

DEPARTMENT OF CONSUMER AND INDUSTRY SERVICES LICENSING AND REGULATORY AFFAIRS

BUREAU OF SAFETY AND REGULATION DIRECTOR'S OFFICE

GENERAL INDUSTRY SAFETY STANDARDS COMMISSION

Filed with the Secretary of State on October 28, 2014

These rules become effective immediately upon filing with the Secretary of State unless adopted under section 33, 44, or 45a(6) of 1969 PA 306. Rules adopted under these sections become effective 7 days after filing with the Secretary of State.

(By authority conferred on the **director of the department of licensing and regulatory affairs** ~~general industry safety standards commission~~ by sections 16 and 21 of ~~1974 Act No. PA 154, of the Public Acts of 1974, as amended, being SS~~ **MCL 408.1016 and 408.1021, of the Michigan Compiled Laws) and Executive Reorganization Order Nos. 1996-2, 2003-18 2003-1, 2008-4, and 2011-4, MCL 408.1016, 408.1021, 445.2001, 445.2011, 445.2025, and 445.2030)**

R 408.16301, R 408.16311, R 408.16313, R 408.16321, R 408.16322, R 408.16325, R 408.16331, R 408.16333, R 408.16336, R 408.16337, R 408.16343, R 408.16344, R 408.16345, R 408.16346, R 408.16347, R 408.16351, R 408.16352, R 408.16353, R 408.16354, R 408.16356, R 408.16361, R 408.16362, R 408.16372, R 408.16375, R 408.16385, R 408.16387, and R 408.16392 of the Michigan Administrative Code are amended, and R 408.16302, R 408.16350, and R 408.16364 are added, and Occupational Health Rules 3303, 3401, 3402, 3503 and 5001 are rescinded, as follows:

PART 63. PULP, PAPER, AND PAPERBOARD MILLS

GENERAL PROVISIONS

R 408.16301 Scope.

Rule 6301. (1) This part sets forth rules to protect the life, limb, and health of the employee in, about, or around places of employment where pulp, paper, and paperboard are is manufactured and converted.

(2) **These rules apply to establishments where pulp, paper, and paperboard are manufactured and converted. These rules do not apply to logging and the transportation of logs to pulp, paper, and paperboard mills**

(3) **Respiratory protection shall be in compliance with Occupational Health Standard Part 451 "Respiratory Protection," as referenced in R 408.16302.**

R 408.16302 Adopted and referenced standards.

Rule 6302. (1) This standard is adopted by reference in these rules, National Fire Protection Association NFPA 91 "Blower and Exhaust Systems for Dust, Stock, and Vapor Removal or Conveying," 1961 edition. This standard is available from NFPA, 1 Batterymarch Park, Quincy, Massachusetts, USA, 02169-7471, telephone number: 1-617-770-3000 or via the internet at website: www.nfpa.org; at a cost as of the time of adoption of these rules of \$27.00.

(2) The following standards are adopted by reference in these rules and are available from IHS Global, 15 Inverness Way East, Englewood, Colorado, 80112, USA, telephone number: 1-800-854-7179 or via the internet at website: <http://global.ihs.com>; at a cost as of the time of adoption of these rules, as stated in this subrule.

(a) American National Standard Institute (ANSI) Standard Z9.1 "Open Surface Tanks-Ventilation and Operations," 1951 edition. Cost: \$20.00.

(b) ANSI Z9.2 "Fundamentals Governing the Design and Operation of Local Exhaust Ventilation Systems," 1960 edition. Cost \$32.00.

(c) American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section VIII, "Unfired Pressure Vessels," 1989 edition with addenda. Cost: \$514.00.

(3) The standards adopted in subrules (1) and (2) of this rule are also available for inspection at the Department of Licensing and Regulatory Affairs, MIOSHA Regulatory Services Section, 7150 Harris Drive, P.O. Box 30643, Lansing, Michigan, 48909-8143.

(4) Copies of the standards adopted in subrules (1) and (2) of this rule may be obtained from the publisher or may also be obtained from the Department of Licensing and Regulatory Affairs, MIOSHA Regulatory Services Section, 7150 Harris Drive, P.O. Box 30643, Lansing, Michigan, 48909-8143, at the cost charged in this rule, plus \$20.00 for shipping and handling.

(5) The following Michigan occupational safety and health standards are referenced in these rules. Up to 5 copies of these standards may be obtained at no charge from the Michigan Department of Licensing and Regulatory Affairs, MIOSHA regulatory services section, 7150 Harris Drive, P.O. Box 30643, Lansing, MI, 48909-8143 or via the internet at website: www.michigan.gov/mioshastandards. For quantities greater than 5, the cost, at the time of adoption of these rules, is 4 cents per page.

(a) General Industry Safety Standard Part 2 "Floor and Wall Openings, Stairways, and Skylights," R 408.10201 to R 408.10241.

(b) General Industry Safety Standard Part 7 "Guards for Power Transmission," R 408.17201 to R 408.10765.

(c) General Industry Safety Standard Part 23 "Hydraulic Power Presses," R 408.12301 to R 408.12373.

(d) General Industry Safety Standard Part 27 "Woodworking Machinery," R 408.12701 to R 408.12799.

(e) General Industry Safety Standard Part 33 "Personal Protective Equipment," R 408.13301 to R 408.13398.

(f) General Industry Safety Standard Part 52 "Sawmills," R 408.15201 to R 408.15277.

(g) Occupational Health Standard Part 301 "Air Contaminants," R 325.51101 to R 325.51108.

(h) Occupational Health Standard Part 380 "Occupational Noise Exposure in General Industry," R 325.60101 to R 325.60128.

(i) Occupational Health Standard Part 451 "Respiratory Protection," R 325.60051 to R 325.60052.

R 408.16311. Employer responsibility.

Rule 6311. An employer shall do all of the following:

(a) Provide training to each employee regarding the hazards and safeguards before starting an assigned job.

(b) Provide personal protective equipment that is necessary to protect an employee from the hazards of the job **according to the requirements as required pursuant to the provisions of R 408.16313 and General Industry Safety Standard Part 33 "Personal Protective Equipment," as referenced in R 408.16302.**

(c) Prevent the operation of a machine ~~that which~~ is not guarded according to **Michigan Occupational Safety and Health Administration (MIOSHA) state standards, that which** has a defective guard, or ~~that which~~ is otherwise unsafe.

(d) Establish and maintain a lockout procedure as prescribed in R 408.16323(4).

(e) Comply with the requirements of this part.

R 408.16313 Personal protective equipment.

Rule 6313. (1) A deluge shower and eye fountain shall be provided within 25 feet of an area where caustics or acids are used or mixed at a strength ~~that which~~ could cause injury to an exposed employee.

(2) An approved life jacket shall be provided to the employee, at no expense to the employee, and shall be used when an employee works above water where a protective standard barrier or lifeline and safety belt is not provided.

(3) Personal protective equipment used by more than 1 employee shall be cleaned or sanitized after each usage where body contact has been made.

(4) Eye protection, as specified in General Industry Safety Standard Part 33 "Personal Protective Equipment," **as referenced in R 408.16302,** ~~being R 408.13301 et seq. of the Michigan Administrative Code,~~ shall be provided to, and used by, employees who are in the wood yard and employees who are involved in any of the following operations:

(a) Maintenance.

(b) Barking.

(c) Knot cleaning.

(d) Digesting.

(e) Pulp grinding.

(f) Banding.

(g) Chemical handling

(5) Head protection, as specified in General Industry Safety Standard Part 33 "Personal Protective Equipment," **as referenced in R 408.16302,** ~~being R 408.13301 et seq. of the Michigan Administrative Code,~~ shall be provided to, and used by, employees who are in the wood yard and employees who are included in any of the following operations:

(a) Barking.

(b) Maintenance.

(c) Digesting.

(d) Pulp grinding.

(6) Foot protection, as specified in General Industry Safety Standard Part 33 "Personal Protective Equipment," **as referenced in R 408.16302** ~~being R 408.13301 et seq. of the Michigan Administrative Code,~~ shall be provided to, and used by, employees who are in the wood yard and employees who are involved in any of the following operations:

(a) Pulp grinding.

(b) Maintenance.

(c) Hazardous chemical handling and mixing operations

(7) Personal protective equipment such as aprons, gloves, rubber boots, and metal or plastic toe or metatarsal foot protection shall be provided and used as prescribed in General Industry Safety Standard Part 33 "Personal Protective Equipment," **as referenced in R 408.16302.** ~~being R 408.13301 et seq. of the Michigan Administrative Code.~~

(8) Respiratory equipment shall be provided to the employee, at no expense to the employee, and shall be available and maintained in an operable and sanitary condition where toxic fumes may be encountered above the maximum threshold limits prescribed by **Occupational Health Standard Part 301 "Air Contaminants," and Part 451 "Respiratory Protection," as referenced in R 408.16302.** ~~the department of consumer and industry services.~~

R 408.16321 Illumination.

Rule 6321. (1) Natural or artificial lighting shall be furnished to provide the following:

- (a) A minimum of 25 foot candles intensity at the machine operator's work station.
- (b) A minimum of 5 foot candles along a means of egress.
- (c) A minimum of 2 foot candles in an inside active storage area.

(2) An employee who is entering a vessel for the purpose of cleaning or inspecting the vessel shall be provided with an appropriate and intrinsically safe emergency portable illumination device. ~~Use of the device shall be limited to the appropriate hazardous location class and division ratings as determined pursuant to the provisions of the national electrical code NFPA 70-1971, and ANSI CI-1971 (revision of 1968).~~

(3) Emergency lighting shall be provided where it is necessary for employees to remain at their machines or stations to shut down equipment in case of power failure. Emergency lighting shall be provided at stairways and passageways or aisle ways used by employees for emergency exit in case of power failure. Emergency lighting shall be provided in all plant first aid and medical facilities.

R 408.16322. Floors, aisles and catwalks.

Rule 6322. (1) An aisle or floor work area shall be free of protruding objects, holes, and loose boards.

(2) An aisle shall be 3 feet wider than the widest load transported in the aisle and the outline of the aisle marked.

(3) A slip-resistant surface shall be provided on platforms, at work stations, on walk ramps, plank walks, and catwalks.

(4) A stair tread leading to a catwalk or platform shall have a slip-resistant surface.

(5) A catwalk 4 feet or more above the floor, ground, or platform shall be guarded by a standard barrier and toeboard on the open side as prescribed in **R 408.10211, R 408.10231 and R 408.10233** ~~rules 211, 231 and 233 of the General Industry Safety standards commission Standard, Part 2 "Floor and Wall Openings, Stairways and Skylights," as referenced in R 408.16302.~~ ~~being R 408.10211, R 408.10231 and R 408.10233 of the Michigan Administrative Code.~~ However, a catwalk, regardless of height, above or adjacent to dangerous equipment shall be guarded with a standard barrier and toeboard.

R 408.16325. Lubrication.

Rule 6325. (1) Lubrication shall be accomplished by 1 of the following:

- (a) Manually, when the machine can be shut off and locked out.
- (b) Automatic pressure or gravity feed system.
- (c) Extension pipe leading to an area outside of guards or away from any hazards.
- (d) A means which would provide equal or greater protection than **subdivision** (a), (b) or (c) **of this subrule** for the employee.

(2) ~~In any case, rule 732 of General Industry Safety Standard Part 7 "Guards for Power Transmission," as referenced in R 408.16302, of the general industry safety standards commission standard, being R 408.10732 of the Michigan Administrative Code shall be followed.~~

R 408.16331 Material handling.

Rule 6331. (1) A mechanical lifting device shall be provided and used to place and remove rolls of paper and paperboard from a machine.

(2) An escape hatch shall be provided where doors on an enclosed cab provided on a powered industrial truck may be blocked by special equipment.

(3) A crane, powered industrial truck, or other wood handling equipment, except over the road vehicles, having a cab with windows shall have all windows protected by a screen made of steel rods not less than 7/16 inch in diameter with openings not more than 4 by 4 inches or 2 by 6 inches.

(4) Where a hooker or hatch tender is used, the operator of a cab style crane shall respond to the hooker's or hatch tender's signals. The signals for an overhead crane shall be as prescribed in Table 1 '**Standard Hand Signals For Controlling Overhead And Gantry Cranes.**' The signals for a boom type crane shall be as prescribed in Table 2 '**Hand Signals for Boom-Type Cranes.**'

(5) A blower used to transport rags shall be provided a feed hopper with the opening not less than 48 inches from the fan. The blower outlet shall not allow material to fall on an employee.

(6) Railroad cars shall not be spotted on tracks adjacent to the locomotive cranes unless a 24-inch clearance is maintained, as prescribed in ~~rule 6342(4).~~ **R 408.16342(1).**

(7) The handling and storage of other materials shall conform to ~~rules 6342(4)~~ **R 408.16342(1)** and (2) with respect to clearance.

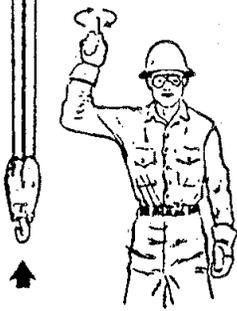
(8) Handles of wood hooks shall be locked to the shank to prevent them from rotating.

(9) An employee shall not be permitted to ride on a powered hand truck unless it is so designed by the manufacturer. A limit switch shall be on the operating handle —30 degrees each way from a 45-degree angle up and down beyond which the drive motor is electrically disconnected and braking action commences.

(10) Whenever possible, all dust, fumes, and gases incident to handling materials shall be controlled at the source, in accordance with ANSI Standard Z9.2 “Fundamentals Governing The Design and Operation of Local Exhaust Ventilation Systems,” 1960 edition, as adopted in R 408.16302. Where control at the source is not possible, respirators with goggles or protective masks shall be provided, and employees shall wear them when handling alum, clay, soda, ash, lime, bleach powder, sulfur, chlorine, and similar materials, and when opening rag bales.

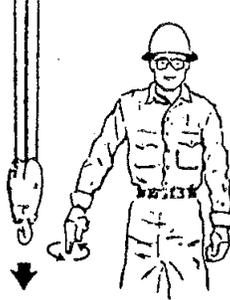
(11) Hoods of cutters, shredders, and dusters shall have exhaust ventilation in accordance with ANSI Standard Z9.2 “Fundamentals Governing The Design and Operation of Local Exhaust Ventilation Systems,” 1960 edition, as adopted in R 408.16302.

TABLE 1
STANDARD HAND SIGNALS FOR CONTROLLING OVERHEAD AND GANTRY CRANE



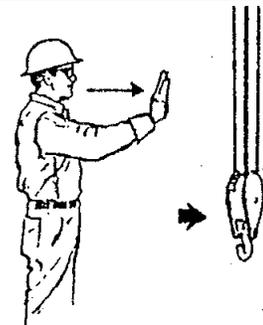
HOIST.

With forearm vertical, forefinger pointing up, move hand in small horizontal circle.



LOWER.

With arm extended downward, forefinger pointing down, move hand in small horizontal circles.



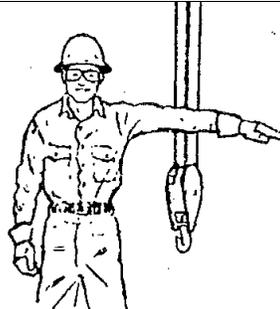
BRIDGE TRAVEL.

Arm extended forward, hand open and slightly raised, make pushing motion in direction of travel.



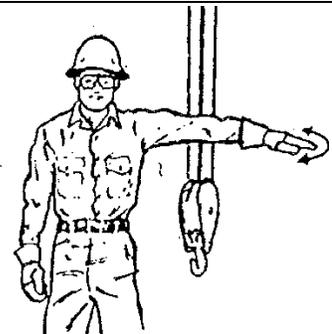
TROLLEY TRAVEL.

Palm up, fingers closed, thumb pointing in direction of motion, jerk hand horizontally.



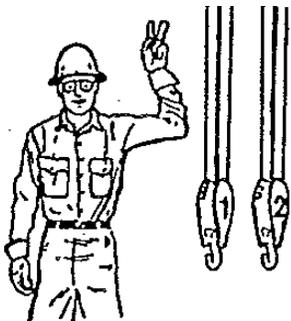
STOP.

Arm extended, palm down, hold position rigidly.



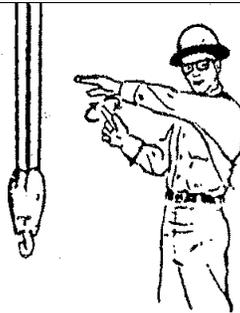
EMERGENCY STOP.

Arm extended, palm down, move hand rapidly right and left.



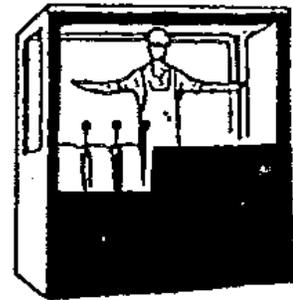
MULTIPLE TROLLEYS.

Hold up one finger for block marked "1" and two fingers for block marked "2", Regular signals follow.



MOVE SLOWLY.

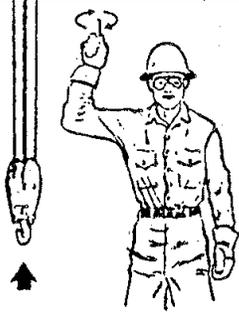
Use one hand to give any motion signal and place other hand motionless in front of hand giving the motion signal. (Hoist slowly shown as example.)



MAGNET IS DISCONNECTED.

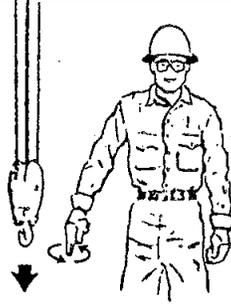
Crane operator spreads both hands apart – palms up.

**TABLE 2
HAND SIGNALS FOR BOOM-TYPE CRANES**



HOIST.

With forearm vertical, forefinger pointing up, move hand in small horizontal circle.



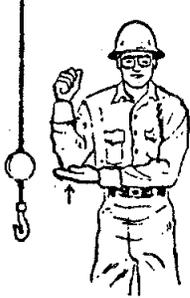
LOWER.

With arm extended downward, forefinger pointing down, move hand in small horizontal circles.



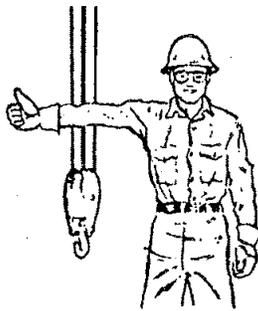
USE MAIN HOIST.

Tap fist on head; then use regular signals.



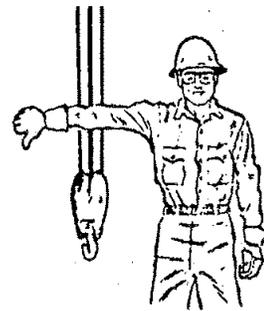
USE WHIPLINE. (Auxiliary Hoist).

Tap elbow with one hand; then use regular signals.



RAISE BOOM.

Arm Extended, fingers closed, thumb pointing upward.



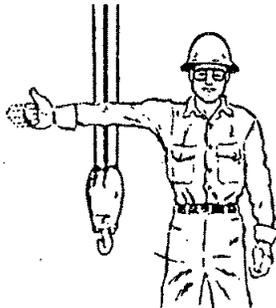
LOWER BOOM.

Arm extended, fingers closed, thumb pointing downward.



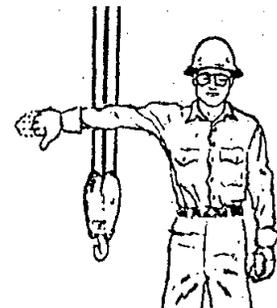
MOVE SLOWLY.

Use one hand to give any motion signal and place other hand motionless in front of hand giving the motion signal. (Hoist slowly shown as example.)



RAISE THE BOOM AND LOWER THE LOAD.

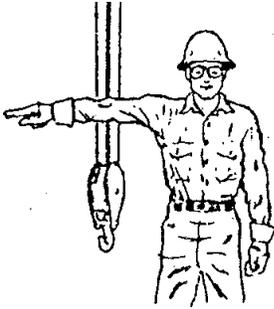
With arm extended, thumb pointing up, flex fingers in and out as long as load movement is desired.



LOWER THE BOOM AND RAISE THE LOAD.

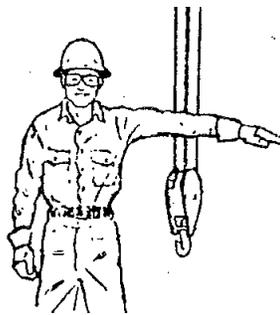
With arm extended, thumb pointing down, flex fingers in and out as long as load movement is desired.

**TABLE 2
HAND SIGNALS FOR BOOM-TYPE CRANES**



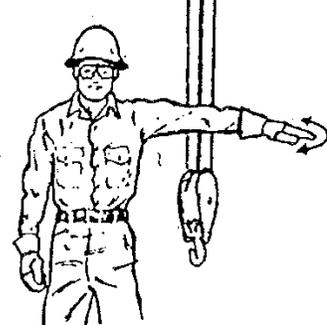
SWING.

Arm extended, point with finger in direction of swing of boom.



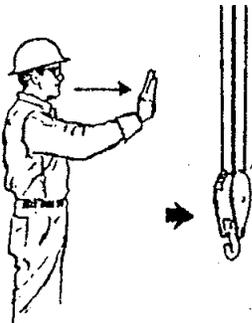
STOP.

Arm Extended, palm down, hold position rigidly.



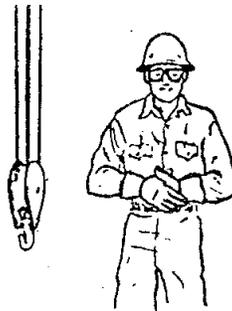
EMERGENCY STOP.

Arm extended, palm down, move hand rapidly right and left.



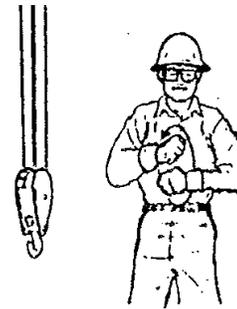
TRAVEL.

Arm extended forward, hand open and slightly raised, make pushing motion in direction of travel.



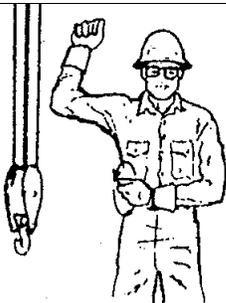
DOG EVERYTHING.

Clasp hand in front of body.



TRAVEL. (Both Tracks)

Use both fists in front of body, making a circular motion about each other, indicating direction of travel, forward or backward. (For crawler cranes only.)



TRAVEL. (One Track.)

Lock the track on side indicated by raised fist. Travel opposite track in direction indicated by circular motion of other fist, rotated vertically in front of body. (For crawler cranes only.)

Extracted from American National Standard,
Safety Code for Crawler, Locomotive and Truck Cranes,
B 30.5-1968 with the permission of the publisher,
The American Society of Mechanical Engineers,
United Engineering Center,
345 East 47th Street, New York, N.Y. 10017.

R 408.16333 Vessels, bin, and cooker entry.

Rule 6333. (1) A lifeline and safety harness or safety belt shall be provided and used by an employee entering a vessel, tank, digester, bin, or cooker without an access door at ground or floor level, as prescribed in General Industry Safety Standard Part 33 "Personal Protective Equipment," **as referenced in R 408.16302.** ~~being R 408.13301 et seq. of the Michigan Administrative Code.~~ An employee shall be stationed outside with a self-contained respirator in a position to handle the lifeline and summon assistance.

(2) The air inside the vessel, tank, or bin shall be tested prior to entry. Atmospheres containing toxic gas or vapor, or which are deficient in oxygen shall be purged and fresh air forced inside while the tank or vessel is occupied, or a self-contained or a constant-flow type supplied air respirator shall be worn. An employee shall not enter a vessel or tank containing an explosive atmosphere

(3) Controls to equipment supplying or operating a closed vessel, tank, digester, bin, or cooker shall be locked out or blanked **before** ~~prior to~~ entry by an employee.

(4) Valves to supply pipes for a closed vessel, tank, digester, bin, or cooker shall be closed and locked out or blanked **before** ~~prior to~~ entry by an employee.

(5) Tanks shall be free of acid and shall be washed out with water, and fresh air shall be blown into them, before allowing an employee to enter. An employee entering the tanks shall be provided with a supplied air respirator, lifebelt, and attached lifeline by the employer, at no expense to the employee.

(6) Any lines or sewers shall be blanked off to protect workers from air contaminants.

(7) When cleaning, inspection, or other work requires that employees must enter the cooker, 1 employee shall be stationed outside in a position to observe and assist in case of emergency.

(8) All intake valves to a tank shall be blanked off or disconnected.

R 408.16336 Chains; cables; wire ropes.

Rule 6336. (1) A chain used for material handling and its component parts, other than alloy steel chain having a minimum tensile strength of 125,000 pounds per square inch, shall have a designed safety factor of not less than 5. Alloy chain shall not be used in excess of the working load in straight tension for its size as prescribed in Table 3 **'Working Load.'**

(2) Chain with bent, twisted, or elongated links, or a hook ~~that which~~ has been opened more than 15% at the throat from the original set or twisted more than 10% from the plane of the unbent hook, shall not be used until the defective links or hook is replaced.

(3) Cable, wire rope, and wire rope slings shall have a designed safety factor of not less than 5.

(4) Wire rope or cable shall be inspected when installed, and not less than monthly thereafter, when in use.

(5) Wire rope shall not be used if, in any length of 8 diameters, the total number of visible broken wires exceeds 10% of the total number of wires, or if the rope shows other signs of excessive wear, corrosion, or defects.

**TABLE 3 ~~TABLE 2~~
WORKING LOAD**

Nominal Size, Chain Bar, inch	Work Load, lb. Max.
1/4	3,250
3/8	6,600
1/2	11,250
5/8	16,500
3/4	23,000
7/8	28,500
1	38,750
1 1/8	44,500
1 1/4	57,500
1 3/8	67,000
1 1/2	80,000
1 3/4	100,000

R 408.16337. Boom cranes.

Rule 6337. (1) A boom crane shall bear a sign or tag in the cab and on the outside showing the maximum rated capacity in pounds or tons as related to the boom angle. The rated capacity shall not be exceeded.

(2) The designed safety factor for all boom crane parts shall be not less than 5.

(3) A boom crane shall be equipped with a warning device which shall be used during lifting and moving of a load if an employee other than the crane crew is in the loading or unloading path.

(4) A boom crane load shall not pass over the head of any employee.

(5) Only 1 member of a boom crane crew ~~may~~ ~~shall be authorized to~~ give signals to the crane operator. The signals shall conform to Table 2 '**Hand Signals for Boom-Type Cranes.**' ~~of rule 6334.~~

(6) A crane boom shall not be operated within 10 feet of overhead power lines unless the power lines have been deenergized. The boom shall be painted a bright yellow from, and including, the head sheave to a point 6 feet down the boom towards the cab.

R 408.16343. Flumes, runways and jack ladders.

Rule 6343. (1) A flume or water runway used to transport logs shall have a standard barrier along the exposed sides. The height of the sides of a flume or runway extending above ground, floor, or platform level may be counted as part of the 42 inches ~~as~~ prescribed for a standard barrier ~~as in rule 234 R 408.10231 of the General Industry Safety standards commission Standard Part 2 "Floor and Wall Openings, Stairways and Skylights,"~~ **as referenced in R 408.16302.**

(2) An inclined walkway along an inclined portion of a jack ladder shall have cleats or a slip-resistant surface and the walkway shall be equipped with a stair railing on both sides as prescribed in ~~rule 224 R 408.10221 of the General Industry Safety standards commission Standard Part 2 "Floor and Wall Openings, Stairways and Skylights,"~~ **as referenced in R 408.16302.** ~~being R 408.10224 of the Michigan Administrative Code.~~

R 408.16344. Log jams.

Rule 6344. Where it is necessary for an employee to stand on a conveyor for the purpose of clearing a log jam, the conveyor shall be stopped and locked out as prescribed in ~~subrule (4) of rule 6323 R 408.16323(4)~~ **R 408.16323(4)** before the work is started.

R 408.16345. Saws.

Rule 6345. (1) A guard shall be provided in front of a slasher saw to protect an employee from thrown pieces.

(2) An employee shall not mount a slasher saw table unless the machine is stopped and locked out as prescribed in ~~subrule (4) of rule 6323 R 408.16323(4).~~

(3) The exposed portion of a slasher saw blade below the table shall be enclosed.

(4) A saw and other equipment more commonly found in a sawmill shall be guarded and used as prescribed in ~~the General Industry Safety standards commission Standard, Part 52 "Sawmills,"~~ **as referenced in R 408.16302.** ~~being R 408.15201 to R 408.15256 of the Michigan Administrative Code.~~

R 408.16346. Barkers.

Rule 6346. (1) An employee shall not hold or have physical contact with the pulpwood during the barking operation.

(2) Barrier guards or enclosures shall be provided to protect an employee in the area from flying particles from the barker.

(3) Two or more continuous barking drums installed side by side shall be provided with a walkway between each set with a standard barrier **as prescribed in pursuant to rule 234 R 408.10231 of the General Industry Safety standards commission Standard Part 2 "Floor and Wall Openings, Stairways and Skylights,"** **as referenced in R 408.16302.**

(4) When a platform or floor allows access to the sides of a drum barker, a standard barrier shall be installed as prescribed in ~~rule 234 R 408.10231 of the General Industry Safety standards commission Standard Part 2 "Floor and Wall Openings, Stairways and Skylights,"~~ **as referenced in R 408.16302.**

(5) In-running nip points exposed to contact of trunnion rollers on a drum barker shall be guarded.

(6) An intermittent barking drum shall be equipped with a device ~~that which~~ locks the drum while being loaded or unloaded.

(7) The loading and unloading ends of a hydraulic barker shall be equipped with baffles. The operator shall be protected by a barrier of 1/2 inch plexiglas or material of equivalent strength. A high pressure hose to a hydraulic barker shall be secured at the hose connection ends to prevent whipping if a connection fails.

R 408.16347 Chippers.

Rule 6347. (1) An employee feeding a chipper shall not have a work station in direct line with the chipper hopper.

(2) The in-feed conveyor shall be guarded for its entire length by an enclosure or standard barrier as prescribed in ~~rules 234 and 233 R 408.10231 and R 408.10233 of the General Industry Safety standards commission Standard Part 2 "Floor and Wall Openings, Stairways and Skylights,"~~ **as referenced in R 408.16302.**

(3) The chipper hopper shall be enclosed not less than 40 inches from the blades to the opening and be baffled to prevent wood from being thrown from the hopper.

(4) An employee feeding a chipper within 42 inches of the hopper shall wear a safety belt and line designed to prevent falling into the hopper.

(5) Where jam-ups cannot be cleared, the in-feed equipment shall be stopped and locked out. The employee clearing the jam shall wear a safety belt and line which will prevent contact with the blades before additional clearing is done. If it is necessary to remove or loosen a blade hood, the power shall be shut off and locked out.

(6) Chipper knives shall be transported on a carrier.

(7) Hearing protection equipment shall be worn by the operator and others in the immediate area if there is any possibility that the noise level may be harmful and shall be in compliance with Occupational Health Standard Part 380 "Occupational Noise Exposure," as referenced in R 408.16302.

R 408.16350 Bleaching.

Rule 6350. (1) The bleach-mixing rooms in which the bleach powder is mixed shall be provided with adequate exhaust ventilation, located at the floor level, as prescribed in ANSI Standard Z9.1 "Open Surface Tanks-Ventilation And Operations," 1951 edition, as adopted in R 408.16302

(2) Chlorine gas shall be carried away from the work place and breathing area by an exhaust system. The gas shall be rendered neutral or harmless before being discharged into the atmosphere as prescribed in ANSI Standard Z9.2 "Fundamentals Governing The Design and Operation of Local Exhaust Ventilation Systems," 1960 edition, as adopted in R 408.16302.

(3) For emergency and rescue operations, the employer must provide employees with self-contained breathing apparatuses or supplied-air respirators and ensure that employees use these respirators as prescribed in Occupational Health Standard Part 451 "Respiratory Protection," as referenced in R 408.16302.

R 408.16351 Acid rooms, acid towers, and acid tanks.

Rule 6351. (1) During inspection, repairs, or maintenance of acid towers, the employees shall be provided with eye protection, a supplied air respirator, a safety belt, and an attached lifeline. The line shall be extended to an attendant stationed outside the tower opening. Personal protective equipment as prescribed in **General Industry Safety Standard Part 33 "Personal Protective Equipment," as referenced in R 408.16302,** ~~rule 6343~~ shall be worn.

(2) Walkways, stairs, and other equipment in acid rooms, acid towers, and acid tanks shall be inspected monthly for corrosion and replaced or repaired where any part shows a defect affecting employee safety.

(3) Where hoops are used on acid tanks, they shall be made of rods rather than flat strip stock and shall be inspected and maintained as prescribed in subrule (2) of this rule.

(4) Pressure tanks-accumulators shall be inspected semiannually as prescribed in the ASME Boiler And Pressure Vessel Code, Section VIII, "Unfired Pressure Vessels," 1989 with addenda, ~~which is as adopted in R 408.16302. these rules by reference and may be inspected at the Lansing office of the department of consumer and industry services. The code may be purchased at a cost as of the time of adoption of these rules of \$230.00 from the American Society of Mechanical Engineers, 22 Law, Fairfield, New Jersey 07007, or from the Michigan Department of Consumer and Industry Services, Standards Division, 7150 Harris Drive, Box 30643, Lansing, Michigan 48909.~~

(5) When lead burning is performed within tanks, fresh air shall be forced into the tanks so that fresh air will reach the face of the employee first and the direction of the current will never be from the source of the fumes toward the face of the employees. Supplied air respirators (constant-flow type) shall be provided as required in Occupational Health Standard Part 451 "Respiratory Protection," as referenced in R 408.16302.

R 408.16352 Chlorine, chlorine dioxide and sodium chlorate.

Rule 6352. (1) Only a trained and authorized employee shall be permitted into a chlorine dioxide generating room.

(2) A room used for storage or generating of chlorine gases shall have not less than 2 exits.

(3) Storage facilities and handling operations shall eliminate possible contact of sodium chlorate and chlorine dioxide with wood or other materials ~~that which~~ would cause a fire, explosion, or other chemical reaction.

(4) Smoking and other sources of fire and spark producing equipment shall not be permitted in a chlorine dioxide generating room when it is in operation. Warning signs shall be posted.

(5) Tanks of liquid chlorine, when stored inside, shall be stored in an unoccupied adequately ventilated room, where their possible leakage cannot affect workers, and the exhaust pickup shall be at floor level.

(6) A water hose and supply shall be available where spills of chlorine and chlorine dioxide may occur.

(7) A tank car containing chlorine and connected to a pipe or hose line shall be protected by a derail device and the blue flag as prescribed in **R 408.16338.** ~~rule 6338.~~

(8) A pipe or hose line carrying chlorine, caustic or acid, shall be identified by a sign at each valve and yellow color banding.

(9) Gas masks capable of absorbing chlorine shall be supplied, conveniently placed, and regularly inspected, and employees who may be exposed to chlorine gas shall be instructed in their use.

(10) For emergency and rescue work, independent self-contained oxygen-type masks or supplied-air equipment shall be provided.

R 408.16353 Sulfur burning and drying.

Rule 6353. (1) A sulfur burning or drying house shall be **safely and adequately** provided with an exhaust system as prescribed by ~~the state department of consumer and industry services~~ **ANSI Standard Z9.2 "Fundamentals Governing the Design and Operation of Local Exhaust Ventilation Systems," 1960 edition, as adopted in R 408.16302**, to reduce the chance of dust explosion **hazards and fires**.

~~(2)~~ **In addition,** Pipes, beams, and other overhead objects shall be cleaned off not less than once a month to remove dust accumulations.

(3) Sulfur storage bins shall be kept free of sulfur dust accumulation, in accordance with ANSI Standard Z9.2 "Fundamentals Governing the Design and Operation of Local Exhaust Ventilation Systems," 1960 edition, as adopted in R 408.16302.

(4) Exhaust ventilation shall be provided where niter cake is fed into a rotary furnace and shall be so designed and maintained as to keep the concentration of hydrogen sulfide gas below the parts per million listed in Occupational Health Standard Part 301 "Air Contaminants," as referenced in R 408.16302.

~~(5)~~**(2)** Non-sparking tools and equipment shall be used in handling dry sulfur. Smoking shall be prohibited and "No Smoking" signs shall be posted.

~~(6)~~**(3)** Sulfur melting equipment shall not be located in the burner room.

(7)~~(4)~~ Explosion-proof electric equipment shall be used where dry sulfur burning is done.

(8) Supplied-air respirators shall be strategically located for emergency and rescue use.

(9) Gas masks shall be available. These masks shall furnish adequate protection against sulfurous acid and chlorine gases, and shall be inspected and repaired in accordance with Occupational Health Standard Part 451 "Respiratory Protection," as referenced in R 408.16302.

(10) Where as the processes of the sulfate and soda operations are similar to those of the sulfite processes, subrules (8) and (9) of this rule apply.

R 408.16354 Digesters and blow pits, general.

Rule 6354. (1) A means of egress shall be provided at each end of the room at every floor level of a digester building.

(2) A batch type digester shall have **all of the following**:

(a) A blowoff valve located so it can be operated from another room, remote from safety valve.

(b) Blow valves on rotary digesters pinned or locked in a closed position during the cooking period.

(c) Pipes, valves, and fittings classified as heavy duty between the digester and blow pit. These pipes, valves, and fittings shall be inspected at least semiannually to determine the degree of deterioration, and shall be replaced when necessary.

(d) Through bolts instead of cap bolts on pipe joints.

(3) A side opening to a blow pit is preferred. If the opening is on top, the opening shall be protected by a standard barrier as prescribed in ~~the General Industry Safety standards commission~~ **Standard Part 2 "Floor and Wall Openings, Stairways, and Skylights," as referenced in R 408.16302**. Access to a blow pit shall be by a ladder designed to keep the door open when the ladder is in place, or an employee is within the pit.

(4) Blow-pit hoops shall be maintained in a safe condition.

(5) Personal protective equipment ~~as prescribed in rule 6343~~ **R 408.16313 and General Industry Safety Standard Part 33 "Personal Protective Equipment," as referenced in R 408.16302**, shall be provided and worn when repairing or removing old brick lining from a digester.

(6) Fresh air shall be blown constantly into the digester while employees are inside. Supplied-air respirators shall be available if the fresh air supply fails or is inadequate.

(7) An inspector shall not enter a digester unless a lifeline is securely fastened to his or her body by means of a safety belt and at least 1 other experienced employee is stationed outside the digester to handle the line and to summon assistance. All ladders and lifelines shall be inspected before each use.

R 408.16356 Safety valves.

Rule 6356. (1) A safety valve shall be installed between the steam regulating valve and the vessel on a separate pipe line for each pressure vessel. The safety device shall conform to paragraph U-2 in the ASME Boiler and Pressure Vessel Code, Section VIII, "Unfired Pressure Vessels," 1989, with addenda, **as referenced in R 408.16302**. ~~See rule 6354(4) for availability of this referenced code.~~ Also see Rule R 408.4025 of the Michigan Boiler Rules.

(2) A safety valve shall be checked between each cook to ~~ensure be sure~~ **ensure** it has not become plugged or corroded to the point of being inoperative.

(3) A safety valve shall be inspected not less than annually and repaired if necessary to ~~ensure insure~~ **ensure** its ability to operate, and shall be set at not more than the rated capacity of the pressure vessel.

(4) The vent for a safety valve shall discharge into an area ~~that which~~ **that** does not create a hazard for an employee.

R 408.16361 Pulpers and beaters.

Rule 6361. (1) The top of a pulper vessel or beater tub less than 42 inches from the floor or platform shall have a barrier erected around the exposed edge to a height of 42 inches to guard the opening, or a beater or pulper fed from a floor above by a chute shall have the chute extend to a height of 42 inches or the opening guarded by the standard barrier as prescribed in ~~the General Industry Safety standards commission~~ Standard Part 2 "Floor and Wall Openings, Stairways, and Skylights," **as referenced in R 408.16302.**

(2) Beater rolls shall be provided with covers.

(3) The floor around a beater shall be provided with sufficient drainage to remove wastes.

(4) When cleaning, inspecting, or other work requires that employees enter the pulpers, they shall be equipped with safety belt and lifeline, and 1 employee shall be stationed outside at a position to observe and assist in case of emergency.

(5) When cleaning, inspecting, or other work requires that employees enter pulpers, all steam, water, or other control devices shall be locked or tagged out. Blank flanging and tagging of pipe lines is acceptable in place of closed and locked or tagged valves. Blank flanging of steam and water lines is acceptable in place of valve locks.

R 408.16362 Bleaching.

Rule 6362. A bleaching engine, except the Bellmer type, shall have the top covered with the exception of an opening large enough to permit filling but too small to admit **an employee. a man.** This opening shall be covered with a door. The opening and a platform connecting 1 engine with another shall be guarded with standard barriers as prescribed in ~~the General Industry Safety standards commission~~ Standard Part 2 "Floor and Wall Openings, Stairways and Skylights," **as referenced in R 408.16302.**

R 408.16364 Dust.

Rule 6364. (1) Measures for the control of dust shall be provided, in accordance with General Industry Safety Standard Part 33 "Personal Protective Equipment" and Occupational Health Standard Part 451 "Respiratory Protection," as referenced in R 408.16302.

(2) Installation of blower and exhaust systems for dust, stock, and vapor removal or conveying, shall be provided, in accordance with NFPA 91 "Blower and Exhaust Systems for Dust, Stock, and Vapor Removal or Conveying," 1961 edition, as adopted in R 408.16302.

R 408.16372 Dryer.

Rule 6372. (1) A barrier guard or a standard barrier, as prescribed in ~~the occupational safety standards commission~~ **General Industry Safety** standard, Part 2. "Floor and Wall Openings, Stairways, and Skylights," **as referenced in R 408.16302,** shall be installed in front of the first dryer of each section of a paper machine, if the area is accessible to an employee.

(2) In starting a dryer section, steam to heat the drums shall be introduced slowly while the drums are turning.

(3) A broken carrier rope shall not be removed from a dryer while the section is running at operating speed.

(4) The end of a "yankee" type dryer exposed to contact shall be guarded by a barrier to prevent entry to the turning drum.

R 408.16375 Broke hole.

Rule 6375. (1) A broke hole of such dimensions that an employee could fall through shall be guarded on all sides by a standard barrier as prescribed ~~in by the General Industry Safety standards commission~~ standard, Part 2 "Floor and Wall Openings, Stairways and Skylights." **as referenced in R 408.16302.** Where a broke hole of such dimensions that an employee could fall through is located over a pulper or pulper conveyor system which is manually fed, the employee feeding into the hole shall wear a safety belt and line which will restrict the employee from falling through the hole.

(2) A warning device shall be used to alert an employee working below a broke hole when broke is discharged into the hole.

R 408.16385 Rotary cutter.

Rule 6385. (1) A single knife rotary cutter shall be guarded to prevent contact with the blade.

(2) On duplex cutters, the protection required for single-knife machines shall be provided for the first knife, and a hood shall be provided for the second knife.

(3) Access to a blade of a rotary cutter shall be provided by means of a catwalk after the machine had been locked out as prescribed in ~~rule 6323(4)~~ **R 408.16323(4).**

(4) The nip point at the spreader or squeeze roll shall be guarded as prescribed in ~~rule 6374(1)~~ **R 408.16374(1).**

R 408.16387 Cores.

Rule 6387. (1) A core notcher shall be guarded pursuant to the General Industry Safety standards commission Standard Part 23 "Hydraulic Power Presses," **as referenced in R 408.16302.**

(2) A core cutter shall be guarded pursuant to the General Industry Safety standards commission Standard Part 27 "Woodworking Machinery," **as referenced in R 408.16302.** being R 408.12701 to 408.12799 of the Michigan Administrative Code.

(3) A set screw for securing a core collar to winding and unwinding shafts shall not protrude above the face of the collar. Sharp corners on the collar shall be beveled.

(4) A core shaft weighing more than 50 pounds shall have a mechanical device such as a dolly to support all or part of the weight when removing the shaft from the set of paper and placing it in the dressing brackets on the winder.

R 408.16392 Paper baler.

Rule 6392. (1) A manually operated paper baler shall be provided with a device, such as a safety dog, to prevent a kickback by the operating lever.

(2) A powered paper baler shall have the hopper door interlocked to the power source to prevent operation when the door is open.

(3) A powered paper baler producing a bale with a compressed dimension of more than 42 inches shall have hook type door locks that permit a restricted pressure relieving opening of not more than 2 inches before the door can be completely opened.

(4) A hopper opening in the floor above shall be guarded with a standard barrier on all sides as prescribed in ~~rule 6322~~ **R 408.16322.**

(5) Start controls shall be 2-hand constant pressure devices. A down stroke baler shall require 2-hand pressure only until the pressure block has descended past the pinch point.

(6) Limit switches shall be provided to limit the stroke at both ends. A limit switch shall be provided at the top of an upstroke baler to shut off power when the pressure block is out of position.

Rule 3303 **Rescinded.** Specific Operations and Special Industries.

~~Rule (1) Entry of open surface tanks.~~

~~(a) This subsection applies to all tanks subject to Rule 3220.~~

~~(b) Before cleaning the interior of any tank, the contents shall be drained off, and the cleanout doors shall be opened where provided. All pockets in tanks or pits, where it is possible for hazardous vapors to collect, shall be ventilated and cleared of such vapors. [1910.94(d)(11)(ii)]~~

~~(c) Tanks which have been drained to permit employees to enter for the purpose of cleaning, inspection, or maintenance may contain atmospheres which are hazardous to life or health, through the presence of flammable or toxic air contaminants, or through the absence of sufficient oxygen. Before employees shall be permitted to enter any such tank, appropriate tests of the atmosphere shall be made to determine if the limits set by Rule 3220(2)(c) are exceeded, or if the oxygen concentration is less than 19.5 percent. [1910.94(d)(11)(iii)]~~

~~(d) If the tests made in accordance with paragraph (c) of this subsection indicates that the atmosphere in the tank is unsafe, before any employee is permitted to enter the tank, the tank shall be ventilated until the hazardous atmosphere is removed, and ventilation shall be continued so as to prevent the occurrence of a hazardous atmosphere as long as an employee is in the tank. [1910.94(d)(11)(iv)]~~

~~(e) If, in emergencies, such as rescue work, it is necessary to enter a tank which may contain a hazardous atmosphere, suitable respirators, such as self-contained breathing apparatus; hose mask with blower, if there is a possibility of oxygen deficiency; or a gas mask, selected and operated in accordance with paragraph (f) of this subsection, shall be used. If a contaminant in the tank can cause dermatitis, or be absorbed through the skin, the employee entering the tank shall also wear protective clothing. At least one trained standby employee, with suitable respirator, shall be present in the nearest uncontaminated area. The standby employee must be able to communicate with the employee in the tank and be able to haul him out of the tank with a lifeline if necessary. [1910.94(d)(11)(v)]~~

~~(f) When, during emergencies as described in paragraph (e) of this subsection, workers must be in areas where concentrations of air contaminants are greater than the limit set by Rule 3220(2)(c), or oxygen concentrations are less than 19.5 percent, they shall be required to wear respirators adequate to reduce their exposure to a level below these limits, or to provide adequate oxygen. Such respirators shall also be provided in marked, quickly accessible storage compartments built for the purpose, when there exists the possibility of accidental release of hazardous concentration of air contaminants. Respirators shall be approved by the U.S. Bureau of Mines, U.S. Department of the Interior and shall be selected by a competent industrial hygienist or other technically qualified source. Respirators shall be used in accordance with Rules 3302, 3501 and 3502 and persons who may require them shall be trained in their use. [1910.94(d)(9)(vi)]~~

~~Rule (2) Welding in confined spaces.~~

~~(a) Removed (10/99).~~

~~(b) Removed (10/99).~~

~~(c) Lifelines. Where a welder must enter a confined space through a manhole or other small opening, means shall be provided for quickly removing him in case of emergency. When safety belts and lifelines are used for this purpose they shall be so attached to the welder's body that his body cannot be jammed in a small exit opening. An attendant with a~~

~~preplanned rescue procedure shall be stationed outside to observe the welder at all times and be capable of putting rescue operations into effect. [1910.252(e)(4)(iv)]~~

~~Rule (3) Vessel Entry in Pulp, Paper and Paperboard Mills.~~

~~(a) This subsection applies to establishments subject to Rule 5001.~~

~~(b) Safety practices – vessel entering. Lifelines and safety harness shall be worn by anyone entering closed vessels, tanks, chip bins, and similar equipment, and a person shall be stationed outside in a position to handle the line and to summon assistance in case of emergency. The air in the vessels shall be tested for oxygen deficiency and the presence of both toxic and explosive gases and vapors, before entry into closed vessels, tanks, etc., is permitted. Self-contained air or oxygen supply masks shall be readily available in case of emergency. Work shall not be done on equipment under conditions where an injury would result if a valve were unexpectedly opened or closed unless the valve has been locked in a safe position. [1910.261(b)(5)]~~

~~(c) Rag and old paper preparation – entering cookers.~~

~~(i) When cleaning, inspection, or other work requires that persons must enter the cooker, one person shall be stationed outside in a position to observe and assist in case of emergency, in accordance with paragraph (b) of this subsection. [1910.261(f)(6)(ii)]~~

~~(ii) Supplied air respirators should be worn by persons when spreading material inside cookers. [1910.261(f)(6)(iii)]~~

~~(d) Chemical processes of making pulp – acid tower entry.~~

~~(i) During inspection, repairs, or maintenance of acid towers, the workman shall be provided with eye protection, a supplied air respirator, a safety belt, and an attached lifeline. The line shall be extended to an attendant stationed outside the tower opening. [1910.261(g)(2)(iii)]~~

~~(ii) Tanks (acid).~~

~~(A) Tanks shall be free of acid and shall be washed out with water, and fresh air shall be blown into them before allowing men to enter. Men entering the tanks shall be provided with supplied air respirators, lifebelts, and attached lifelines. [1910.261(g)(4)(i)]~~

~~(B) A man shall be stationed outside to summon assistance if necessary. All intake valves to a tank shall be blanked off or disconnected. [1910.261(g)(4)(ii)]~~

~~(iii) Lead burning. When lead burning is being done within tanks, fresh air shall be forced into the tanks so that fresh air will reach the face of the worker first and the direction of the current will never be from the source of the fumes toward the face of the workers. Supplied air respirators (constant-flow type) shall be provided. [1910.261(g)(6)]~~

~~(iv) Inspecting and repairing digester.~~

~~(A) Fresh air shall be blown into the digester constantly while workmen are inside. Supplied air respirators shall be available in the event the fresh air supply fails or is inadequate. [1910.261(g)(15)(ii)]~~

~~(B) No inspector shall enter a digester unless a lifeline is securely fastened to his body by means of a safety belt and at least one other experienced employee is stationed outside the digester to handle the line and to summon assistance. All ladders and lifelines shall be inspected before each use. [1910.261(g)(15)(iii)]~~

~~(C) All employees entering digesters for inspection or repair work shall be provided with protective headgear. Eye protection and dust masks shall be provided to workmen while the old brick lining is being removed, in accordance with American National Standards Z87.1-1968, Z88.2-1969, and Z89.1-1969.~~

~~[1910.261(g)(15)(v)]~~

~~(v) Miscellaneous. Insofar as the processes of the sulfate and soda operations are similar to those of the sulfite processes, the standard of subparagraph (i) to (iv) of this paragraph (d) shall apply. [1910.261(g)(18)]~~

~~(e) Stock preparation – pulpers.~~

~~(i) When cleaning, inspecting, or other work requires that persons enter the pulpers, they shall be equipped with safety belt and lifeline, and one person shall be stationed outside at a position to observe and assist in case of emergency. [1910.261(j)(5)(ii)]~~

~~(ii) When cleaning, inspecting, or other work requires that persons enter pulpers, all steam, water, or other control devices shall be locked or tagged out. Blank flanging and tagging of pipe lines is acceptable in place of closed and locked or tagged valves. Blank flanging of steam and water lines shall be acceptable in place of valve locks. [1910.261(j)(5)(iii)]~~

Rule 3401 Rescinded. Ventilation controls: Applicability

This Part supplements the general occupational health standards of this Chapter in the following industries:

- ~~(1) Pulp, paper, and paperboard mills – Rule 3402. (See also Rule 5001.)~~
- ~~(2) Textiles – Rule 3403. (See also Rule 5002.)~~
- ~~(3) Bakery equipment – Rule 3404. (See also Rule 5003.)~~
- ~~(4) Laundry machinery and equipment – Rule 3405. (Rescinded)~~
- ~~(5) Sawmills – Rule 3406. (See also Rule 5005.)~~

Rule 3402 Rescinded. Ventilation controls in: Pulp, Paper, and Paperboard Mills Covered by Rule 5001

- ~~(1) Applicability. This rule applies only to those establishments covered by Rule 5001 and supplements general occupational health standards pursuant to Rule 1106(3).~~
- ~~(2) General incorporation of standards. Establishments~~

subject to this section shall comply with the following standards of the American National Standards Institute: [1910.261(a)(3)]

(a) ~~Safety Code for Ventilation and Operation of Open - Surface Tanks, Z9.1 - 1951. [1910.261(a)(3)(xix)]~~

(b) ~~Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2 - 1960. [1910.261(a)(3)(xx)]~~

(c) ~~Installation of Blower and Exhaust Systems for Dust, Stock, and Vapor Removal or Conveying, Z33.1 - 1961 [1910.261(a)(3)(xxiii)]~~

(d) ~~Practices for Respiratory Protection, Z88.2 - 1969. [1910.261(a)(3)(xxvi)]~~

(3) ~~Rag and old paper preparation.~~

(a) ~~Shredders, cutters, and dusters. Hoods of cutters, shredders, and dusters shall have exhaust ventilation, in accordance with American National Standard Z9.2 - 1960. [1910.261(f)(2)(iv)]~~ Dust.

(b) ~~Measures for the control of dust shall be provided, in accordance with American National Standards Z33.1 - 1961, Z87.1 - 1968, and Z88.2 - 1969. [1910.261(f)(5)]~~

(4) ~~Chemical processes of making pulp. [1910.261(g)]~~

(a) ~~Sulfur burners. Sulfur - burner houses shall be safely and adequately ventilated, and every precaution shall be taken to guard against dust explosion hazards and fires, in accordance with American National Standards Z9.2 - 1960 and Z12.12 - 1968. [1910.261(g)(1)(i)]~~

(iii) ~~Sulfur storage bins shall be kept free of sulfur dust accumulation and buildings should be designed with explosion relief in accordance with American National Standard Z9.2 - 1960. [1910.261(g)(1)(iii)]~~

(d) ~~Furnace room. Exhaust ventilation shall be provided where niter cake is fed into a rotary furnace and shall be so design concentration of hydrogen sulfide gas below the parts per million listed in Chapter II. [1910.261(g)(20)]~~

(ii) ~~Nonsparking tools and equipment shall be used in handling dry sulfur. [1910.261(g)(1)(ii)]~~

(b) ~~Inspecting and repairing digester. The concentration of lead dust in the air shall not exceed the limits specified in Chapter II. [1910.261(g)(15)(iv)]~~

(c) ~~Insofar as the processes operations are similar to those of the sulfite processes, paragraph (a) of this subsection shall apply. [1910.261(g)(18)]~~

~~Inspection and repair of tanks.~~

~~All piping leading to tanks shall be blanked off or valved and locked or tagged.~~

~~Any lines to sewers shall be blanked off to protect workers from air contaminants. [1910.261.(g)(21)]~~

(5) ~~Bleaching.~~

(a) ~~Bleach mixing rooms.~~

(i) ~~The room in which the bleach powder is mixed shall be provided with adequate exhaust ventilation, located at the floor level, in accordance with American National Standard Z9.1-1951. [1910.261(h)(2)(i)]~~

(ii) ~~Chlorine gas shall be carried away from the work place and breathing area by an exhaust system. The gas shall be rendered neutral or harmless before being discharged into the atmosphere. The requirements of American National Standard Z9.2-1960 shall apply to this subdivision. [1910.261(h)(2)(ii)]~~

(b) ~~Liquid chlorine.~~

~~Tanks of liquid chlorine shall be stored in an adequately ventilated unoccupied room, where their possible leakage cannot affect workers. [1910.261(h)(3)(i)]~~

(6) ~~Vessel entry. See Rule 3303(3) for specific vessel entry procedures supplementing the general procedures of Rules 3301 and 3302.~~

Rule 3503 **Rescinded.** Personal Protective Equipment in Pulp, Paper and Paperboard Mills

(1) ~~General requirements~~

(a) ~~Application. This rule applies to those establishments covered by Rule 5001 and supplements the general requirements of rules 3501 and 3502.~~

(b) ~~Standards incorporated by reference. Standards covering issues of occupational safety and health which have general application without regard to any specific industry are incorporated by reference in subsections (2) through (3) of this rule and in paragraph (c) of this subsection and made applicable under this rule. Such standards shall be construed according to the rules set forth in Rule 1106(3). [1910.261(a)(2)]~~

(c) ~~General incorporation of standards. Establishments subject to this rule shall comply with the following standards of the American National Standards Institute: [1910.261(a)(3)]~~

3503(1)(c)(i) ~~Identification of Gas Mask Canisters, K13.1-1967. [1910.261(a)(3)(xvi)]~~

(ii) ~~Safety Code for Ventilation and Operation of Open Surface Tanks, Z9.1-1951. [1910.261(a)(3)(xix)]~~

(iii) ~~Method of Measurement of Real Ear Attenuation of Ear Protectors at Threshold, Z24.22-1957. [1910.261(a)(3)(xxii)]~~

(iv) ~~Practices for Respiratory Protection, Z88.2-1969. [1910.261(a)(3)(xxvi)]~~

(2) ~~Safe practices~~

(a) ~~Personal protective clothing and equipment. Foot protection, shin guards, hard hats, noise attenuation devices, or other personal protective clothing and equipment shall be worn when the extent of the hazard is such as to warrant their use. Such equipment shall be worn whenever specifically required by other paragraphs of this rule and the MIOSHA Occupational Safety Standards for General Industry. All equipment shall be maintained in accordance with applicable American National Standards. Respirators, goggles, and protective masks, rubber gloves, rubber boots, and other such~~

equipment shall be cleaned and disinfected before being used by another employee. Eye, head, respiratory, and ear protection, where specified, shall conform to American National Standards Z24.22-1957, Z87.1-1968, Z88.2-1969, and Z89.1-1969.

(b) Vessel entering. See Part III of this Chapter, especially Rule 3303(3).

(3) Handling and storage of pulpwood and pulp chips. [1910.261(c)]

Handling pulp chips from railway cars, trucks and trailers. Personal protective equipment for such uses as foot, head, and eye protection shall be provided, and employees shall wear the equipment when working in the wood yard. Ear protection shall be provided when the noise level may be harmful (see Rule 2401). [1910.261(c)(6)(ii) and 1910.261(c)(7)(ii)]

(4) Handling and storage of raw materials other than pulpwood or pulp chips.

Whenever possible, all dust, fumes, and gases incident to handling materials shall be controlled at the source, in accordance with American National Standard Z9.2-1960. Where control at the source is not possible, respirators with goggles or protective masks shall be provided, and employees shall wear them when handling alum, clay, soda, ash, lime, bleach powder, sulfur, chlorine, and similar materials, and when opening rag bales. [1910.261(d)(1)(i)]

(5) Preparing pulpwood. Chipper spout.

The feed system to the chipper spout shall be arranged in such a way that the operator does not stand in a direct line with the chipper spout. All chipper spouts shall be enclosed to a height of at least 42 inches from the floor or operator's platform. If practical, a mirror should be installed to enable the chipper feeder to see the chute.

When other protection is not sufficient, the operator shall wear a safety belt line. The safety belt line shall be fastened in such a manner as to make it impossible for the operator to fall into the throat of the chipper.

Ear protection equipment shall be worn by the operator and others in the immediate area if there is any possibility that the noise level may be harmful (see Rule 2401). [1910.261(e)(18)]

(6) Chemical processes of making pulp.

(a) Protection for employees (acid plants).

(i) Gas masks, fitted with canisters containing 2 adsorbents for the particular acids, gases, or mists involved, shall be provided for employees of the acid department. [1910.261(g)(2)(i)]

(ii) Supplied-air respirators shall be strategically located for emergency and rescue use. [1910.261(g)(2)(ii)]

(b) Gas masks (digester building). Gas masks shall be available. These masks shall furnish adequate protection against sulfuric acid and chlorine gases, and shall be inspected and tested at frequent intervals, not to exceed 1 month, in accordance with American National Standards Z87.1-1968, and Z88.2-1969. [1910.261(g)(10)]

(c) Miscellaneous. Insofar as the processes of the sulfate and soda operations are similar to those of the sulfite processes, the standard of paragraphs (a) and (b) of this subsection shall apply. [1910.261(g)(18)]

(7) Bleaching.

(a) Bleach-mixing rooms.

(i) Gas masks shall be provided for emergency use, in accordance with American National Standards K13.1-1967 and Z88.2-1969. [1910.261(h)(2)(iii)]

(ii) For emergency and rescue work, independent self-contained oxygen masks or supplied-air equipment shall be provided. (See American National Standards Z88.2-1969.) [1910.261(h)(2)(iv)]

(b) Liquid chlorine.

(i) Gas masks capable of absorbing chlorine shall be supplied, conveniently placed, and regularly inspected, and workers who may be exposed to chlorine gas shall be instructed in their use. [1910.261(h)(3)(ii)]

(ii) For emergency and rescue work, independent self-contained oxygen-type masks or supplied-air equipment shall be provided. [1910.261(h)(3)(iii)]

Rule 5001 Rescinded. General requirements in: Pulp, Paper, and Paperboard Mills

(1) General requirements.

(a) Application. This rule applies to establishments where pulp, paper, and paperboard are manufactured and converted. This rule does not apply to logging and the transportation of logs to pulp, paper, and paperboard mills. [1910.261(a)(1)]

(b) Standards incorporated by reference.

Standards covering issues of occupational health which have general application without regard to any specific industry are incorporated by reference in this subsection and made applicable to pulp, paper, and paperboard mills under this rule. Such standards shall be construed according to the rules set forth in Rule 1106(3). [1910.261(a)(2)]

(c) General incorporation of standards.

Establishments subject to this rule shall comply with the following standards of the American National Standards Institute

(i) Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2-1960. [1910.261(a)(3)(xx)]

(ii) Installation of Blower and Exhaust Systems for Dust, Stock, and Vapor Removal or Conveying, Z33.1-1961. [1910.261(a)(3)(xxiii)]

(2) Personal protective equipment. For specific standards supplementing the general standards for personal protective equipment - see Rule 3503.

(3) Vessel entering. For specific standards supplementing the general standards for entry into confined spaces - see Rule 3303(3).

(4) Powered industrial trucks. For specific standards supplementing the general standards for operation of powered industrial trucks - see Rules 3225 and 4102.

~~(5) Illumination. For specific standards supplementing the general standards for illumination in mills covered by this rule – see Rule 4106(1).~~

~~(6) Contaminant control and ventilation. For specific standards supplementing the general standards for contaminant control and ventilation – see Rule 3402.~~

~~(7) Sanitary facilities. For specific standards supplementing the general standards for sanitary facilities – see Rule 4201(9)(a).~~

~~(8) Radiation. For specific standards supplementing the general standards for radiation control – see Rule 2410(17).~~