safe haven of breathable air in the event the air underground becomes compromised. They are ideal for use in case of fire, ventilation failure or toxic gas release.

## Strata Rail-Mounted Emergency Refuge Chambers

Strata Worldwide offers a comprehensive line of refuge systems, custom-built to meet specific requirements of individual operations. Strata's chambers are manufactured and distributed globally and are easily tailored to meet local, and industry regulations.



Strata Rail-Mounted  
Emergency Refuge  
Chambers



MOBILE RAIL-MOUNTED ERC – Self Propelled. Drive in, drive out.

Ideal for Tunneling Operations – Built to ITA Standards and Specifications

The Mobile Rail-Mounted ERC, jointly developed by Strata Worldwide and Mining Equipment LTD, is a battery-powered, self-propelled emergency refuge chamber. The mobile chamber is operated from within the unit and remains readily available in the case of an emergency.

When needed, the locomotive chamber is accessible to workers in the tunnel construction area or on the TBM and expedites their evacuation from underground. The ERC can return to retrieve additional workers if necessary.

- Battery power sufficient for a minimum of two rescue trips
- Charging time to 100% power is approximately 40 minutes
- Standard 24 hours of onboard breathable air
- 16-20 person capacity, built to spec
- Fold down seats
- Emergency escape hatch

LOCOMOTIVE

- Smart Battery or diesel driven
- Hydrostatic Drive with simple chain drive
- Enclosed operation cabin on one end. Camera system for driver viewing on other end.
- 600-914mm rail gauge
- Full suspension/Wilson automatic couplers with draft gear
- Park brake
- CE Certified

BATTERY POWER SPECIFICATIONS

CHAMBER BATTERIES
Battery packs & POD safety fuses
24-hour back up power for lights, CO2 scrubber and air conditioner
Std config. – 220/230 VAC 50/60 Hz
AC/DC Inverter

LOCOMOTIVE	
DRIVE	
AC Motor:	25 kW at 3.000 rpm
Gear Box ratio:	1:10
Chain drive:	1:1
Driven wheel Ø at rail:	0,45m
Theoretical max. speed at wheel:	25, 45 km/h
Car speed nominal:	20 Km/h
6 X LITHIUM - ION BATTERIES:	
Voltage:	144V
Power nominal:	60,3 kWh
Power effective:	54,3 kWh
Integrated charger capacity: 19,5 kW (plug in 400V-50Hz)	
Charging time 0 - 100% effect.: 3h	

LOCOMOTIVE CHARGER	
AC Input Voltage Range: AC90V~AC265V	
AC Input Frequency: 45~65 Hz	
AC Power Factor: > 0.98	
Full Load Efficiency: > 93%	
COOLING:	
1) Forced Air Cooling	
2) Liquid Cooling	
ENVIRONMENTAL: IP67	
Operating Temp: -40°C - +55°C / -40° F - +131°F	
Storage Temp: -40°C - +100°C / -40° F - +212°F	
Supply Power to Aux. Battery:	
12V 5A or 24V 5A (optional)	
CONTROL METHOD (ONLY FOR LITHIUM BATTERY)	
1) With CAN Bus	
2) Enable Wire	

## STRATA EMERGENCY REFUGE CHAMBERS STANDARD EQUIPMENT

### Onboard Stand-Alone Breathable Air System

- Strata ActiveAir® carbon dioxide scrubber circulates air through soda lime chemicals to remove CO<sub>2</sub>.
- Soda lime packaged in spill-proof cartridges for easy handling and prevention of airborne dust.
- Built-in automated timer for cartridge change-out schedule
- Oxygen cylinder with individual, valve-mounted regulators to replenish O<sub>2</sub> levels
- Compressed air Positive Pressure System (PPS) to maintain 100 Pa positive pressure atmosphere. Optional Manual system (MPPS) for continuous, fixed quantity release or Automated system (APPS) for regulated air release to maintain preset 100 Pa overpressure.

### Gas Detection & Environmental Monitoring

- Built-in O<sub>2</sub>, CO<sub>2</sub> and CO monitors with warning alarms
- LED display, AV alarms, control relays, datacomms.
- Simple exchanging of Sentro sensing modules for calibration

### Automated Oxygen System \*Optional

Strata's automated O<sub>2</sub> system automatically adjusts cylinder flow rates and keeps O<sub>2</sub> concentration at safe levels. This eliminates the need for manual adjustments. Levels must still be manually monitored for safety



### Air Conditioning with Dehumidifier

- Highly efficient Mitsubishi 220/230 VAC 50/60 Hz air conditioning unit
- Maintains safe and comfortable temperature levels inside the enclosed chamber

### Food and Water

- Individually packaged emergency water and food provided.
- 10-year shelf life.

### First Aid

- First aid kit to suit the number of occupants, and a foldable stretcher for transporting injured persons

### Private Sanitation

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



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