**Section 220.20 Surface Installations**

a) Surface Installations; General.

1) All mine structures, enclosures, equipment, and other facilities (including coal preparation plants, facilities used in the work of preparing coal, construction areas, offices, shops, docks, garages, and laboratories) shall be maintained in good repair to prevent accidents and injuries to miners.

2) The methane content in the air of any coal handling or storage facility shall be maintained at less than 1.0 volume per centum. At any time, the air in any structure, enclosure, or other facility shall contain not less than 19.5 volume per centum of oxygen, not more than 0.5 volume per centum of carbon dioxide, and no harmful quantities of other noxious or poisonous gases; and the volume of air shall be sufficient to dilute, render harmless, and to carry away flammable, explosive, noxious, and harmful gases and smoke.

b) Tests for methane; qualified person; use of approved device.

 Tests for oxygen deficiency or for methane in structures, enclosures, or other facilities in which coal is handled or stored shall be made by a person qualified to conduct such tests, and shall be made with a flame safety lamp or other device approved by the Department. Such tests shall be conducted at least once (1) during each operating shift, and immediately prior to any repair work in which welding or an open flame is used, or a spark may be produced.

c) Dust accumulations in surface installations.

 Coal dust in the air of, or in, or on the surfaces of, structures, enclosures, or other facilities shall not be allowed to exist or accumulate in dangerous amounts.

d) Use of material or equipment overhead; safeguards; warning signs.

 Where overhead repairs are being made at surface installations or on surface equipment, and equipment or material is taken into such overhead work areas, adequate protection shall be provided for all persons working or passing below the overhead work areas in which such equipment or materials is being used. Warning signs shall be posted prominently in the area, which signs shall state "Danger-Men Working Above" or the equivalent.

e) Openings in surface installations; safeguards.

 Openings in surface installations through which men or material may fall shall be protected by railings, barriers, covers, or other protective devices.

f) Travelways at surface installations.

1) Safe means of access shall be provided and maintained to all working places.

2) Travelways and platforms or other means of access to areas where persons are required to travel or work, shall be kept clear of all extraneous material and other stumbling or slipping hazards.

3) Inclined travelways shall be constructed of nonskid material or equipped with cleats.

4) Regularly used travelways shall be sanded, salted, or cleared of snow and ice as soon as practicable.

5) Crossovers, elevated walkways, elevated ramps, and stairways shall be of substantial construction, provided with handrails, and maintained in good condition. Where necessary to insure safety, toe boards shall be provided.

6) Crossovers shall be provided where it is necessary to crossover conveyors.

7) Moving conveyors shall be crossed only at designated crossing points.

8) Crossing under unguarded moving conveyors where contact is possible is prohibited.

g) Ladders; scaffolding; construction; condition, installation, and maintenance.

1) General requirements; ladders & scaffolding.

A) Ladders and scaffolding equipment shall be of substantial construction and maintained in good safe, suitable, and proper condition.

B) Wooden members of ladder shall not be painted.

C) Rungs shall be kept free of grease and oil.

2) Portable ladders; construction, use, and maintenance.

A) Portable ladders shall be so placed as to prevent slipping, or they shall be lashed or held in position. Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.

B) On two (2)-section extension ladders, the minimum overlap for the two (2) sections in use shall be as follows:

|  |  |
| --- | --- |
| SIZE OF LADDER(FEET) | OVERLAP(FEET) |
| Up to and including 36 | 3 |
| Over 36 and up to and including 48 | 4 |
| Over 48 and up to and including 60 | 5 |

C) No ladder shall be used to gain access to a roof or platform unless the top of the ladder extends at least three (3) feet above the point of support, at eave, gutter, roof line, or platform.

D) Ladders shall be inspected before each use for broken rungs, split side rails, loose fastenings, decayed wood, or other defects. Ladders with defects shall not be used.

E) Portable aluminum ladders shall not be used when working on or near energized electrical equipment.

3) Fixed ladders.

A) Steep, vertical, or any other ladder which inclines backwards at any point shall be anchored securely and provided with back guards or equivalent safety protection extending from a point not more than seven (7) feet from the bottom of the ladder to the top of the ladder.

B) Ladders shall extend at least three (3) feet above the landing or substantial handholds shall be provided above the landing.

C) Ladders shall be anchored securely and installed to provide at least three (3) inches of toe clearance.

D) Men climbing or descending ladders shall face the ladders and have both hands free for climbing.

h) Scaffolding; general.

1) The footing or anchorage for scaffolds shall be sound, rigid, and capable of carrying the maximum intended load without settling or displacement. Unstable objects such as barrels, boxes, loose brick, or concrete blocks shall not be used to support scaffolds.

2) No scaffold shall be erected, moved, dismantled, or altered except under supervision of a person experienced in performing such work.

3) Guardrails and toeboards shall be installed on all open sides and ends of platforms more than six (6) feet above the ground or floor.

4) Scaffolds and their components shall be capable of supporting at least four (4) times the weight of the actual load.

5) Any scaffold, including accessories such as braces, brackets, trusses, screw legs, and ladders, damaged or weakened from any cause shall be immediately repaired or replaced.

6) All planking or platforms shall be overlapped (minimum twelve (12) inches) or secured from movement.

7) Scaffold planks shall extend over their end supports not less than six (6) inches and not more than twelve (12) inches.

8) The poles, legs, or uprights of scaffolds shall be securely and rigidly braced to prevent swaying and displacement.

9) Overhead protection shall be provided for men on a scaffold exposed to overhead hazards.

10) Slippery conditions on scaffolds shall be eliminated prior to work being performed on such scaffolds.

11) No welding, burning, riveting, or open flame work shall be performed on any staging suspended by means of fiber or syntheic rope. Only treated or protected fiber or synthetic rope shall be used for or near any work involving the use of corrosive substances or chemicals.

12) Wire, synthetic, or fiber rope used for scaffold suspension shall be capable of supporting six (6) times the applied load.

13) Scaffolds shall otherwise be erected, constructed and maintained in manner consistent with the laws and regulations of the State of Illinois, including, without limitation, "An Act providing for the protection and safety of persons in and about the construction, repairing alteration, or removal of buildings, bridges, viaducts, and other structures, and to provide for the enforcement thereof" (Ill. Rev. Stat. 1981, ch. 48, pars. 60 et seq.)

i) Illumination.

Illumination sufficient to provide safe working conditions shall be provided in and on all surface structures, paths, walkways, stairways, switch panels, loading and dumping sites, and working areas.

j) Testing for leaking; compressed gas cylinders.

Tests for leaks on the hose valves or guages of liquefied and nonliquefied compressed gas cylinders shall only be made with a soft brush and soapy water or soap suds.

k) Storage of materials.

1) Materials shall be stored and stacked in a manner which minimizes stumbling or fall-off-material hazards.

2) Materials that can create hazards if accidentally liberated from their containers shall be stored in a manner that minimizes the dangers.

3) Hazardous materials shall be stored in containers of a type approved for such use by recognized agencies; such containers shall be labeled appropriately.

4) All compressed gas cylinders, including oxygen cylinders, and liquid gas cylinders, including acetylene cylinders, shall be secured in a safe manner, and shall be stored in an upright position.

5) Valves on compressed gas cylinders shall be protected by covers when being transported or stored, and by a safe location when the cylinders are in use.

l) Surge bins and storage or surge piles.

 No person shall be permitted to walk or stand immediately above a reclaiming area or in any other area at or near a surge bin or storage or surge pile, where the reclaiming operation may expose him to a hazard.

m) Hoisting of materials; rigging equipment for material handling.

1) Hoisting of materials.

A) Hitchings and slings used to hoist materials shall be suitable for handling the type of materials being hoisted.

B) Men shall stay clear of hoisted loads.

C) Taglines shall be attached to hoisted materials that require steadying or guidance.

2) Rigging equipment.

A) Slings, chains, and other equipment used for material handling shall be inspected immediately prior to each use. Defective rigging equipment shall be removed from service.

B) Rigging equipment shall not be loaded in excess of its safe working load.

n) Draw-off tunnels; stockpiling and reclaiming operation; general.

1) Tunnels located below stockpiles, surge piles, and coal storage silos shall be ventilated so as to maintain concentrations of methane below 1.0 volume per centum.

2) In addition to the tests for methane required by Section 220.20(b) of this Part, such tests shall also be made before any electric equipment is energized or repaired, unless equipped with a continuous methane monitoring device installed and operated in accordance with the provisions of Section 220.20 of this Part. Electric equipment shall not be energized, operated, or repaired until the air contains less than 1.0 volume per centum of methane.

o) Continuous methane monitoring device; Installation and operation; automatic deenergization of electric equipment.

Continuous methane monitoring devices shall be set to deenergize automatically electric equipment when such monitor is not operating properly, and to give a warning automatically when the concentrations of methane reaches a maximum percentage as determined by an authorized representative of the Department, which maximum percentage shall not be more than 1.0 volume per centum of methane. An authorized representative of the Department shall require such monitor to deenergize automatically electric equipment when the concentration of methane reaches a maximum percentage as determined by such representative, which maximum percentage shall not be more than 2.0 volume per centrum of methane.

p) Draw-off tunnel ventilation fans; installation.

When fans are used to ventilate draw-off tunnels the fans shall be:

1) Installed on the surface;

2) Installed in fireproof housings and connected to the tunnel openings with fireproof air ducts; and

3) Offset from the tunnel opening.

q) Draw-off tunnel escapeways.

When it is necessary for a tunnel to be closed at one end, an escapeway not less than thirty (30) inches in diameter (or of the equivalent, if the escapeway does not have a circular cross-section) shall be installed which extends from the closed end of the tunnel to a safe location on the surface; and, if the escapeway is inclined more than thirty (30) degrees from the horizontal it shall be equipped with a ladder which runs the full length of the inclined portion of the escapeway.

r) Refuse piles; general.

1) All refuse piles shall be located in areas which are a safe distance from all underground mine airshafts, preparation plants, tipples, or other surface installations and such piles shall not be located over abandoned openings or steamlines.

2) Where new refuse piles are constructed over exposed coal beds the exposed coal shall be covered with clay or other inert material as the piles are constructed.

3) A fireproof barrier of clay or inert material shall be constructed between old and new refuse piles.

4) Roadways to refuse piles shall be fenced or otherwise guarded to restrict the entrance of unauthorized persons.

5) All refuse piles shall otherwise conform to the standards contained in relevant laws and regulations of the State of Illinois and the United States of America.

s) Refuse piles; construction requirements.

1) Refuse deposited on a pile shall be spread in layers and compacted in such a manner so as to minimize the flow of air through the pile.

2) Refuse shall not be deposited on a burning pile except for the purpose of controlling or extinguishing a fire.

3) Clay or other sealants shall be used to seal the surface of any burning refuse pile.

4) Surface seals shall be kept intact and protected from erosion by drainage facilities.

5) Refuse piles shall not be constructed to as to impede drainage or impound water.

6) Refuse piles shall be constructed in such a manner as to prevent accidental sliding and shifting of materials.

7) No extraneous combustible material shall be deposited on refuse piles.

8) All refuse piles shall otherwise conform to the construction standards contained in relevant laws and regulations of the State of Illinois and the United States of America.

t) Retaining dams; construction; inspection; records.

1) If failure of a water or silt retaining dam will create a hazard, it shall be of substantial construction and shall be inspected at least once each week.

2) Weekly inspections conducted pursuant to paragraph (t)(1) above shall be conducted by a person qualified to conduct and report on such inspections, which person shall be designated by the operator. Such weekly reports shall be approved and signed by the certified person responsible for the overall supervision of the mine. The record of such inspections shall be kept at the mine for at least three (3) years in a suitably-bound book provided by the operator for such purposes, and such record shall be available at all times for review by any authorized representative of the Department.

u) Amendments and additions to the Federal rules on refuse piles and impounding structures, adopted by Mining Enforcement and Safety Administration, and effective November 1, 1975.

 All those amendments and additions to the Federal rules regarding refuse piles and impounding structures, which amendments and additions were made effective November 1, 1975 by the Mining Enforcement and Safety Administration and the United States Department of Interior, and which rules are found 30 CFR 77; 215; 215-1; 215-2; 215-3; 215-4; 216; 216-1; 216-2; 216-3; 216-4; 216-5 and 217 are hereby incorporated by reference and made a permanent part of these rules.