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MSHA/OSRV

From: Tony Farrugia [Tony@shairzal.com.au]
Sent: Friday, February 24, 2006 4:59 PM
To: zzMSHA-Standards - Comments to Fed Reg Group
Cc: Tony Farrugia
Subject: [Docket No: RIN 1219-AB44];[FR Doc: 06-00722];[Page 4223-4226]; Coal mine and metal and nonmetal mine safety and health: Underground mines-- Rescue equipment and technology; comment request

Shairzal Safety Engineering is a manufacturer of Air Breathing systems and specialize in confined space and hazardous environment respiratory equipment we custom build as well as supply a standard range of products.

We design and manufacture **carbon Dioxide scrubbers, Emergency Rescue/Refuge Stations and Fresh Air Bases for the Mining, petrochemical and general Industry** in fact anywhere that requires safe breathing Air or safe havens for people working in hazardous environments and offer very cost effective safety solutions as well as expert backup advice.

Shairzal Safety Engineering is a member of Mining Equipment & Services Council of Australia, Chamber of Commerce and Industry of Western Australia and Australian Industry & Defense Network (ADIN).

Please take the time to view our web site www.Shairzal.com.au and give me a call should you require further information.

I would appreciate the opportunity to assist your department with any advice that will see equipment installed that saves lives.

I have attached several documents that may be of interest.

I look forward to your reply.

Yours faithfully

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Shairzal Safety Engineering is a company at the forefront of the Mine Safety Sector not only across Australia but internationally as well. The company is very committed to working with the Mining Industry to produce safer work environment solutions. Managing Director Tony Farrugia is well established in the industry with a reputation for producing purpose built Refuge Chambers according to the Mine requirements. When faced with an issue to be resolved he takes it on as a personal challenge to produce a safe and efficient outcome even if it means inventing a system or piece of equipment to achieve this. An example of this is a carbon monoxide diversion system which can be fitted to their Refuge Chambers, Crib rooms or inline air systems.

During a mine fire in Tasmania on Tuesday 4th January 2006, 3 miners sheltered in an emergency refuge for more than eight hours at the Allegiance Mining Avebury mine after a truck crashed and caught fire.

The driver of the vehicle ran 800m down the 1.2km Viking decline to warn the other two men, and the trio made it to a purpose-built emergency refuge chamber equipped with oxygen and supplies, This Refuge chamber was fitted with the Shairzal breathing air system that saved their lives.

There were 2 other similar incidents last year where the Shairzal Safety Chambers were used by miners during underground fires.

If you speak to anyone involved in the Mining Industry during the 1980's Refuge Chambers were a rarity and their best chance was fast sprint to the closest Crib Room if they had an emergency.

The National Health and Safety Commission statistics revealed the Mining Industry had work place deaths at a rate seven times higher than the all industry average between 1989 and 1992 in Australia. In 7% of deaths, mine gases played a role, including one incident, where three workers were asphyxiated by carbon monoxide and methane gases.

Current (2003) statistics show a decrease in the incidence rate but it still remains above the national average of 16 claims per 1000 employees. The incidence of workplace fatalities in the Mining Industry is still four times the national average. The Mining Industry wants to improve its safety record and hopefully gone are the days, in Australia, when safety was managed on a wing and a prayer. Today with ever increasing Legislation and Regulation the installation of Refuge Chambers are becoming an essential part of the Emergency Rescue plan and the management of emergency situations in underground mines is one of scientific research.

The idea of fleeing a hazardous situation is not always the best solution. The concept of retreating to a refuge and 'waiting out' a situation can sometimes be the safest option. Miners can then wait in a life sustaining environment until the emergency no longer exists or until mines rescue arrive. Continuing development and research has meant the design and function of the Refuge Chamber has improved greatly in recent years.

The latest Refuge Chambers have sirens and high visibility lighting to alert the miners of the location of the Chamber in an emergency situation, together along highly reflective signage make the chamber easier to find even in situations of poor visibility. Our unique design has a partitioning inside that

creates an air lock which restricts the flow of contaminated air entering the refuge while the miners are entering the Chamber.

Once inside the chamber the workers have access to radio communication, mine air, air conditioning, lighting, first aid, fire equipment, water, comfortable seating and even a toilet in a separate cubicle. After the door is closed the chamber is a completely sealed unit and therefore a safe refuge from smoke and other toxins.

Mine air is delivered to the occupants through filters to AS1716 standard and is replenished every three minutes. Every effort has been made to make the occupants as comfortable as possible to help reduce anxiety. Air conditioning is considered a vital tool in reducing anxiety in a stressful situation and it can be set at a cool 17C, and maintained at this temperature indefinitely. Even the standard chambers have no resemblance to the old claustrophobic shipping containers of the past and come with storage areas for extra equipment and blast proof windows in the wall and door to allow outside visual checks.

In extreme circumstances where the Mine Air and power fails the chambers really come into their own with a bank of batteries. Battery back up ensures the lighting and air conditioning will continue while the air supply is perpetuated with the activation of a Refresh Air Scrubber. This unit circulates and scrubs the air for more than one noxious gas while oxygen cylinders replenish the oxygen used by the occupants.

The solid construction of the Chamber is, once again designed specifically for the harsh mine environment, fitted with a crash barrier on all sides and is so robust it will even sustain some rock falls. A highly desirable feature is that it is fully portable and can be moved anywhere the mine work dictates. The chamber has curved walls mounted on a robust base with skids and by utilizing the various lifting points, forklift slots or IT attachment these chambers can be readily placed anywhere around the mine.

The Shairzal Safety Engineering team work very hard to seek innovative solutions that can be incorporated into their units, much work has been done to develop and design refuge chambers that provide a safe haven whilst maintaining a good of space and comfort, this aspect alone is considered vital to enable occupants have a comfortable feeling when entrapped rather than the perception of being entombed.

Tony states that while a new Chamber is a very desirable option, some mines do have old chambers which can be refurbished and he offers a service whereby he will advise customers on the viability of bringing them up to standard. Really, there should be no excuse for not having a safe haven at any operational area of the mine.

Although the chambers are aimed at the Mining sector, many other industries such as the Petro-Chemical and Chemical manufacturing plants have a great need for this type of equipment.

Tony operates his company Shairzal Safety Engineering P/L from Melbourne and has offices in all states of Australia as well as Overseas agents in USA, Mexico, Chile and Turkey.

Behind every successful company there is a team of highly skilled trade's people, factory and office staff along with reliable suppliers, Shairzal is no different and although Tony is only a small part at the top, without his team of people and great suppliers, Shairzal would not be the respected company that it is today.

EMERGENCY REFUGE STATIONS



We build, service, repair and upgrade emergency refuge stations, fresh air bases and plant rooms.

- Mine Refuge Chambers
- Change Over Bases
- Crib Room Scrubbers
- Breathing Air Systems
- High Pressure Compressors
- 40+ Hours of Oxygen Supply and Air Scrubbing Systems



Interior of unit



Air Scrubber Co² Removal

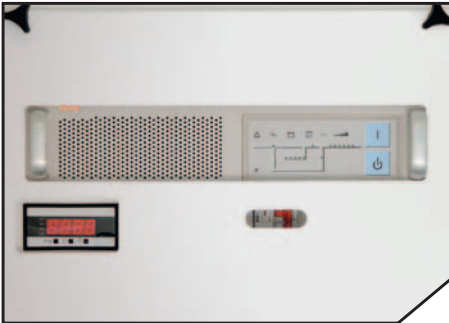


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BREATHING AIR FILTRATION

Filtration is to AS1716 quality via a 4 stage filtration system. The sizing of the flow is such that the total purge of the base is done every 3 to 4 minutes. This prevents the build up of Co² and minimizes the heat build up. This option allows indefinite breathing air duration as long as the plant airlines are maintained.

BACK-UP AIR SUPPLY

A 36-hr back-up system, operated via a battery pack is installed. This unit removes Co² and provides breathing air for 36 hours.

AIRLOCK & ESCAPE HATCH

All Bases have a 1200 x1200 entry area just inside the door that is sectioned off via a heavy clear plastic curtain. This minimizes large quantities of contaminants entering the entire base through constant opening and closing of the door. A rear escape hatch is installed providing an alternative emergency exit.

AIR CONDITIONER

A split system air conditioning unit ensures a comfortable environment for the occupants.

STANDARD FEATURES

- Remote Controlled Reverse Cycle Air Conditioning
- 40+ Hours of Oxygen Supply and Air Scrubbing System
- Seating For All Occupants,
- Drinking Water, Fire Extinguisher
- Chemical Toilet in Separate Compartment
- Airlock On Entry - Self Closing Door with Window
- Fully Reflective Signage - 900 Candle Rating
- Custom Made Fully Welded Enclosure - Yellow/White
- Forklift Guides / Lifting Facility / Skid Base
- Primary Air Supply Source Including AS1716 Filtration
- Lighting, Overhead Shelving, First Aid Kit
- Rear Escape Hatch & Crash Barrier All Sides

OPTIONAL FEATURES

- Battery Back-up System
- IOX & Oxygen enhancement
- Base Station Communication
- I.T. & QDS attachments
- 1000V / 240V Step Down Transformer
- CO Diversion System

HANDLING

Lifting points on the top of the chamber and a forklift slots on the side. The base is a full skid allowing the unit to be dragged if needed. I.T. attachment can also be incorporated.

SIGNAGE

Highly reflective, signage identifying the Fresh Air or Refuge Base in smoke filled or restricted vision areas.

ENCLOSURE

We design and manufacture to meet specific customer needs. Sizes to cater from 4 to 40 people.

Shairzal forms the largest partnership in mine safety and purpose built equipment. Our service network is Australia wide—see below.

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VISIT our web site

WWW.SHAIRZAL.com.au

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