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COMPILED BY MIDWEST REGION
U. S. Department of Labor
Bureau of Labor Standards

PLAINTIFF'S EXHIBIT

UC-1769

1. ABRASIVE BLASTING UNITS
A deadman control device shall be provided at the nozzle end of the blasting hose to cut off the flow in the event the blaster loses control of the hose. 50-204.2 - USDL, (CFR) Title 29 Part 1501

2. ABRASIVE GRINDING
a. All abrasive wheel bench and stand grinders shall be provided with safety guards which cover the spindle ends, nut and flange. 50-204.2 - ANSI B7.1
b. Adjustable work rest of rigid construction shall be used on fixed base, offhand grinding machines with the work rest kept adjusted to a maximum clearance of 1/8 inch between rest and wheel. 50-204.2 - ANSI B7.1
c. Stationary grinding machines used for dry grinding, or other dust producing grinding, shall be provided with an exhaust system. 50-204.2 - ANSI B7.1 & Z43.1

3. AIR RECEIVERS, COMPRESSED
a. All air receivers 18" or more in diameter shall be provided with inspection openings. 50-204.2 - ANSI B19
b. All air receivers shall be supported with sufficient clearance to permit a complete external inspection and to avoid corrosion of external surfaces. 50-204.2 - ANSI B19
c. Air receivers shall be installed so that drains, handholes, and manholes are easily accessible. 50-204.2 - ANSI B19
d. Every air receiver shall be equipped with an indicating pressure gauge, so located as to be readily visible, and with one or more springloaded safety valves. 50-204.2 - ANSI B19

4. AIR TOOLS
The operating mechanism on portable air tools shall be so arranged to close the air inlet valve automatically when the pressure of the operator's hand is removed. 50-204.2 - ANSI B19

5. AISLES AND PASSAGEWAYS
Aisles and passageways shall be kept clear and in good repair with no obstructions across or in aisles that might create a hazard to personnel or in the operation of vehicles. 50-204.3(a)

6. BELT SANDING MACHINES
a. All belt sanding machines shall be provided with guards at each nip point where the sanding belt runs onto a pulley. 50-204.2 - ANSI O1.1
b. The unused run of the belt on sanding machines shall be guarded against accidental contact. 50-204.2 - ANSI O1.1

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7. BELTS, DRILL PRESS

The V-belt drive of all drill presses, including the usual front and rear pulleys, shall be guarded to protect the operator from contact or breakage. 50-204.2 - ANSI B15.1

8. BOILERS

a. Boiler inspection and approval on an annual basis by a recognized boiler inspection service is satisfactory evidence of acceptable installation and maintenance. 50-204.2 - ASME Boiler & Pressure Vessel Code

b. A valid boiler inspection certificate bearing the signature of the authorized inspector and the date of the last inspection shall be conspicuously posted. 50-204.2 - ASME Boiler & Pressure Vessel Code

c. All boilers shall be equipped with approved-type water columns, gauge glass and try cocks. Gauge glasses and water columns shall be guarded to prevent breakage. 50-204.2 - ASME Boiler & Pressure Vessel Code

9. CALENDARS, MILLS AND ROLLS

Fixed guards or a safety trip type bar, rod or cable to activate an emergency stop switch shall be installed on calendars, rolls or mills to prevent persons or parts of the body from being caught between the rolls. 50-204.2 & .5 - ANSI B28.1

Blacklight Room & PRU Room

10. CHLORINATED HYDROCARBONS

a. Carbon tetrachloride or other chlorinated (halogenated) hydrocarbons should not be used in confined spaces or where the TLV exceeds those listed. 50-204.50

b. Fire extinguishers using chlorobromomethane(CB) or other chlorinated (halogenated) hydrocarbons shall not be used in small rooms, closets, motor vehicles, or other such confined spaces. 50-204.2 - NFC Vol. 8

11. CHAINS, CABLES, ROPES, ETC.

a. Chains, cables, ropes, slings, etc., should be inspected daily and defective gear should be removed and repaired, or replaced. 50-204.2 - USDL, (CFR) Title 29 Part 1501

b. Chains and chain slings shall not be used with a kink or knot in them or shall not be shortened by knotting, wiring, bolting, etc. 50-204.2 - USDL, (CFR) Title 29 Part 1501

c. All U-bolt wire rope clips installed on wire rope shall be installed so that the U-bolt is in contact with the dead end (short or non-load carrying end) of the rope. Clips shall be installed in the number recommended for the size rope, 1/4" to 5/8" W/3 clips; 3/4" to 1" W/4 clips; 1-1/8" to 1-1/4" W/5 clips, and 1-3/8" to 1½" W/6 clips; and the clips shall be spaced a minimum distance of six times the diameter of the rope. 50-204.2 - USDL, (CFR) Title 29 Partt 1501

d. Protruding ends of strands of wire should be covered or blunted. 50-204.2 - USDL, (CFR) Title 29 Part 1501

12. CHIP GUARDS

Protective shields and barriers shall be provided to protect personnel against flying chips or other such hazards. 50-204.77

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13. COMPRESSED AIR, USE OF

Compressed air shall not be used for cleaning purposes except where reduced to less than 30 p.s.i. and then only with effective chip guarding and personal protective equipment. 50-204.8

14. CONE PULLEYS

The cone belt and pulley should be equipped with a belt shifter so constructed as to adequately guard the nip point of the belt and pulley. 50-204.2 & .5 - ANSI B15.1

15. CONVEYORS

a. Conveyors installed within seven feet of the floor or walkway shall be provided with cross-overs at aisles or other passageways. 50-204.2 - ANSI B20.1

b. Where conveyors, seven feet or more above the floor, pass over working areas, aisles or thoroughfares, suitable guards shall be provided to protect personnel from the hazard of falling materials. 50-204.2 - ANSI B20.1

c. Open hoppers and chutes shall be guarded by standard guardrails and toeboards or some other comparable safety device. 50-204.2 - ANSI B20.1

16. COTS FOR FEMALES

a. Where 10 to 100 women are employed at any one time, a retiring room shall be provided with at least one bed or couch (cot). 50-204.2 - ANSI Z4.1

b. Where 100 to 250 women are employed at least one retiring room shall be provided with two beds or couches (cots). 50-204.2 - ANSI Z4.1

c. Where less than 10 women are employed and a rest (retiring) room is not furnished; some equivalent space shall be provided which can be screened for privacy. 50-204.2 - ANSI Z4.1

17. CRANES AND HOISTS

a. Cranes, hoists and gear and equipment, shall be inspected regularly and written inspection records and reports, properly dated and signed, shall be kept. 50-204.2 - ANSI B30.2.0

b. The travel or trolley trucks of traveling cranes shall be provided with rail sweeps to clear tracks in front of the truck wheels. 50-204.2 - ANSI B30.2.0

c. Cab and/or pulpit operated cranes shall be operated only by personnel meeting both operating ability and physical qualifications. 50-204.2 - ANSI B30.2.0

d. Crane hooks shall be inspected periodically to see that they have not been bent by overloading, and hooks that have opened or are bent shall not be used. 50-204 - USDL, (CFR) Title 29 Part 1501

e. The upper hook of hoists shall be moused or otherwise secured against coming free of its support. 50-204.2 - USDL, (CFR) Title 29 Part 1501

18. CYLINDERS, COMPRESSED GAS

a. Compressed gas cylinders shall not be stored near elevators or where heavy or moving objects may strike or fall on them, nor shall they be stored in areas of excessive heat (above 125°F.) 50-204.2 - ANSI Z49.1

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18. CYLINDERS, COMPRESSED GAS (Continued)

b. Compressed gas cylinders should not be stored near combustible or highly flammable material. 50-204.2 - ANSI Z49.1

c. Compressed gas cylinders must be properly supported at all times, and valve protection caps must remain in place when cylinders are not in use. 50-204.2 - ANSI Z49.1

d. Empty cylinders should be marked EMPTY and returned to storage promptly. 50-204.2 - ANSI Z49.1

19. DOCK BOARDS

a. Dock boards shall be structurally sound for the use intended and shall be secured in position. 50-204.2 - ANSI B56.1

b. The sides of all dock boards should be turned up at right angles, or other means provided to prevent running off the edge. 50-204.2 - ANSI B56.1

20. DRAINS

a. Emergency drainage systems shall be provided to direct flammable liquid leakage and sprinkler fire protection water to a safe location. 50-204.2 - NFC Vol. 1

b. Emergency drainage systems for flammable liquids, if connected to public sewers or discharged into public waterways, shall be equipped with traps or separators. 50-204.2 - NFC Vol.1

21. DRINKING WATER

a. An adequate supply of potable water shall be provided for drinking purposes and should be made available within 200 feet of any location at which employees are regularly engaged at work. 50-204.2 - ANSI Z4.1

b. The nozzle of a drinking fountain shall be set at an angle such that the jet of water will not splash back down on the nozzle, and the end of the nozzle should be protected by a guard to prevent a person's mouth or nose from coming in contact with the nozzle. 50-204.2 - ANSI Z4.2

c. Under conditions where installation of a drinking fountain is not feasible, an approved portable container may be used. Unused disposable cups shall be kept in a sanitary container and a receptacle shall be provided for used cups. 50-204.2 - ANSI Z4.1

22. DUST EXPLOSION PREVENTION

Construction design and materials, installation and maintenance of equipment, housekeeping, and control of dusts must be in accordance with regulations for prevention of dust explosion. 50-204.2 - ANSI Z12

23. ELEVATORS

a. Elevator inspection by a competent inspection service is acceptable evidence of satisfactory installation and maintenance. 50-204.2 - ANSI Z17.2

b. All hoistway openings at floor level shall be protected by doors or gates that are interlocked with the controls so that the car cannot be started until all gates or doors are closed and so that gates or doors cannot be opened when the car is not at the landing. 50-204.2 - ANSI A17.1

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24. ELECTRICAL INSTALLATIONS
All electrical conductors and equipment shall be installed and maintained in accordance with the minimum requirements set forth in the National Electrical Code. 50-204.2 - NFC Vol. 5 & ANSI C1

25. EMERGENCY FLUSHING, EYES & BODY
Suitable facilities for quick drenching or flushing of the eyes or body shall be provided for emergency use within the area where the eyes or body of any person may be exposed to injurious corrosive materials. 50-204.6(a)

OK

26. EXITS
a. Not less than two exits, other than ladders and elevators, as remote from each other as possible, shall be provided for all floors or sections where persons are employed. (Note exceptions 14-2116 and 14-2152; High Hazard Occupancy 14-4221) 50-204.2 - NFC Vol. 4
b. Exits shall be so located and exit access shall be so arranged that exits are readily accessible at all times. (Travel distance, 14-216 and 14-4231) 50-204.2 - NFC Vol. 4
c. Required (in accordance with a.) exit doors shall swing in the direction of exit and open so as not to obstruct other passageways. 50-204.2 - NFC Vol. 4
d. Every externally illuminated exit sign shall be distinctive in color and shall have the word "EXIT" in plainly legible letters not less than 6" high. 50-204.2 - NFC Vol. 4
e. Access to exits shall be marked by readily visible signs in all cases where the exit is not immediately visible to the occupants. 50-204.2 - NFC Vol. 4
f. Exit doors shall be arranged so as to be readily opened from the egress side during times of occupancy. Locks, if provided, shall not require the use of a key from the inside of the building. 50-204.2 - NFC Vol. 4

Remove Door between ≥ labs.

27. EXPLOSIVES
a. Smoking, open flames or any spark producing devices shall not be permitted inside of or within 50 feet of explosive storage magazines. 50-204.2 - NFC Vol. 3
b. Areas surrounding an explosive storage magazine shall be kept clear of combustible materials for a distance of at least 25 feet and combustible materials shall not be stored within 50 feet of magazines. 50-204.2 - NFC Vol. 3
c. Explosive magazines shall be posted with appropriate warning signs. 50-204.2 - NFC Vol. 3

28. EYE PROTECTION
Eye protection in the form of appropriate goggles, face shields, etc., shall be provided for and used by employees exposed to any hazard which may cause injury to the eyes. 50-204.7

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29. FAN BLADES
When the periphery of the blades of a fan is less than seven feet above the floor or working level, the blades shall be guarded. The guard shall have openings no larger than one-half inch. 50-204.5(e)

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30. FIRE DOORS

a. Fire doors shall not be blocked or tied in an open position. 50-204.2 - NFC Vol. 4

b. Fusible links for fire doors shall be located so as to properly function in case of fire and shall not be painted. 50-204.2 - NFC Vol 4

c. Three 3" diameter vent holes, cut through the metal only, are required for tin-clad fire doors up to 9 feet in height. (An additional vent hole is required for doors from 9 feet to 12 feet 4 inches in height). The metal covering around the opening shall be secured with small nails and the exposed wood thoroughly painted. 50-204.2 - NFC Vol. 4

d. A closing device shall be installed on every fire door except elevator and power-operated dumbwaiter doors equipped with electric contacts or interlocks. 50-204.2 - NFC Vol. 4

31. FIRE ESCAPE STAIRS

a. Fire escape stairs may be used as required means of exit only in existing buildings, but shall not constitute more than 50% of the required exit capacity in any case. 50-204.2 - NFC Vol. 4

b. Fire escape stairs shall provide a continuous unobstructed safe path to the ground or other safe area of refuge to which they lead. 50-204.2 - NFC Vol. 4

32. FIRE FIGHTING

a. Fire fighting equipment suitable to the conditions and hazards involved shall be provided and maintained in an effective operating condition. 50-204.2 - NFC Vol. 8

b. Portable fire extinguishers shall be conspicuously located and mounted where they will be readily accessible. Extinguishers shall not be obstructed or obscured from view. 50-204.2 - NFC Vol. 8

c. Portable fire extinguishers shall be given a maintenance inspection at least once a year with a durable tag securely attached to show the maintenance or recharge date. 50-204.2 - NFC Vol. 8

d. Every high hazard occupancy shall have automatic sprinker protection or such other protection as may be appropriate to the particular hazard. 50-204.2 - NFC Vol. 6

e. Sprinklers should be checked regularly to make sure they are free from corrosion or loading, not painted and not bent or damaged. 50-204.2 - NFC Vol. 6

f. Sprinklers, clearance - See STORAGE

33. FLAMMABLE LIQUIDS

a. Flammable liquids shall be kept in covered containers when not actually in use. 50-204.2 - NFC Vol. 1

b. The quantity of Class IA, flash point below 73°F, liquid that may be located outside of an inside storage room or storage cabinet shall not exceed 25 gallons. 50-204.2 - NFC Vol. 1

c. Class I, flash point below 100°F, liquids shall not be dispensed into containers unless the container and nozzle are electrically interconnected. 50-204.2 - NFC Vol. 1

BRF 0200

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33. FLAMMABLE LIQUIDS (Continued)

d. Not more than 60 gallons of flammable, flash point below 140°F, or 120 gallons of combustible, flash point at or above 140°F, liquid may be stored in a storage cabinet. 50-204.2 - NFC Vol. 1

e. Class I, flash point below 100°F, liquids may be used only where there are no open flames or other sources of ignition within the possible path of vapor travel. 50-204.2 - NFC Vol. 1

f. Areas where Class I, flash point below 100°F, liquids are handled or used shall be ventilated at a rate of not less than one cubic foot per minute per square foot of solid floor area. 50-204.2 - NFC Vol. 1

g. Outside flammable storage areas shall be protected against tampering or trespassers where necessary and shall be kept free of weeds, debris and other combustible material not necessary to the storage. 50-204.2 - NFC Vol. 1

34. FLOOR LOADING LIMITS

All floors, other than those resting directly on solid ground, when heavily loaded shall be posted to show maximum safe floor loads. 50-204.2 - ANSI A58.1

35. FLOOR OPENINGS, HATCHWAYS, ETC.

a. Floor openings shall be covered with a suitable cover or provided with a standard railing. 50-204.2 - ANSI A12.1

b. Open-sided floors, platforms, etc., four feet or more above the adjacent floor or ground level shall be guarded by a standard railing on all open sides. 50-204.2 - ANSI A12.1

c. Wherever persons may pass, where there is moving machinery, or where there is equipment with which falling materials would create a hazard, standard toeboards shall be required. 50-204.2 - ANSI A12.1

d. Where operations require the feeding of material into a chute or hatchway, protection shall be provided to prevent a person from falling through the opening. 50-204.2 - ANSI A12.1

36. FLOORS, GENERAL CONDITIONS

a. All floor surfaces shall be kept clean, dry, and free from protruding nails, splinters, loose boards, loose floor covering, holes or projections. 50-204.2 - ANSI Z4.1

b. Tools, materials, or debris shall not be strewn about in a manner which may cause tripping or other hazards. 50-204.2 - USDL, (CFR) Title 29 Part 1501

c. Where the type of operation necessitates working on floor areas that would otherwise be wet or slippery, such areas shall be covered with mats, grates, cleats, or other high friction floor coverings. 50-204.2 - ANSI Z4.1

37. FORKLIFT TRUCKS

a. High Lift rider trucks shall be equipped with a substantial overhead guard unless operating conditions do not permit. 50-204.2 - ANSI B56.1

b. Fork trucks shall be equipped with a vertical load backrest extension when the type of load presents a hazard to the operator. 50-204.2 - ANSI B56.1

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38. GUARDRAILS

a. A standard guardrail shall consist of top rail, intermediate rail and posts having a vertical height of 42 inches from upper surface of top rail to floor, platform, etc. 50-204.2 - ANSI A12.1

b. The top rail of a guardrail shall be smooth-surfaced with a strength to withstand at least 200 pounds of pressure, and the intermediate rail shall be approximately half way between the top rail and floor. 50-204.2 - ANSI A12.1

c. A stair railing shall consist of top rail and intermediate rail with the vertical height from upper surface of top rail to top of forward edge of tread 30 to 34 inches. 50-204.2 - ANSI A12.1

39. GUARDS, CONSTRUCTION OF

Guards shall be metal, except in woodworking industries, or in industries or operations that would cause the rapid deterioration of metal guards, and shall be constructed and installed in accordance with the requirements of the referenced code. 50-204.2 - ANSI B15.1

40. HAND TOOLS - See TOOLS AND EQUIPMENT

41. HOOKS, CRANES, HOISTS, ETC. - See CRANES AND HOISTS

42. HOUSEKEEPING

All places of employment, passageways, storerooms, and service rooms shall be kept clean and orderly and in a sanitary condition. 50-204.2 - ANSI Z4.1

43. JOINTERS

a. Each hand-fed jointer with a horizontal cutting head shall have an automatic guard which will cover the section of the head on the working side of the fence or gauge. 50-204.2 - ANSI O1.1

b. Each hand-fed jointer with horizontal cutting head shall have a guard which will cover the section of the head back of the gauge or fence. 50-204.2 - ANSI O1.1

c. A jointer guard shall automatically adjust itself to cover the unused portion of the head and shall remain in contact with the material at all times. 50-204.2 - ANSI O1.1

44. LADDERS

a. Material and construction for all ladders shall be in accordance with the appropriate referenced code. 50-204.2 - Wood, ANSI A14.1; Metal, ANSI A14.2; Fixed, ANSI A14.3

b. Ladders shall be used only on a stable base and shall be so placed as to prevent slipping, or the ladder shall be lashed or held in position. 50-204.2 - ANSI A14.1 & A14.2

c. Ladders shall be maintained in good condition and defective ladders shall be withdrawn from service. 50-204.2 - ANSI A14.1 & 14.2

d. Wooden ladders should not be painted, as defects in the ladder may be covered. 50-204.2 - ANSI A14.1

e. Stepladders shall be equipped with a metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in open position. 50-204.2 - ANSI A14.1 & A14.2

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44. LADDERS (Continued)

f. Metal ladders shall not be used when working on or exposed to electric circuits. 50-204.2 - ANSI A14.12

g. Cages or wells shall be provided on fixed ladders of more than 20 feet, and landing platforms shall be provided for each 30 feet of height, except tower and chimney ladders. 50-204.2 - ANSI A14.3

h. Tops of cages on fixed ladders shall extend 42 inches above top of landing, unless other acceptable protection is provided, and the bottom of the cage shall be not less than 7 feet, nor more than 8 feet above the base of the ladder. 50-204.2 - ANSI A14.3

i. Rails of fixed ladders without cages or wells, shall extend 42 inches above the landing. 50-204.2 - ANSI A14.3

45. LIGHTING

Adequate illumination, depending upon the seeing tasks involved, shall be provided and distributed to all areas in accordance with the referenced code. (Requirements vary widely, but a good rule-of-thumb is 20 to 30 foot candles for services, and 50 to 100 foot candles for tasks.) 50-204.2 - ANSI A11.1

46. LUNCH SPACE

a. In all places of employment where employees are permitted to lunch on the premises, an adequate space suitable for that purpose shall be provided for the maximum number of employees who may use the space at one time. 50-204.2 - ANSI Z4.1

b. Covered receptacle of corrosion resistant or disposable material shall be provided in lunch areas for disposal of waste food. 50-204.2 - ANSI Z4.1

47. MACHINE GUARDING

One or more methods of machine guarding shall be provided to protect the operator and other employees in the machine area from hazards such as those created by point of operation, in-going nip points, rotating parts, and flying chips or sparks. 50-204.5(a)

48. MACHINERY, FIXED

Machines designed for a fixed location shall be securely anchored to prevent walking or moving. 50-204.5(f)

49. MATS, INSULATING

Where current carrying parts of more than 150 volts to ground are exposed within 8 feet from the floor, all surrounding conducting floors and other conducting surfaces within reach shall be covered with suitable platforms, mats, or other devices. 50-204.2 - ANSI C2.2

50. MEDICAL SERVICES & FIRST AID

a. The employer shall insure the ready availability of medical personnel for advice and consultation on matters of plant health. 50-204.6(a)

b. When medical facilities for treatment of injured employees are not available in near proximity to the work place, a person or persons shall be adequately trained, Red Cross Certificate or equivalent, to render first aid, and first aid supplies shall be readily available. 50-204.6(b)

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51. MOTOR VEHICLES

a. Inspection for motor vehicles operating on public highways, roads, streets, etc., shall be in compliance with the referenced code. 50-204.2 - ANSI D7.1

b. A visual motor vehicle inspection at the minimum, should include a check for worn or defective tires, defective exhaust system, defective lighting system (broken or burned out headlamps, brake lamps, turn signals, tail lamps, clearance and side marker lamps), defective windshield wipers, defective rear view mirrors, etc. 50-204.2 - ANSI D7.1

52. NOISE EXPOSURE

a. Protection against the effects of occupational noise exposure shall be provided when the sound levels exceed those shown in Table I, Part 50-204.10 of the Safety and Health Standards. Engineering and/or administrative controls should be utilized to keep exposure below the allowable limit. 50-204.10

b. When engineering or administrative controls fail to reduce the noise level to within the levels of Table I, Part 50-204.10 of the Safety and Health Standards, personal protective equipment shall be provided and used to reduce the noise to an acceptable level. 50-204.10

c. Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level. 50-204.10

d. In all cases where the sound levels exceed the values shown in Table I, Part 50-204.10 of the Safety and Health Standards a continuing, effective hearing conservation program shall be administered. 50-204.10

e. Table I, Part 50-204.10, Safety and Health Standards:

Duration per Day (Hours)	Sound Level dBA, slow response
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
½	110
¼	115

53. OPEN-SURFACE TANKS

a. Ventilation systems, adequate to prevent the emission of gas, vapor, or mist in quantities sufficient to injure the health, or significantly reduce visibility of personnel, or produce an unsanitary or unsafe condition, shall be provided where open tank operations are being done. 50-204.2 - ANSI Z9.1

b. Where personnel are required to work over open tanks, ventilation should be designed such that hazardous vapors are vented away from the breathing zone. 50-204.2 - ANSI Z9.1

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54. PAINT BOOTH WATERFALL & FILTERS

a. The sludge pit of all water-wash type spray booths shall be frequently cleaned and the system maintained in a manner to assure full screen coverage by the waterfall. 50-204.2 - NFC Vol. 1

b. Spray booth dry filters shall be changed often enough to prevent air flow being reduced below the minimum velocity (100 linear feet per minute over open face of booth) required. 50-204.2 - NFC Vol. 1

c. Visible gauges or audible alarm or pressure-activated devices shall be installed to indicate or insure that the required air velocity is maintained in spray booths. 50-204.2 - NFC Vol. 1

d. Filters or filter rolls shall not be used in spray booths when applying a spray material known to be highly susceptible to spontaneous heating and ignition. 50-204.2 - NFC Vol. 1

e. Spray booths equipped with automatically advanced filter rolls should be arranged to cause shutdown of spraying operations if the filter roll fails to advance. 50-204.2 - NFC Vol. 1

55. PAINT OR OTHER FLAMMABLES SPRAYING OPERATIONS

a. All spraying areas shall be provided with mechanical ventilation adequate to remove flammable vapors, mists or powders to a safe location and to confine and control combustible residues so that life is not endangered. 50-204.2 - NFC Vol. 1

b. No open flame or other spark-producing equipment shall be located within a flammable materials spraying area nor within 20 feet of the operation unless separated by a partition. 50-204.2 - NFC Vol. 1

c. All electric lights, switches, etc., located within a flammable materials spraying area, shall be explosion-proof types. 50-204.2 - NFC Vol. 1

d. Electric motors driving exhaust fans shall not be placed inside flammable materials spray booths or ducts, and belts or pulleys within the booth or duct, shall be thoroughly enclosed. 50-204.2 - NFC Vol. 1

e. Conspicuous "NO SMOKING" and "NO WELDING or Other Hot Work" signs should be posted at all flammable materials spraying areas and storage rooms. 50-204.2 - NFC Vol. 1

f. Workrooms or booths where spraying operations are performed shall be maintained so as to prevent the accumulation of residues on surfaces to the extent that an unsanitary or unsafe condition is produced. 50-204.2 - NFC Vol. 1

g. Space within the upstream and downstream sides of filters in flammable materials spray booths shall be protected with approved automatic sprinklers. 50-204.2 - NFC Vol. 1

56. PERSONAL PROTECTIVE EQUIPMENT

a. Proper personal protective equipment, including shields and barriers, shall be provided, used and maintained in a sanitary and reliable condition where there is a hazard, by reason of processes or environment, that may cause injury or illness to the employee. 50-204.7

b. Where employees furnish their own personal protective equipment, the employer shall be responsible to assure its adequacy and to insure that the equipment is properly maintained and in a sanitary condition. 50-204.7

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57. PORTABLE ELECTRIC TOOLS
See TOOLS & EQUIPMENT

58. PRESSURE VESSELS, PORTABLE UNFIRED
a. All portable unfired pressure vessels should be designed and constructed to meet the Standards of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII. 50-204.2 - ANSI B19 & USDL, (CFR) Title 29 Part 1501
b. Portable unfired pressure vessels not built to code shall be examined quarterly by a competent person and subjected yearly to a hydrostatic pressure test of one and one-half times the working pressure of the vessel. Records of such examinations and tests shall be maintained. 50-204.2 - USDL, (CFR) Title 29 Part 1501
c. Relief valves on pressure vessels shall be set to the safe working pressure of the vessel, or to the lowest safe working pressure of the system, whichever is lower. 50-204.2 - USDL, (CFR) Title 29 Part 1501

59. POWER TRANSMISSION, MECHANICAL
a. All belts, pulleys, chains, flywheels, shafting and shaft projections, or other rotating or reciprocating parts within seven feet of the floor or working platform shall be effectively guarded. 50-204.2 - ANSI B15.1
b. Overhead horizontal belts, chains or link belts more than seven feet above the floor or platform shall be guarded if (1) located over passageways or work places and traveling 1800 feet or more per minute, (2) center to center distance between pulleys is ten feet or more, or (3) belt is eight inches or more in width. 50-204.2 - ANSI B15.1

60. PUNCH PRESSES
a. All punch presses shall be equipped with a guard or device at the point of operation, designed and constructed so that it is impossible for the operator to place or permit his hand or fingers to remain within the danger zone created by the movement of the ram. 50-204.2 - ANSI B11.1
b. A substantial guard should be placed over the treadle of foot-operated presses. 50-204.2 - ANSI B11.1
c. Pedal counterweights, if provided on foot-operated presses, shall have the path of the travel of the weight enclosed or guarded. 50-204.2 - ANSI B11.1

61. RADIATION
a. Employers shall be responsible for proper controls to prevent any employee from being exposed to radiation, either ionizing or electromagnetic, in excess of acceptable limits. 50-204, Subpart C
b. Each radiation area shall be conspicuously posted with appropriate signs and/or barriers. 50-204, Subpart C
c. Every employer shall maintain records of the radiation exposure of all employees for whom personnel monitoring is requested. 50-204, Subpart C

62. RAIL SWEEPS - See CRANES AND HOISTS

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63. REVOLVING DRUMS
Revolving drums, barrels, or other such type containers shall be guarded by an interlocked enclosure that will prevent the drum, etc. from revolving unless the guard enclosure is in place. 50-204.5(d)

64. SAWS, BAND
All portions of band saw blades shall be enclosed or guarded except for the working portion of the blade. 50-204.2 & .5 - ANSI 01.1

65. SAWS, PORTABLE CIRCULAR
All portable power-driven circular saws shall be equipped with guards above and below the base plate or shoe. The lower guard shall cover the saw to the depth of the teeth and shall automatically return to the covering position when the blade is withdrawn from the work. 50-204.2 - ANSI 01.1

66. SAWS, SWING OR SLIDING CUT-OFF
a. All swing or sliding type cut-off saws shall be equipped with a guard and a device to automatically return the saw to the back of the table when released. 50-204.2 - ANSI 01.1
b. Limit stops shall be provided to prevent swing or sliding type cut-off saws from extending beyond the front or back edges of the table, and a latch or equivalent device provided to prevent the saw from rebounding upon its return to the rear of the table. 50-204.2 - ANSI 01.1
c. When the nature of the work is such that the teeth of a swing or sliding type cut-off saws extend beyond the edge of the table a suitable guard to prevent contact with the blade shall be provided. 50-204.5

67. SAWS, TABLE
Circular table saws shall be equipped with a hood guard over the blade and with a spreader and non-kickback fingers or dogs when the saw is being used for ripping. 50-204.2 - ANSI 01.1

68. SCAFFOLDS (STAGING)
a. All scaffolds and their supports shall be capable of supporting the load they are designed to carry with a safety factor of at least four. 50-204.2 - ANSI A10.8
b. All planking used for scaffolding shall be "Scaffold Grade" with size and span in accordance with the referenced code. 50-204.2 - ANSI A10.8
c. Scaffold planks shall extend over their end supports not less than 6 inches nor more than 18 inches. 50-204.2 - ANSI A10.8
d. Scaffold planking shall be overlapped a minimum of 12 inches or secured from movement. 50-204.2 - ANSI A10.8
e. Scaffolds more than 10 feet above the ground or floor shall be provided with guardrails, 36" to 42" high with a midrail, on all open sides. 50-204.2 - ANSI A10.8
f. Where there is a hazard of material or equipment falling, scaffolds more than 10 feet above the ground or floor shall be provided with toeboards on all open sides. 50-204.2 - ANSI A10.8

69. SIGNS, "NO SMOKING"
"NO SMOKING" signs shall be posted in areas where flammable liquids, gases, or solids are being stored, used, or dispensed. 50-204.2 - NFC Vol. 1

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70. SQUARING SHEARS

a. All squaring shears shall be provided with a fixed barrier guard in front of the knifehead and maintained in an adjustment to assure that at no time the guard is more than 1/4" above the table (See Figure A20 of code for permissible openings) plus the thickness of the material being worked. 50-204.2 - ANSI B11.1

b. The hold-downs on squaring shears shall either be guarded by the blade guard or separately guarded such that the opening between the guard and the table or material being worked is no more than 1/4 inch. 50-204.5

71. STAIRS

a. Every flight of stairs having four or more risers shall be equipped with standard stair railings. (Vertical height from upper surface of top railing to top of forward edge of tread 30-34 inches) 50-204.2 - ANSI A12.1

b. Open stairs shall have a handrail on either side. 50-204.2 - ANSI A64.1

c. Enclosed stairs 44" or less in width shall have a handrail on one side (preferably on right side descending); stairs 44"-88" shall have a handrail on both sides; and stairs 88" or over shall have a handrail on both sides and an intermediate railing. 50-204.2 - ANSI A12.1

d. Stairs shall be constructed so that rise height and tread width is uniform throughout. 50-204.2 - ANSI A64.1

e. Fixed stairways shall have a minimum width of 22 inches. 50-204.2 - ANSI A64.1

72. STATIONARY ELECTRICAL DEVICES

All stationary electrically powered equipment, tools, and devices, located within reach of a person who can make contact with any grounded surface or object, should be grounded. 50-204.2 - NFC Vol. 5

73. STORAGE

a. All storage shall be stacked, blocked, interlocked, and limited in height so that it is secure against sliding or collapse. 50-204.3(b)

b. Storage areas shall be kept free from accumulation of materials that constitute hazards from tripping, fire, explosion or pest harborage. 50-204.3(c)

c. Where mechanical handling equipment is used, sufficient safe clearances shall be allowed for aisles, at loading docks, through doorways, etc. 50-204.3(a)

d. A minimum clearance of 36" should be maintained between the top of combustible stored material and the lowest overhead beam or structure where automatic sprinklers are not used. 50-204.2 - NFC Vol. 9

e. A minimum clearance of 18" shall be maintained between sprinkler deflectors and the top of stored material, except for high-piled combustible storage where clearance to sprinkler deflectors should be at least 36 inches. 50-204.2 - NFC Vol. 9

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74. TOEBOARDS

a. Floor openings, platforms, scaffolds, etc. shall be equipped with a standard toeboard when underneath (1) persons can pass, (2) there is moving machinery, or (3) there is equipment with which falling materials could create a hazard. 50-204.2 - ANSI A12.1

b. A standard toeboard shall be at least four inches in height and may be of any substantial material either solid or open, with openings not to exceed one inch in greatest dimension. 50-204.2 - ANSI A12.1

75. TOILETS

a. Every place of employment shall be provided with adequate toilet facilities which are separate for each sex. Water closets shall be provided according to the following table: 1 to 9 persons, one facility; 10 to 24 persons, two facilities; 25 to 49 persons, three facilities; 50 to 74 persons, four facilities; 75 to 100 persons, five facilities; over 100 persons, one for each additional 30 persons. 50-204.2 - ANSI Z4.1

b. Toilet facilities shall be provided so as to be readily accessible to all employees. (Not more than one floor to floor flight of stairs and as far as practicable, within 200 feet of locations at which workers are regularly employed.) 50-204.2 - ANSI Z4.1

c. Each water closet shall occupy a separate compartment and should be equipped with a door and latch. 50-204.2 - ANSI Z4.1

d. Adequate washing facilities shall be provided in every toilet room or be adjacent thereto. 50-204.2 - ANSI Z4.1

e. Covered receptacles shall be kept in all toilet rooms used by women. 50-204.2 - ANSI Z4.1

76. TOOLS & EQUIPMENT

a. Each employer shall be responsible for the safe condition of tools and equipment used by employees, including tools and equipment which may be furnished by employees. 50-204.4

b. All hand tools shall be kept in safe condition. Handles of tools shall be kept tight in the tool, and wooden handles shall be free of splinters or cracks. Wedges, chisels, etc., shall be free of mushroomed heads. Wrenches shall not be used when sprung to the point that slippage occurs. 50-204.2 - USDL, (CFR) Title 29 Part 1501

c. The frames of portable electric tools and equipment, except U.L. approved double insulated tools, shall be grounded either through a third wire in the cable containing the circuit conductors or through a separate wire grounded at the source of the current. 50-204.2 - NFC Vol. 5

d. Portable electric tools which are held in the hand shall be equipped with a switch which must be manually held in the closed position. 50-204.2 - USDL, (CFR) Title 29 Part 1501

e. Electric powered tools and equipment showing worn, deteriorated or inadequate insulation, etc. shall be removed from service and repaired or replaced. 50-204.2 - NFC Vol. 5

f. All tools and equipment using "insertable" type tools shall be equipped with a tool retainer. 50-204.2 - ANSI B19

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77. TOXIC VAPORS, GASES, MISTS & DUSTS

a. Exposure to toxic vapors, gases, mists or dusts at a concentration above the Threshold Limit Values contained or referred to in 50-204.50 of the Safety and Health Standards for Federal Supply Contracts, shall be avoided, or protective equipment shall be provided and used. 50-204.50

b. Where protective equipment is needed for protection against toxic materials in addition to feasible engineering or administrative controls, such protective equipment must be approved for each specific application by a competent Industrial Hygienist or other technically qualified source. 50-204.50

78. TRASH (RUBBISH)

a. Trash (rubbish) shall be collected and disposed of as frequently as the circumstances require for reasonable fire safety. 50-204.2 - NFC Vol. 4

b. Trash (rubbish) shall be burned only at designated times and places and under proper supervision. 50-204.2 - NFC Vol. 4

79. TRASH BARRELS

All trash barrels containing waste paper, oily rags, and other flammable or combustible materials shall be of metal and equipped with metal covers. 50-204.2 - NFC Vol. 4

80. VENTILATION

a. Every feasible effort shall be made to provide ventilation adequate to keep the concentration of hazardous vapors, gases, dusts, etc., below the Threshold Limit Value and, in the case of flammable atmospheres, below the Lower Explosive Limit. 50-204.2 & .50 - ANSI Z49.1 & NFC Vol. 1

b. Where nonflammable gases are being used or where operations causing excessive depletion of oxygen are in progress, proper ventilation to prevent an oxygen deficiency shall be provided. 50-204.2 - ANSI Z49.1

81. VEGETATION REMOVAL

Storage areas (particularly flammable storage) shall be kept clear of brush, grass or other vegetation that constitutes a fire hazard. 50-204.3(c)

82. WALKING MACHINERY - See MACHINERY, FIXED

83. WASHING FACILITIES

a. Adequate washing facilities shall be provided in every place of employment and maintained in a sanitary condition. At least one lavatory with adequate hot and cold water shall be provided for every 10 employees up to 100 persons, and one lavatory for each 15 persons over 100. 50-204.2 - ANSI Z4.1

b. A suitable cleansing agent, individual hand towels or other approved apparatus for drying the hands, and receptacles for disposing of hand towels shall be provided at washing facilities. 50-204.2 - ANSI Z4.1

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84. WELDING

a. Mechanical ventilation shall be provided when welding or cutting (1) in a space of less than 10,000 cu.ft. per welder, (2) in a space with an overhead height of less than 16 feet, or (3) in confined spaces where hazardous materials, such as zinc, lead, beryllium, cadmium and mercury are being welded or cut, and where fluxes, weld metal coatings or other materials containing fluorine compounds are used. 50-204.2 - ANSI Z49.1

b. Proper shielding and eye protection to prevent exposure of personnel to ultraviolet and infrared rays shall be provided. 50-204.2 - ANSI Z49.1

c. Proper precautions (isolating welding and cutting, removing fire hazards from the vicinity, providing a fire watch, etc.) for fire prevention shall be taken in areas where welding or other "hot work" is being done. 50-204.2 - ANSI Z49.1

85. WINDOW WASHING

a. Employees cleaning windows shall be provided with approved safety equipment, ladders, scaffolds, belts, etc., by their employer who shall be responsible for the proper use of such equipment. 50-204.2 - ANSI A39.1

b. The building owner, manager, or tenant shall be responsible for equipping the building with approved window cleaner's safety anchors. 50-204.2 - ANSI A39.1

c. Ladders shall be used only where windows cannot otherwise be cleaned safely and practicably, and this method shall not be used to clean windows more than 30 feet above the floor, ground or other surface, or when the ladder is so placed or obstructed as to make the method unsafe. 50-204.2 - ANSI A39.1

d. When a window cleaner is working on a ladder over 18 feet long, it shall be held by a person standing at the foot of the ladder, facing it and holding it with both hands. 50-204.2 - ANSI A39.1

e. Window cleaners working from swinging scaffolds shall be provided with an adequate life line supported separately from the scaffold and its supports. 50-204.2 - ANSI A39.1

86. WIRE ROPE CLIPS - See CHAINS, CABLES, ROPES, ETC.

87. WOODWORKING MACHINERY

All woodworking machinery, such as planers, shapers, lathes, and tenoning and mortising machines shall be effectively guarded to protect the operator or other personnel from hazards such as cutting tools, flying chips, nip points, etc. 50-204.2 & .5 - ANSI O1.1

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88. WORK INJURY RECORDS

a. Records of all injuries to employees, including a brief description of the manner of occurrence shall be available, and records of disabling injury frequency and severity rates shall be maintained. 50-201.502 - ANSI Z16.1

b. Calculation of injury frequency and severity rates should be in accordance with the following:

$$\text{Frequency Rate} = \frac{\text{Number disabling injuries} \times 1{,}000{,}000}{\text{Man hours worked}}$$

$$\text{Severity Rate} = \frac{\text{Total days charged} \times 1{,}000{,}000}{\text{Man hours worked}}$$

Disabling (Lost Time) Injury -

(a) employee is unable to return to work, due to the injury sustained, on the day following the day of injury

(b) injury results in partial or total permanent disability

(c) injury is fatal

Total Days Charged - days (calendar) absent from work due to injury and/or days charged for permanent disability or fatal injury

Man Hours Worked - Total hours worked by all employees 50-201.502 - ANSI Z16.1

Note 3

NOTE: Hazardous conditions or practices not covered in this code digest or in any other Safety and Health Standard incorporated by reference in 50-204.2 may be covered under 50-204.1(d) which states in part, "professionally accepted safety and health practices will be used."

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EAD

INTERNAL CORRESPONDENCE

File — Industrial Hygiene

UNION CARBIDE CORPORATION

CHEMICALS AND PLASTICS

• P. O. BOX 1561, BROWNSVILLE, TEXAS 78520

To (Name) Department Heads
Company
Location

Date November 5, 1970

Originating Dept. Employee Relations Department

Answering letter date

Copy to

Subject Walsh-Healy Standards

Gentlemen:

The attached checklist which has been compiled by the U. S. Department of Labor was obtained by Mr. Byron Vine, Safety Administrator for the Consumer Products Division.

This digest of safety codes and standards is being provided to the Walsh-Healy inspectors.

There are some items in this checklist that should be of interest to each department.

Very truly yours,

Jim

J. L. Friedel

JLF/lw

Att:

BRF 0193

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