Transit shelters along the escape route

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After an underground mine emergency, the immediate action for the survivors is to escape the mine.

**In case of a long distance to the surface and safety, the escapees can benefit from transit shelters placed along the way**

Transit shelters allow miners temporary refuge along the escape way.

Also can be used by rescue teams in case of encountering difficulties.

Transit Shelters may be built-in or pre-fabricated types.

Used in conjunction with other escape methods such as recharge systems.
Transit Shelter Usage

Transit Shelters allow miners to:

- Rest
- Food/ hydration
- Exchange/ Re-charge breathing apparatus
- Review escape paths
- Communicate
- Treat injured
Transit Shelter Design Aspects

The most important design aspect of these shelters is to have a **high throughput of escapees**.

- Quick flushing of man locks
- Maintain a low carbon dioxide level
- Create an overpressure inside the shelter
- Inlet air filtration
- Recirculating filter system
Transit shelter with twin air locks

Two air locks for faster admittance into shelter.

Larger lock can accommodate stretcher

Separate air banks for flushing and maintaining positive pressure

NOTES:
1. AIR SUPPLY PANEL
2. CO2 ABSORBER
3. BREATHING AIR CYLINDERS FOR AIR LOCK FLUSHING
4. BREATHING AIR CYLINDERS FOR ROOM PRESSURE
Built-in Shelter Components

- Air Lock
- Air Curtain
- Air Banks
- Safe Air Conditioner
- Toilet, Sink & Water Supply
Air lock systems for toxic gases

- Ventilation tubes
- Air lock
- Air curtain
- Filter unit for toxic gases
- Air flushing equipment
- Outlet to refuge room
Carbon Dioxide Scrubbing Systems

- **Twin-CO\textsubscript{2} - Scrubber K 3,0**
  - for max. 120 persons / 1 Vol. % CO\textsubscript{2}

- **CO\textsubscript{2} - Absorption System K 10,0**
  - for bunker rooms
  - e.g. 350 persons / 1 Vol. % CO\textsubscript{2}

- **CO\textsubscript{2} - Scrubber CH 16720**
  - for max. 40 persons / 1 Vol. % CO\textsubscript{2}

- **Dräger Sodalime cartridge K 3,0**
Air Supply

Air Storage Banks
Shelter Gas Tight Doors

Special door for blasting works

Spring loaded door for shelters

Door with air curtain device for excluding smoke and contaminations
Further work on the operation and training in the use of these shelters needed

Thank you for your attention!