DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS

DIRECTOR'S OFFICE

GENERAL INDUSTRY SAFETY AND HEALTH STANDARD

(By authority conferred on the director of the department of licensing and regulatory affairs by sections 16 and 21 of 1974 PA 154, MCL 408.1016 and 408.1021, 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)

PART 63. PULP, PAPER, AND PAPERBOARD MILLS

GENERAL PROVISIONS

R 408.16301 Scope.

Rule 6301. (1) This standard 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 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.

History: 1979 AC; 2014 AACS; 2018 AACS.

R 408.16302 Adopted and referenced standards.

Rule 6302. (1) This standard is adopted 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 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 these rules are available for inspection at the Department of Licensing and Regulatory Affairs, MIOSHA Regulatory Services Section, 530 West Allegan Street, P.O. Box 30643, Lansing, Michigan, 48909-8143.

(4) Copies of the standards adopted in these rules may be obtained from the publisher or may be obtained from the Department of Licensing and Regulatory Affairs, MIOSHA Regulatory Services Section, 530 West Allegan Street, 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 Administration (MIOSHA) 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, 530 West Allegan Street, 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 and Health Standard Part 2 “Walking-Working Surfaces,” 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 and Health Standard Part 27 “Woodworking Machinery,” R 408.12701 to R 408.12799.

(e) General Industry Safety and Health Standard Part 33 “Personal Protective Equipment,” R 408.13301 to R 408.13398.

(f) General Industry Safety and Health Standard Part 52 “Sawmills,” R 408.15201 to R 408.15284.

(g) Occupational Health Standard Part 301 “Air Contaminants for General Industry,” 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.

History: 2014 AACS; 2018 AACS.

R 408.16303 Definitions; A, B.

Rule 6303. (1) "Aisle" means a path of travel for employees and material handling equipment.

(2) "Barker" means a machine which removes the bark from a log.

(3) "Beater" means a vessel used for blending pulp and additives and preparing the pulp for paper making.

(4) "Blow pit" means a vessel used to receive pulp from a digester.

(5) "Boom crane" means a machine with a rotating superstructure, operating machinery and boom mounted on a base, usually self-propelled, and used to lift, lower and swing loads.

(6) "Broke" means recoverable paper.

(7) "Broke hole" means an opening in a floor into which paper scrap is discharged.

History: 1979 AC.

R 408.16304 Definitions; C to E.

Rule 6304. (1) "Calender" means a machine having an assembly of rolls for producing a desired finish on paper.

(2) "Chipper" means a machine which cuts wood into chips of predetermined size.

(3) "Chock" means a wedge or block of such design and construction to hold an object in place and to prevent movement.

(4) "Core notcher" means a machine used to punch notches in ends of paper or metal cores.

(5) "Cutter" means a machine used to cut rags and paper to small pieces.

(6) "Digester" means a pressure vessel used to treat pulpwood, rags, straw or other cellulosic materials with chemicals or steam to produce pulp.

(7) "Embosser" means a machine that applies a pattern to a sheet of paper by running it between engraved rolls.

History: 1979 AC.

R 408.16305 Definitions; F to N.

Rule 6305. (1) "Flammable" means to ignite easily and rapidly burn.

(2) "Foot protection" means protective equipment, such as a metal or plastic toe cap or metatarsal device, safety shoes, or boots, which is worn on an employee's foot and which is designed to protect against injury.

(3) "Grinder" means a pulpstone wheel for grinding logs to produce wood pulp.

(4) "Guillotine trimmer" means a machine with a shearing knife used to cut sheets to size.

(5) "Hooker" means the employee who hooks the load to the hook.

(6) "Jack ladder" means a conveyor used to transport logs to a barker.

(7) "Knot cleaner" or "woodpecker" means a device used to remove knots from pulpwood.

(8) "Nip point" means that point where a rotating object creates a pinching action with another rotating object.

History: 1979 AC; 1993 AACS.

R 408.16306 Definitions; P.

Rule 6306. (1) "Paperboard mill" means a plant that manufactures paperboard from pulp or recycled paper fibers.

(2) "Paper mill" means a plant that manufactures paper from pulp or recycled paper fibers.

(3) "Pinch point" means a point at which it is possible to be caught between the moving parts of a machine, or between moving and stationary parts of a machine or between material and any part of a machine.

(4) "Pulper" means a machine designed to break up, defiber and dispense dry pulp, mill process broke, commercial waste paper or other fibrous material into slush form for further processing.

(5) "Pulp mill" means a mill which processes pulpwood, wood chips or other such cellulosic material into pulp by cooking, screening and bleaching.

(6) "Pulpwood" means a wood used in making pulp for paper.

History: 1979 AC.

R 408.16307 Definitions; R.

Rule 6307. (1) "Rag cooker" means a vessel for reducing rags to pulp by cooking in a liquid.

(2) "Rag duster" means a machine used to remove dust from rags.

(3) "Rider roll" means an idler roll which applies pressure to a roll being rewound.

(4) "Roll splitter" means a guillotine-type cutter used to split rolls of paper parallel to the core.

(5) "Rotary cutter" means a machine with revolving knives which cuts rolled paper into sheets.

History: 1979 AC.

R 408.16308 Definitions; S.

Rule 6308. (1) "Shredder" means a machine for reducing rags and paper into fine fibers.

(2) "Slasher saw" means a circular saw through which logs are moved for cutting to length.

(3) "Sole plate" means a base plate on which a machine is mounted.

(4) "Splitter block" means a device used to reduce large wood logs to a smaller size.

(5) "Stock chest" means a vessel for storage of pulp slurry.

(6) "Sulfur burner" means a furnace used to burn sulfur.

(7) "Super calender" means a machine having an assembly of rolls for producing fine finishes on paper.

History: 1979 AC.

R 408.16309 Definitions; T to V.

Rule 6309. (1) "Tipple" means a device by which a loaded railcar or truck is emptied.

(2) “Travel restraint system” means a combination of an anchorage, anchorage connector, lanyard or other means of connection, and body support that an employer uses to eliminate the possibility of an employee going over the edge of a walking-working surface.

(3) "Vessel" means a tank or vat used for storage or mixing of pulp or chemicals.

History: 1979 AC; 2018 AACS.

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 of R 408.16313 and General Industry Safety and Health Standard Part 33 "Personal Protective Equipment," as referenced in R 408.16302.

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

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

(e) Comply with the requirements of this standard.

History: 1979 AC; 1993 AACS; 2014 AACS; 2018 AACS.

R 408.16312 Employee responsibility.

Rule 6312. An employee shall do all of the following:

(a) Use personal protective equipment furnished by the employer.

(b) Report to his or her supervisor any machine or safeguard that is defective.

(c) Not remove a guard except for authorized operational or maintenance purposes. The guard shall be replaced or equivalent guarding installed before the machine is returned to production.

(d) Not operate any machine or equipment until he is trained in the operating procedures, hazards, and safeguards and has been authorized to do so.

History: 1979 AC; 2018 AACS.

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 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 prescribed in General Industry Safety and Health Standard Part 33 "Personal Protective Equipment," as referenced in R 408.16302, 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 prescribed in General Industry Safety and Health Standard Part 33 "Personal Protective Equipment," as referenced in R 408.16302, 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 prescribed in General Industry Safety and Health Standard Part 33 "Personal Protective Equipment," as referenced in R 408.16302 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 and Health Standard Part 33 "Personal Protective Equipment," as referenced in R 408.16302.

(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 as prescribed by Occupational Health Standard Part 301 "Air Contaminants for General Industry," and Part 451 "Respiratory Protection," as referenced in R 408.16302.

History: 1979 AC; 1983 AACS; 1993 AACS; 2014 AACS; 2018 AACS.

R 408.16318 Belt conveyors.

Rule 6318. (1) When conveyors cross passageways or roadways, an employer shall provide a horizontal platform under the conveyor, extended out from the sides of the conveyor a distance equal to 1 1⁄2 times the length of the wood handled.

(2) An employer shall provide the platform that shall extend the width of the road plus 2 feet (61 cm) on each side, and shall be kept free of wood and rubbish.

(3) An employer shall provide the edges of the platform with toeboards or other protection that meet the requirements of General Industry Safety and Health Standard Part 2 "Walking-Working Surfaces," as referenced in R 408.16302.

History: 2018 AACS.

R 408.16321 Illumination.

Rule 6321. (1) An employer stall furnish natural or artificial lighting 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.

(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.

(4) Emergency lighting shall be provided at stairways and passageways or aisle ways used by employees for emergency exit in case of power failure.

(5) Emergency lighting shall be provided in all plant first aid and medical facilities.

History: 1979 AC; 1983 AACS; 1993 AACS; 2014 AACS; 2018 AACS.

R 408.16322 Walking-working surfaces.

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 guardrail system and toeboard on the open side as prescribed in General Industry Safety and Health Standard Part 2 "Walking-Working Surfaces," as referenced in R 408.16302. However, a catwalk, regardless of height, above or adjacent to dangerous equipment shall be guarded with a guardrail system and toeboard.

(6) In the machine room, steps of uniform rise and tread with non-slip surfaces that meet the requirements in General Industry Safety and Health Standard Part 2 "Walking-Working Surfaces" shall be provided at each press.

History: 1979 AC; 1983 AACS; 1993 AACS; 2014 AACS; 2018 AACS.

R 408.16323 Power controls.

Rule 6323. (1) A machine shall be equipped with an emergency stop device, distinguished by its size or color, which can be activated from the operator's or crew member's work station. In addition, a rotary cutter, paper machine, and calender shall have an emergency stop device which will provide a braking action to stop the machine quickly in an emergency. This device shall be tested periodically by making use of it when stopping the machine.

(2) A machine attended by more than 1 operator shall be equipped with a control for each operator exposed to a point of operation hazard. These controls shall be interlocked to prevent operation until each operator operates his or her control concurrently.

(3) A machine control shall be designed and installed to prevent unintentional activation by contact with objects or parts of the body.

(4) A power source of any equipment to be repaired, serviced or set-up shall be locked out by each employee doing the work where unexpected startup would cause injury, except when motion is necessary during set-up or adjustment. Such motion shall be achieved by a manually held constant pressure control device. Residual pressure shall be relieved prior to and during such work when the equipment is locked out.

(5) Upon power failure, provisions shall be made to prevent machines from automatically restarting upon restoration of power.

History: 1979 AC; 2018 AACS.

R 408.16324 Machine installation.

Rule 6324. (1) A machine installed on a bench, table or stand shall be fastened to prevent unintentional movement or tipping.

(2) A machine shall be so placed that it will not be necessary for an employee to stand in an aisle.

(3) An electrically powered machine shall be grounded.

(4) A machine, which because of its type of operation builds up static electricity, shall be equipped with a device to drain the electrical charge away.

(5) A pipe containing surface heat, which can cause burns and which is within 8 feet of a floor or platform or 15 inches of a ladder shall be enclosed by insulation or a barrier to protect an employee from contact.

(6) A sole plate shall have a slip-resistant surface where the plate is crossed by an employee.

History: 1979 AC.

R 408.16325. Lubrication.

Rule 6325. (1) An employer shall ensure that lubrication is 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) An employer shall ensure that General Industry Safety Standard Part 7 “Guards for Power Transmission,” as referenced in R 408.16302, is followed.

History: 1979 AC; 2014 AACS; 2018 AACS.

R 408.16326 Hydraulic and pneumatic systems.

Rule 6326. (1) A hydraulic or pneumatic system shall have a designed safety factor of at least 4.

(2) When hydraulic, air or steam lines are bled, equipment supported by these systems shall be blocked or otherwise secured to provide for the safety of employees working on or about the equipment.

History: 1979 AC.

R 408.16327 Maintenance.

Rule 6327. Machinery and equipment in use shall be maintained in safe order.

History: 1979 AC.

R 408.16328 Guarding.

Rule 6328. (1) A lever carrying a weight shall have a bolt through the extreme end of the lever, a safety chain attached to it, or the weight shall be enclosed from its extended height to the floor or platform.

(2) When material such as chunks or cants of wood or logs can be thrown from a barker or chipper, a barrier to contain the material shall be erected and maintained.

(3) A foot switch or control shall be guarded to prevent accidental activation by falling or moving objects or by accidentally stepping on the pedal.

History: 1979 AC; 1993 AACS.

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 must 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 R 408.16342(1).

(7) The handling and storage of other materials shall conform to 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 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, an employer shall provide respirators with goggles or protective masks, 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

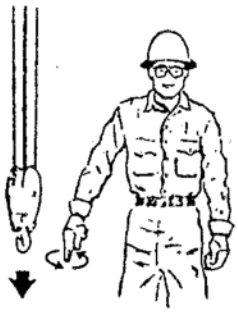
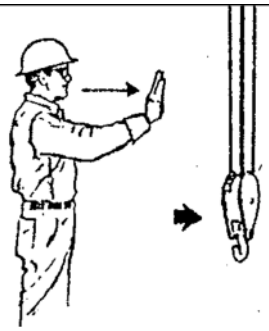
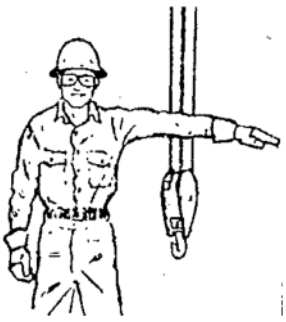
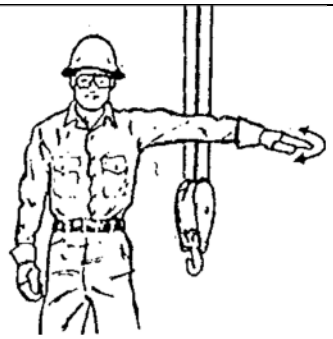
 HOIST. With forearm vertical, forefinger pointing up, move hand in small horizontal circle.	 LOWER. With arm extended downward, forefinger pointing down, move hand in small horizontal circles.	 BRIDGE TRAVEL. Arm extended forward, hand open and slightly raised, make pushing motion in direction of travel.
 TROLLEY TRAVEL.	 STOP.	 EMERGENCY STOP.

TABLE 1
STANDARD HAND SIGNALS FOR CONTROLLING OVERHEAD AND GANTRY CRANE

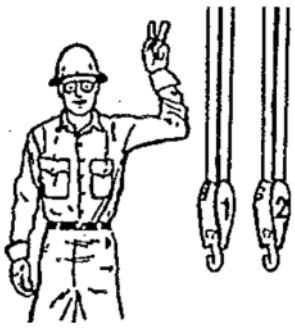
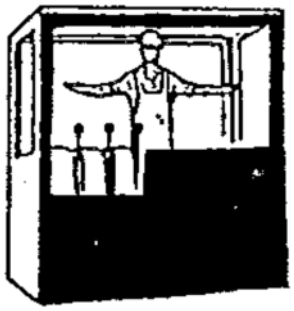
Palm up, fingers closed, thumb pointing in direction of motion, jerk hand horizontally.	Arm extended, palm down, hold position rigidly.	Arm extended, palm down, move hand rapidly right and left.
		
MULTIPLE TROLLEYS. Hold up one finger for block marked "1" and two fingers for block marked "2", Regular 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

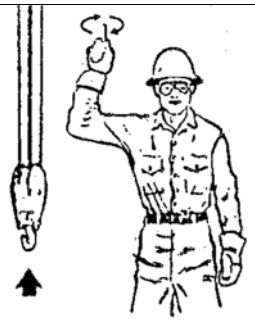
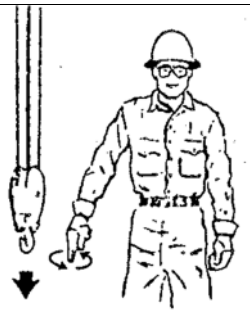
		
HOIST. With forearm vertical, forefinger pointing up, move hand in small horizontal circle.	LOWER. With arm extended downward, forefinger pointing down, move hand in small horizontal circles.	USE MAIN HOIST. Tap fist on head; then use regular signals.

TABLE 1
STANDARD HAND SIGNALS FOR CONTROLLING OVERHEAD AND GANTRY CRANE

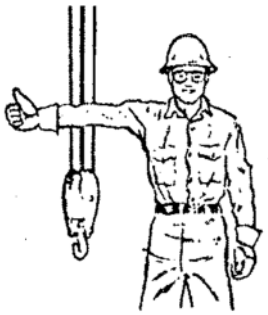
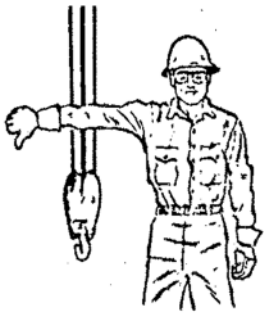
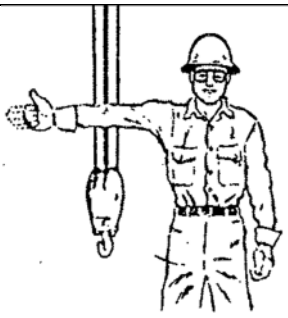
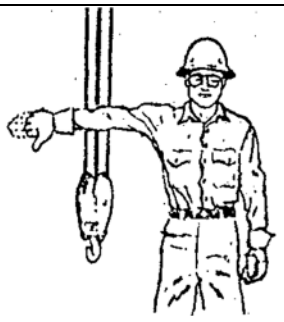
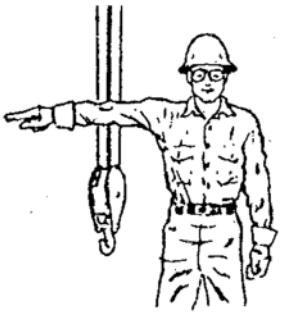
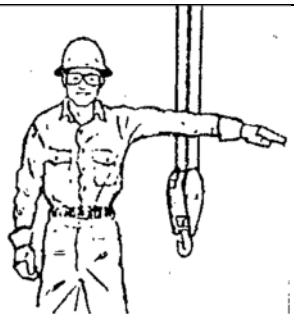
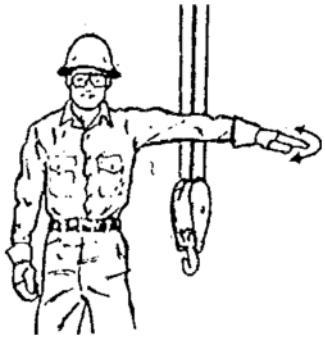
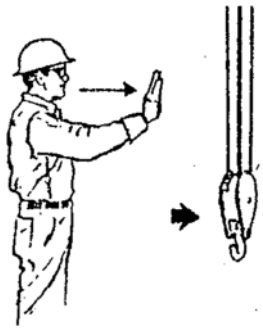
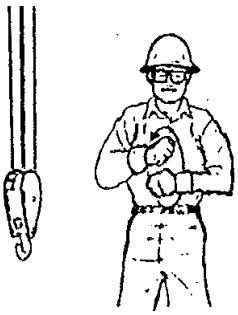
 USE WHIPLINE. (Auxiliary Hoist). Tap elbow with one hand; then use regular signals.	 RAISE BOOM. Arm Extended, fingers closed, thumb pointing upward.	 LOWER BOOM. Arm extended, fingers closed, thumb pointing downward.
 7 MOVE SLOWLY. Use one hand to give any motion signal and place other hand motionless 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.
 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.

TABLE 1
STANDARD HAND SIGNALS FOR CONTROLLING OVERHEAD AND GANTRY CRANE

 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.	

History: 1979 AC; 2014 AACS; 2018 AACS.

R 408.16332 Storage.

Rule 6332. (1) Rolls of paper, finished material, baled paper, or rags stored inside a building shall have a desired clearance of 36 inches but not less than 18 inches from a sprinkler head.

(2) Piles of wet-lap pulp, not palletized, shall be stepped back 1/2 of the width of a sheet from each end of a pile for each 8 feet of pile height. Pulp shall not be piled over pipelines to jeopardize pipes.

(3) Hand laid-up sheets of wet-lap pulp shall be interlapped to make the pile secure.

(4) Piles of wet-lap pulp shall not be undermined when being unpiled.

(5) The designed floor capacity of a building shall be posted and not be exceeded.

(6) Rolls of paper stock stored horizontally on the floor shall be chocked at the end of each row and between each roll. Where rolls are pyramided 2 or more high, chocks shall be installed between each roll on the floor. The face of each chock should be formed on a radius to conform to the average roll size in use. When rolls are decked 2 or more high, the bottom rolls shall be chocked on each side to prevent shifting in either direction.

(7) Vertically stacked rolls of paper shall be piled in a stable manner.

(8) Where smooth floors are present the chocks shall be rubber based.

History: 1979 AC.

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 and Health Standard Part 33 "Personal Protective Equipment," as referenced in R 408.16302. An employee shall be stationed outside with a self-contained respirator in a position to handle the lifeline and summon assistance.

(2) An employer shall ensure that the air inside the vessel, tank, or bin is tested prior to entry. Atmospheres containing toxic gas or vapor, or which are deficient in oxygen must 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) An employer shall ensure that controls to equipment supplying or operating a closed vessel, tank, digester, bin, or cooker are locked out or blanked before entry by an employee.

(4) An employer shall ensure that valves to supply pipes for a closed vessel, tank, digester, bin, or cooker are closed and locked out or blanked before 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 employer shall provide an employee entering the tanks with a supplied air respirator, lifebelt, and attached lifeline, 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.

History: 1979 AC; 1983 AACS; 2014 AACS; 2018 AACS.

R 408.16334 Flammable and hazardous substances.

Rule 6334. (1) When transferring flammable liquids from 1 container to another, both containers shall be grounded or bonded to drain away any static electricity generated.

(2) Flammable and hazardous substances shall be stored in an approved container at the point of usage only in quantities for not more than 1 day's usage.

(3) Chemicals which are not compatible with each other shall be effectively isolated by distance, curbing, or other means.

(4) Nonsparking tools and grounded hose shall be used when pumping out the turpentine tank. The tank shall be surrounded by a berm or moat.

History: 1979 AC.

R 408.16335 Skip hoists.

Rule 6335. An employer shall ensure that a skip hoist, unless completely enclosed, is equipped with all of the following:

(a) A warning device to announce movement.

(b) An interlocking gate across the bucket loading opening.

(c) A standard barrier across any open side.

History: 1979 AC; 2018 AACS.

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 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
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

History: 1979 AC; 2014 AACS.

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 give signals to the crane operator. The signals shall conform to Table 2 'Hand Signals for Boom-Type Cranes.'

(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.

History: 1979 AC; 2014 AACS.

R 408.16338 Blue flag warning.

Rule 6338. (1) An employer shall ensure that a locomotive or locomotive crane uses a blue flag, blue light or derailer when either of the following occur:

(a) An employee may be endangered by railcars being pushed into an area in which they are working.

(b) Loading or unloading railcars, oiling or servicing a railcar, locomotive or locomotive crane.

(2) When it is not possible to place a blue flag or blue light at a switch, a blue flag or blue light must be placed at least 50 feet from the end of the last car at both ends of the car or cars. At stub-end tracks a blue flag or blue light is necessary only at the open end.

(3) A blue flag and blue light shall be marked with the name of the department placing it.

(4) A blue flag or blue light shall not be removed except by the person who places it, except if an employee does not remove his or her blue flag or blue light and cannot be located, his or her supervisor after making a thorough check of the track area in question, in company with an operating man or woman, may remove the blue flag or blue light.

(5) Where 2 or more groups are working in the same location, a responsible employee or supervisor from each group shall each place a blue flag or blue light as specified in subrules (1) and (2) of this rule.

History: 1979 AC; 2018 AACS.

R 408.16339 Chip and bark piles.

Rule 6339. (1) Mechanical equipment, steam or compressed air lances shall be used to break down overhangs or arches caused by jamming of chips or bark.

(2) Mobile equipment shall not mount a chip or bark pile unless the operator is protected by a rollover protection device.

History: 1979 AC.

SPECIFIC PROVISIONS

R 408.16341 Woodyard unloading.

Rule 6341. (1) Where it is necessary to cut stakes holding logs on railway cars and trucks, the stake on the unloading side shall be partially cut through first and then the binder wire cut on the opposite side. The wire cutters shall have long extension handles. No employee shall be permitted on the unloading side after the stakes are cut.

(2) Where steel straps are used without stakes, employees shall stand in a safe area when the straps are cut.

(3) A railcar or truck, except a truck being unloaded or loaded by a locomotive crane, shall have the wheels chocked or the brake set during unloading or loading operations.

(4) Where binder chain and stakes are used, the binder chains shall be released and the stakes tripped from the opposite side of the load spillage.

(5) Where binder chain and crane slings are used, the crane sling shall be in place and taut before the binder chain is released. The hooker shall see that the helper is clear before signaling for the movement of the load.

(6) Before a railcar, truck, or trailer is unloaded by a tipple-type device, it shall be secured in place and all employees removed from the hazardous area.

(7) Where pulpwood is loaded on flatcars, stakes not less than 4 x 4 inches in dimensional nominal size shall be used to contain the load.

(8) A truck driver shall not remain in the truck during unloading operations.

History: 1979 AC.

R 408.16342 Woodyard piling.

Rule 6342. (1) Piling of pulpwood shall allow for a clearance of at least 24 inches between the pile and the crane cab turned at any working position.

(2) Piling of pulpwood along a standard-gage track shall allow for a clearance of 8 1/2 feet from the center line of the track to the pile.

(3) Logs shall not project from a pile into a walkway or roadway.

(4) Ends of a woodpile shall be sloped or crosstiered into the pile.

(5) Mechanical equipment shall be used to knock down wood from a woodpile.

History: 1979 AC.

R 408.16343. Flumes, runways and jack ladders.

Rule 6343. (1) A flume or water runway used to transport logs shall have a guardrail system 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 guardrail system in General Industry Safety and Health Standard Part 2 "Walking-Working Surfaces," as referenced in R 408.16302.

(2) An inclined walkway along an inclined portion of a jack ladder and the inclined portion of a runway to the jack ladder shall have cleats or a slip-resistant surface that complies with General Industry Safety and Health Standard Part 2 "Walking-Working Surfaces." The walkway shall be equipped with a stair rail on both sides as prescribed in General Industry Safety and Health Standard Part 2 "Walking-Working Surfaces."

(3) For a runway to the jack ladder, the runway from the pond or unloading dock to the table shall be protected with standard handrails and toeboards.

(4) On a runway to the jack ladder, an employer shall provide protective equipment for persons working over water.

History: 1979 AC; 2014 AACS; 2018 AACS.

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 R 408.16323(4) before the work is started.

History: 1979 AC; 2014 AACS.

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 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 General Industry Safety and Health Standard Part 52 "Sawmills," as referenced in R 408.16302.

History: 1979 AC; 2014 AACS; 2018 AACS.

R 408.16346. Barkers.

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

(2) An employer shall provide barrier guards or enclosures 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 guardrail system as prescribed in General Industry

Safety and Health Standard Part 2 “Walking-Working Surfaces,” as referenced in R 408.16302.

(4) When a platform or floor allows access to the sides of a drum barker, a guardrail system shall be installed as prescribed in General Industry Safety and Health Standard Part 2 “Walking-Working Surfaces,” 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 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.

History: 1979 AC; 2014 AACS; 2018 AACS.

R 408.16347 Chippers.

Rule 6347. (1) An employer shall ensure that an employee feeding a chipper does 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 guardrail system as prescribed in General Industry Safety and Health Standard Part 2 “Walking-Working Surfaces,” 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 must 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 in General Industry,” as referenced in R 408.16302.

History: 1979 AC; 2014 AACS; 2018 AACS.

R 408.16348 Splitter block.

Rule 6348. (1) The block upon or against which the wood is rested shall have a corrugated surface or other means provided so that the wood will not slip. Wood to be split, and also the splitting block, shall be free of ice, snow, or chips.

(2) A clear and unobstructed view shall be maintained between equipment and workers around the block and the workers' help area.

(3) Power to activate the splitter shall be controlled by a clutch or valve and shall be designed for single stroke operation only.

History: 1979 AC.

R 408.16349 Knot cleaner.

Rule 6349. A knot cleaner of the woodpecker type shall have the operating area enclosed to protect an employee passing by.

History: 1979 AC.

R 408.16350 Bleaching.

Rule 6350. (1) An employer shall ensure that the bleach-mixing rooms in which the bleach powder is mixed is 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.

History: 2014 AACS; 2018 AACS.

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

Rule 6351. (1) An employer shall ensure that the employee is provided with eye protection, a supplied air respirator, and a personal fall protection system that meets the requirements of General Industry Safety and Health Standard Part 33 "Personal Protective Equipment," as referenced in R 408.16302, during inspection, repairs or maintenance of acid towers. The line shall be extended to an attendant stationed outside the tower opening.

(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, the hoops must be made of rods rather than flat strip stock and 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, as adopted in R 408.16302.

(5) An employer shall ensure that when lead burning is performed within tanks, fresh air is 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, such as constant-flow type, shall be provided as required in Occupational Health Standard Part 451 “Respiratory Protection,” as referenced in R 408.16302.

History: 1979 AC; 1993 AACS; 2014 AACS; 2018 AACS.

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 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.

(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.

History: 1979 AC; 2014 AACS.

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 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) 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 for General Industry," as referenced in R 408.16302.

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

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

(7) 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.

History: 1979 AC; 2014 AACS; 2018 AACS.

R 408.16354 Digesters and blow pits, general.

Rule 6354. (1) An employer shall ensure that a means of egress is provided at each end of the room at every floor level of a digester building.

(2) An employer shall ensure that a batch type digester has 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 on the side of the pit instead of on the top. The opening shall be as small as possible when located on the top, and shall be protected as prescribed in General Industry Safety and Health Standard Part 2 "Walking-Working Surfaces," as referenced in R 408.16302.

(4) 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.

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

(6) Personal protective equipment as prescribed in R 408.16313 and General Industry Safety and Health 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.

(7) An employer shall ensure that fresh air is blown constantly into the digester while employees are inside. Supplied-air respirators shall be available if the fresh air supply fails or is inadequate.

(8) 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.

History: 1979 AC; 2014 AACS; 2018 AACS.

R 408.16355 Blowing a batch type digester.

Rule 6355. (1) A signal device such as a bell, horn, siren, or light shall be installed in a batch type digester or blow pit room and chip bin and used before and during blowing of the digester.

(2) A signal shall be used to warn an employee in a chip bin before loading the batch type digester.

(3) A blow-off valve shall be opened slowly, and the valve shall be left open until the digester cook signals the blow is completed.

(4) A digester cover shall not be removed until the blow has been completed. An employee removing a digester cover shall wear protective equipment to guard against burns from hot stock and steam.

History: 1979 AC.

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. Also see Rule R 408.4025 of the Michigan Boiler Rules, at web-site: http://www.michigan.gov/budget/0,4538,7-157-76309_35738_5698---,00.html.

(2) A safety valve shall be checked between each cook to 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 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 does not create a hazard for an employee.

History: 1979 AC; 2014 AACS; 2018 AACS.

R 408.16357 Smelt tanks.

Rule 6357. A smelt tank shall be equipped with a cover which will be kept closed except during sampling. A smelt tank shall be equipped with a vent stack explosion door.

History: 1979 AC.

R 408.16358 Cutters, dusters, and shredders.

Rule 6358. (1) A cutter, duster, or shredder for rags or old paper shall have the rotating heads or cylinders enclosed, except for an opening large enough only to permit feeding of stock. The enclosure shall extend over the top of the feed rolls and prevent contact with moving parts. The enclosure shall be bolted or locked into place.

(2) An employee shall stand not less than 36 inches from feed rolls on a cutter, duster, or shredder for rags or old paper, or be protected by a smooth pivoted idler roll resting on the stock or feed table, or be restrained by a safety belt and lanyard from placing any part of the body in the opening.

History: 1979 AC.

R 408.16359 Tools for rag cutting.

Rule 6359. (1) A hand knife or sharpening steel shall be equipped with a guard between the handle and the blade.

(2) A hand knife or scissors shall have rounded ends on the blade and shall be carried in a sheath or maintained on a table by a cord or chain.

History: 1979 AC.

R 408.16360 Pulp grinding and shredding.

Rule 6360. (1) A pulp grinder having a water wheel shall be equipped with a governor to limit the peripheral speed of the grinder to its rated speed.

(2) The cutting heads of a pulp shredder shall be enclosed, except for an opening to permit only the entry of stock. The enclosure shall be made of solid material or mesh with openings not more than 1/2 inch. The shredder shall be fed from a table extending not less than 36 inches from the opening, or an automatic feeding device shall be used. The enclosure shall be bolted or locked in place.

(3) Doors of pocket grinders shall be arranged so as to keep them from closing accidentally.

History: 1979 AC.

R 408.16361 Pulpers and beaters.

Rule 6361. (1) When beaters are fed from the floor above, the chute opening, if less than 42 inches (1.06 m) from the floor, shall be provided with a guardrail system that meets the requirements in General Industry Safety and Health Standard Part 2 “Walking-Working Surfaces,” as referenced in R 408.16302, or other equivalent enclosures.

(2) All pulpers having the top or any other opening of a vessel less than 42 inches (107 cm) from the floor or work platform shall have such openings guarded by guardrail systems that meet the requirements in General Industry Safety and Health Standard Part 2 “Walking-Working Surfaces,” as referenced in R 408.16302, or other equivalent enclosures

(3) When beaters have openings for manual feeding or with pulpers have openings for manual changings, openings shall be sufficient only to permit the entry of stock, and shall

be provided with at least 2 permanently secured crossrails or other fall protection system that meet the requirements in in General Industry Safety and Health Standard Part 2 “Walking-Working Surfaces,” as referenced in R 408.16302,

(4) Beater rolls shall be provided with covers.

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

(6) 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.

(7) 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.

History: 1979 AC; 2014 AACS; 2018 AACS.

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. This opening shall be covered with a door. The opening and a platform connecting 1 engine with another shall have standard guardrails that meet the requirements in General Industry Safety and Health Standard Part 2 “Walking-Working Surfaces,” as referenced in R 408.16302.

History: 1979 AC; 2014 AACS; 2018 AACS.

R 408.16363 Guillotine type cutter.

Rule 6363. (1) A guillotine type cutter shall be equipped with controls requiring each operator to use both hands throughout the cutting cycle to operate it.

(2) A guillotine cutter shall be equipped with a nonrepeat device.

(3) A carrier shall be used when transporting a guillotine type cutter knife.

History: 1979 AC.

R 408.16364 Dust.

Rule 6364. (1) Measures for the control of dust shall be provided, in accordance with General Industry Safety and Health 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.

History: 2014 AACS; 2018 AACS.

R 408.16371 Paper machine.

Rule 6371. (1) An audible alarm shall be sounded 30 seconds before starting a section of a pulp or paper machine.

(2) A disengaged doctor blade accessible to an employee shall be covered. The sharp edges shall be covered during transportation and storage.

History: 1979 AC.

R 408.16372 Dryer.

Rule 6372. (1) A barrier guard or a guardrail system as prescribed in General Industry Safety and Health Standard Part 2 “Walking-Working Surfaces,” 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.

History: 1979 AC; 2014 AACS; 2018 AACS.

R 408.16374 Nip points.

Rule 6374. (1) An inrunning nip point on a roll-type embosser, drum winder or rewinder shall be guarded by a barrier interlocked with the drive mechanism in such a manner that the barrier can be raised only when the rolls have stopped. The interlock system may allow the use of a jog switch when the barrier is open. The barrier shall be constructed so that an employee cannot reach over or around it into the nip point.

(2) A nip point, which is not a feeding point, created at calender or dryer rolls shall be guarded by a barrier.

(3) A nip point, which is a feeding point, shall be fed by a device, such as but not limited to a rope carrier, air jet or a tool, or guarded by a barrier which will keep the employee's fingers from the nip point while feeding. A hand-held device capable of going through the nip point shall not be used.

(4) An employee shall be cautioned as to an unguarded nip point by a warning sign.

History: 1979 AC.

R 408.16375 Broke hole.

Rule 6375. (1) A guardrail that complies with General Industry Safety and Health Standard Part 2 “Walking-Working Surfaces,” as referenced in R 408.16302, shall be provided at broke holes.

(2) 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 travel restraint system that will restrict the employee from falling through the hole.

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

History: 1979 AC; 2014 AACS; 2018 AACS.

R 408.16376 Rope carrying system.

Rule 6376. The sheave and support brackets of a rope carrying system shall have a designed safety factor of not less than 3.

History: 1979 AC.

R 408.16377 Calenders and platers.

Rule 6377. (1) A calender roll shall be cleaned on the outrunning side. An alloy steel scraper not less than 3 x 5 inches shall be used to remove deposits from the rolls.

(2) Platers. A guard shall be arranged across the face of the rolls to serve as a warning that the operator's hand is approaching the danger zone.

(3) An employer shall provide steps or ladders that comply with General Industry Safety and Health Standard Part 2 “Walking-Working Surfaces,” as referenced in R 408.16302, and tread with nonslip surfaces at each calendar stack.

(4) Handrails and hand grips complying with General Industry Safety and Health Standard Part 2 “Walking-Working Surfaces,” as referenced in R 408.16302, shall be provided at each calendar stack.

History: 1979 AC; 2018 AACS.

R 408.16378 Reels.

Rule 6378. (1) A reel shall not be lifted until it has stopped turning.

(2) A reel shaft having a square block end shall have the end guarded against contact.

History: 1979 AC; 1981 AACS.

R 408.16381 Winder.

Rule 6381. (1) A winder shall have a guide to align the shaft for entrance into the opened rewind bearing housing.

(2) The crane operator shall ascertain that the reel is properly seated at the winder stand or at the reel arm before he disengages the hooks.

History: 1979 AC.

R 408.16382 Rider roll.

Rule 6382. A rider roll shall be pinned or secured when it is in the raised position.

History: 1979 AC.

R 408.16383 Powered roll ejector.

Rule 6383. A powered roll ejector shall be interlocked to prevent accidental activation until the receiving platform or lowering table is in position to receive a roll.

History: 1979 AC.

R 408.16384 Roll splitter.

Rule 6384. (1) A roll splitter shall have an interlocked barrier which will cover the point of operation before the blade will descend.

(2) The blade shall be maintained in the down position when not in use.

History: 1979 AC.

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 R 408.16323(4).

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

History: 1979 AC; 2014 AACS.

R 408.16386 Slitter knives.

Rule 6386. A slitter knife shall be guarded to prevent unintentional contact. A carrier shall be used when transporting a slitter knife.

History: 1979 AC.

R 408.16387 Cores.

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

(2) A core cutter shall be guarded pursuant to General Industry Safety and Health Standard Part 27 “Woodworking Machinery,” as referenced in R 408.16302.

(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.

History: 1979 AC; 2014 AACS; 2018 AACS.

R 408.16391 Carton stitcher.

Rule 6391. A carton stitcher shall be guarded to prevent contact by the operator with the stitching head.

History: 1979 AC.

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 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.

History: 1979 AC; 2014 AACS.