

Notification

From the Ministry of Labor and Social Security:

REFUGE CHAMBERS INSTALLED IN UNDERGROUND MINE WORKPLACES

Goal

ITEM 1 – (1) The purpose of this document is to specify the procedures and principles regarding refuge chambers to be established in underground mining establishments specified in Article 30 of the Law on Occupational Health and Safety No. 6331 dated 20/6/2012.

Scope

ITEM 2 – (1) This document covers underground metal mine workplaces that fall under Law No. 6331.

Support

ITEM 3 – (1) This document has been prepared on the basis of the 30th article of Law No. 6331 dated 20/6/2012.

Employer's obligation to establish a refuge chamber;

ITEM 4 – (1) Necessity to have refuge chamber in mine and locating them;

a. Employer should locate/establish refuge chambers and provide self-rescue masks according Occupational Health and Safety in Mine Workplaces Article 14 of Annex-3 of the Safety Regulation. Second paragraph of Article 5 which defined the “emergency exit plans preparations” must take into account.

b. Except for mine galleries which excavated to make preparations and no ore production started, refuge chambers must be located/build if distances to surface is more than 700 meters from main/access galleries using for human transport, ventilation shafts

c. Employer can decrease the distances to refuge chambers and increase the number of refuge chambers if it's necessary due to the mine conditions.

d. In case of distances to exits to surface are less than indicated in the regulations, employer can decide to set up or not set up the refuge chambers according to emergency scenarios explained in bylaw 5. If refuge chamber will not set up in mine, employer should define that “workers can be evacuate with self-rescue mask” in health and safety documents

Other obligations of the employer

ITEM 5 – (1) Employer;

a. Should always keep refuge chambers ready to use in case of fire, explosion, rock collapse, poisons or choking gas releasing in the mine.

b. In emergency action plan, locations of the refuge chambers and how to rescue refuges in chambers must be specified.

c) Should determine numbers of the refuge chambers and locations considering fresh air intake galleries, number of workers in one shift and possible emergency situations. To identify emergency situations during the mining operation, comprehensive emergency scenarios must be based on.

ç) Refuge chambers should be accessible with life-line.

d) Permanent chambers must be built well-supported and durable. It must be sealed against the leakage of poisons, choking and explosive gasses. Portable chambers must be located in stable and safe areas, surrounding of the chamber should be properly supported.

e) Chambers, prevent it from being used use for the wrong purposes

(2) The employer evaluates the possible emergency scenarios taking into account the following aspects;

a) Number of workers in the shift.

b) Type of ore, mining method, ore production faces, length/slope of the main ramps and access roads.

c) Capacity of the refuge chambers

ç) Risk level / possibility of entrapment in the mine

d) Necessary time to stop underground production and activities in case of emergency.

e) Whether or not it is possible to evacuate the workers according the conducted drills.

f) Effects on mine when sudden explosion happens.

g) Possible fire, explosion, rock collapse, poisons or choking gas releasing on exhaust air exit galleries while workers are in these locations. In case of using exhaust air exit galleries as an emergency escape route.

ğ) Geological structure, thickness of ore body, ground and roof rock conditions, distance to fault lines and underground water reservoirs.

h) Distances between the refuge chamber and possible explosion and fire sources; explosive, fuel storing and parking areas.

i) Total equipment and machine numbers in the shift, fuel types, weight and other specifications.

i) In case of sudden fire or explosions, firefighting systems such as water spraying, extinguishers placed in certain places in the mine are in operation or not.

j) Type of the self-rescue masks. Measured exit – escape timings from the mine during the conducted drills. Worker profile and conditions of the mine should take into account during these tests.

k) Ventilation directions in summer and winter if mine is using natural ventilation system.

Technical specifications of refuge chambers;

ITEM 6

- (1) Technical specifications should be determined according to ore type, mining plan, total number of workers, emergency plan and escape routes.
- (2) Refuge chamber connects to mine pressured air system. There should be a valve to close it when it's necessary.
- (3) In case of using the refuge chambers in emergency situation, chamber should provide breathable air to refuges minimum 36 hours. In case of mine pressured air failure, there must be reliable oxygen sources inside the chamber. While providing oxygen to refuges, both CO₂ and CO gasses must be filtered-scrubbed by the system without causing any danger to human health.
- (4) Air conditioning, air scrubbing, moisture removing, lighting, warning lights, communication and gas monitoring systems must be powered minimum 36 hours with back-up power source .
- (5) Refuge chambers (permanent and portable) and all components must durable against all external impacts. Floor, roof and side walls included, all body-frame must have resistance to 5 psi blast.
- (6) Refuge chambers must be leak-proof / well isolated to prevent poisons and choking gas leaking to inside.
- (7) Thermal comfort conditions must be provided to refuges to prevent any health or safety problems.
- (8) Inside the chamber, oxygen, carbon dioxide, carbon monoxide and temperature levels should not harm the refuges. Acceptable levels are: Minimum %19 O₂, maximum 50 ppm CO and maximum %0.5 CO₂. Sensible temperature shouldn't pass the 35 C. Oxygen, carbon dioxide, carbon monoxide, temperature levels must be monitored with fixed or portable devices
- (9) First aid kit must be inside the chamber. Content of the kit must be determine by on-site doctor in the mine.
- (10) According to capacity and standalone operation time in emergency mode, sufficient amount of water must be stored in chamber. With on-site doctor advice, employer can store dry-food in chambers.
- (11) Between refuge chambers and surface there must be visual-voice communication line.
- (12) Regarding to location in the mine, refuge chamber can be permanent or portable type.
- (13) Refuge chambers must be equipped with portable toilet, seating, fire extinguishers and suitable portal window (should have protection against explosion, impact and heat) to observe outside.
- (14) Surrounding are must be clear of obstructions (equipment or machinery)
- (15) Design of the portable refuge chamber must be enabled to transport of the unit.
- (16) To prevent licking the contaminated air to inside the chamber, there must be positive pressure system.
- (17) Refuge chamber should have audible alarm, warning strobes and reflective signage placed on outside.
- (18) Portable refuge chambers must have an emergency escape hatch placed (located on different side than main door). Main door should open to outward.

(19) Refuge chamber and its components must be made of non-flammable material.

ITEM 7 –

(1) Check and maintenance schedules, persons who can able to conduct these works and required documents are indicated below;

a) After commissioning or relocating the refuge chambers, necessary checks must be done according to manufacturer documents. Turkish language user guide must be provided by manufacturer. A document must be prepare to show that unit has set up correctly, it's safe and all technical specs are compatible with bylaw 6. Also it must be conforms to user manual.

b) All checks and maintenance works must be done according to user manual. Even it is more than 6 months, these checks and maintenance works must be done in every 6 months. A document must be prepare to declare that unit is safe and conform to requirements in bylaw 6.

c) If unit was out of order long time, any accident happened in jobsite or unit was faulty, unit must be checked again before start to operation. A document must be prepare to declare that unit is safe and conform with requirements in bylaw 6.

ç) Maintenance must be done at specified times written in manuals. Maintenance can be done by experienced and trained persons authorized by manufacturer or mine employer.

d) Documents prepared after check and maintenance work must be recorded and stored. These documents must be submit when authorities requested them.

ITEM 8 – (1) Employer must provide sufficient information to all employees about location of chambers and how to operate them.

(2) Employer should place an informative document inside to chamber about basic operating procedures and simple fault finding-trouble shooting instructions. This guide must be prepared based on manufacturer user guide. All these instructions must be stored inside the chamber.

(3) All instruction and user guides must be simple and easy to understand.

(4) Refuge chambers should be include to emergency exercises-drills.

(5) Person who will make check and maintenance in jobsite should take the first training from manufacturer or company which commissioned the units. Next trainings should conduct every 6 months. Trainers will be chosen by employer. In every shift at least one trained person who took this training must be in the jobsite.

Refuge chambers already operating in jobsites and transition process

TEMPORARY ITEM – (1)

Employer; jobsites which operating the refuge chambers before the date of this notification should complete the adaptation of their refuge chambers to new regulations until 1.7.2018

Enforcement-Validity

ITEM 9 – (1) This notification will come into force on 1.7.2018.

Executive

ITEM10 – (1) Executive authority of this Provision of notification is ministry of labor and social security.