

**GI Part 81. Baking Operations  
Compared With  
29 C.F.R. 1910.263 Baking Equipment**

**Summary:** The significant differences between GI Part 81. Baking Operations and 29 C.F.R. 1910.263 are in:

- Employer responsibilities
- Employee responsibilities
- Illumination
- Floors, aisles, and platforms
- Power controls and motors
- Machine installation
- Maintenance
- Housekeeping
- Dry ingredients conveyors generally
- Mechanical dumpbins and blenders
- Sifters
- Mixers generally
- Dividers and depositors
- Molders
- Roll type dough sheeters
- Oven loaders and unloaders
- Pan washers and rack washers
- Pan cooling towers
- Coolers
- Material handling
- Slicing machines
- Wafer cutting machine
- Cutting, panning, embossing, peeling, and bar machines
- Frying machines and vats
- Icing and topping machines
- Pulverizers
- Wrapping machines
- Bag loading machines
- Form-fill-seal pouch or bag machine
- Tray or carton forming and carton closing machines
- Caddy, cover, and box stitchers
- Carton and lining feeding machines
- Ovens

The comparisons show only those provisions where MIOSHA rules are different than OSHA or where MIOSHA rules are not included in 29 C.F.R.

\*\*\*\*means there is a comparable OSHA rule to this paragraph

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<p><b>R 408.18111 Employer responsibilities.</b>  <b>Rule 8111.</b> An employer shall do all of the following:            (a) Provide training to an employee as to the hazards and safe practices of the assigned job.            (b) Maintain machinery, buildings, ramps, platforms, and aisles free of recognized hazards likely to cause an injury by operation or use.</p>	<p><b>No comparable OSHA provision</b></p>
<p><b>R 408.18112 Employee responsibility.</b>  <b>Rule 8112. An employee shall:</b>            (a) Use personal protective equipment as required by this part.            (b) Not use machinery or equipment unless authorized.            (c) Not remove guards from machinery and equipment except when needed for servicing. The guards shall be replaced before returning to production.            (d) Report defective machinery, equipment and hazardous conditions, when detected, to a supervisor.</p>	<p><b>No comparable OSHA provision</b></p>

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<p><b>R 408.18113 Illumination.</b>  <b>Rule 8113.</b> Illumination shall be provided at the work station to maintain a minimum of 20 foot candles intensity.</p>	<p><b>No comparable OSHA provision</b></p>
<p><b>R 408.18114 Floors, aisles, and platforms.</b>  <b>Rule 8114.</b> (1) An aisle or floor work area shall be maintained free of protruding objects, holes, loose boards, grease, oil, accumulations of water or other objects or material which would create a tripping or slipping hazard.  (2) An aisle for combined usage of an employee and stock moving equipment shall be 2 feet wider than the widest load moved. In a place of employment having less than 10 employees producing hand crafted products in the production area, the aisle shall be not less than 30 inches wide. The aisle shall be defined.  (3) A platform, walkway, and stairway, where provided, on storage bins and machinery shall be constructed as prescribed in the general industry safety standards commission standard, Part 2. Floor and Wall Openings, Stairways, and Skylights, being R 408.10201 to R 408.10241 of the Michigan Administrative Code. A fixed ladder used in place of a stairway shall be as prescribed in the general industry safety standards commission standard, Part 3. Fixed Ladders, being R 408.10301 to R 408.10365 of the Michigan Administrative Code.</p>	<p><b>No comparable OSHA provision</b></p>
<p><b>R 408.18115 Power controls and motors.</b>  <b>Rule 8115.</b> (1) If an unexpected start up would cause an injury, the power source of any equipment to be repaired, serviced or set up shall be locked out by the employee doing the work. Any hazardous residual pressure shall be relieved prior to and during the work.  (2) Provision shall be made to prevent permanently connected machinery and equipment, other than compressors and air moving equipment used for air conditioning and refrigeration, and fire protection and pumps, from automatically restarting upon restoration of power after a power interruption if unexpected start up could cause injury.  (3) A control device, except a stop button, shall be so arranged or guarded as to prevent accidental activation where activation could cause injury.  (4) Where a hazard exists, a machine shall be equipped with an emergency stop device, red in color, which can be activated from an operator's work station.  (5) When a 2-hand control device is required, it shall require the concurrent use of both hands to activate the machine or equipment. The device shall be located in a manner to prevent bridging. Where more than 1 employee is exposed to the point of operation, a 2-hand control device shall be provided each employee and the controls shall operate concurrently.  (6) An electric motor, control and other electrical components used on dry ingredient handling and storage equipment shall be dust ignition tight.</p>	<p><b>Flour-handling equipment -</b>  <b>1910.263(d)(1) General requirements for flour handling.</b>  <b>1910.263(d)(1)(i)</b>  Wherever any of the various pieces of apparatus comprising a flour-handling system are run in electrical unity with one another the following safeguards shall apply:    <b>1910.263(d)(1)(i)(b)</b>  Wherever a flour-handling system is of such size that the beginning of its operation is far remote from its final delivery end, all electric motors operating each apparatus comprising this system shall be controlled at each of two points, one located at each remote end, either of which will stop all motors.    <b>1910.263(d)(1)(i)(d)</b>  Control circuits for magnetic controllers shall be so arranged that the opening of any one of several limit switches, which may be on an individual unit, will serve to de-energize all of the motors of that unit.    <b>1910.263(d)(2)(ii)</b>  Bag-arm elevators with manual takeoff shall be designed to operate at a capacity not exceeding seven bags per minute. The arms on the conveyor chain shall be so spaced as to obtain the full capacity of the elevator with the lowest possible chain speed. There shall be an electric limit switch at the unloading end of the bag-arm elevator so installed as</p>

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	<p>to automatically stop the conveyor chain if any bag fails to clear the conveyor arms.</p> <p><b>1910.263(d)(3)(vii)</b> A control device for stopping the dumpbin and blender shall be provided close to the normal location of the operator.</p> <p><b>1910.263(e)(1)(iii)</b> Each mixer shall be equipped with an individual motor and control, and with a conveniently located manual switch to prevent the mixer from being started in the usual manner while the machine is being serviced and cleaned.</p> <p><b>1910.263(e)(1)(iv)</b> All electrical control stations shall be so located that the operator must be in full view of the bowl in its open position. No duplication of such controls other than a stop switch shall be permitted.</p> <p><b>1910.263(e)(1)(v)</b> All mixers with power and manual dumping arrangements shall be equipped with safety devices which shall:</p> <p><b>1910.263(e)(1)(v)(a)</b> Engage both hands of the operator, when the agitator is in motion under power, and while the bowl is opened more than one-fifth of its total opening.</p> <p><b>1910.263(e)(1)(v)(b)</b> Prevent the agitator from being started, while the bowl is more than one-fifth open, without engaging both hands of the operator;</p> <p><b>1910.263(g)(3) Stopping devices.</b> There shall be a stopping device within easy reach of the operator who feeds the moulder and another stopping device within the reach of the employee taking the dough away from the moulder.</p> <p><b>1910.263(h)(2) Emergency stop bar</b> An emergency stop bar shall be provided, and so located that the body of the operator will press against the bar if the operator slips and falls toward the rolls, or if the operator gets his hand caught in the rolls. The bar shall apply the body pressure to open positively a circuit that will de-energize the drive motor. In addition, a brake which is inherently self-engaging by requiring power or force from an external source to cause disengagement shall be activated at the same time causing the rolls to stop instantly. The emergency stop bar shall be checked for proper operation every 30 days.</p> <p><b>1910.263(j)(1)(vii)(c)</b> Mechanical control levers for starting and stopping both slicing machine conveyors and wrapping machines shall be extended or so located that an operator in one location can control both machines. Such levers should be provided wherever necessary, but these should be so arranged that there is only one station capable of starting the wrapping machine and conveyor assembly, and this starting station</p>

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	<p>should be so arranged or guarded as to prevent accidental starting. The electric control station for starting and stopping the electric motor driving the wrapping machine and conveyor should be located near the clutch starting lever. Safeguards of mechanical parts.</p> <p><b>1910.263(l)(3)(i)</b> Emergency stop buttons shall be provided on mechanical ovens near the point where operators are stationed.</p> <p><b>1910.263(l)(8)(iii)</b> A main disconnect switch or circuit breaker shall be provided. This switch or circuit breaker shall be so located that it can be reached quickly and safely. The main switch or circuit breaker shall have provisions for locking it in the open position if any work on the electrical equipment or inside the oven must be performed</p>
<p><b>R 408.18116 Machine installation.</b> <b>Rule 8116.</b> (1) Electrically powered machinery and equipment shall be grounded. (2) Stationary type machinery and equipment shall be secured to a floor, foundation, bench, table or stand of such strength and design to prevent overturning or unintentional movement. (3) Permanent machinery and equipment shall not be placed so as to require an operator to stand in an aisle. Temporary equipment shall not be placed as so to require an operator to stand in an aisle, unless the employee is protected with a barrier as prescribed in rules 231 and 232 of the general industry safety standards commission standard, Part 2. Floor and Wall Openings, Stairways, and Skylights, being R 408.10231 and R 408.10232 of the Michigan Administrative Code.</p> <p>(4)****</p>	<p><b>1910.263(k)(2)(i)</b> All drive belts used in connection with sugar and spice pulverizers shall be grounded by means of metal combs or other effective means of removing static electricity. All pulverizing of sugar or spice grinding shall be done in accordance with NFPA 62-1967 (Standard for Dust Hazards of Sugar and Cocoa) and NFPA 656-1959 (Standard for Dust Hazards in Spice Grinding Plants), which are incorporated by reference as specified in Sec. 1910.6.</p> <p>Equivalent</p>
<p><b>R 408.18117 Maintenance.</b> <b>Rule 8117.</b> An employee required to work in an explosive atmosphere shall use non-sparking maintenance and cleaning tools to prevent static and mechanical sparking.</p>	<p><b>No comparable OSHA provision</b></p>
<p><b>R 408.18118 Hot surfaces.</b> <b>Rule 8118.</b> Steam pipes, hot water pipes and surfaces of machinery and equipment which would cause burns, if exposed to contact, shall be guarded with a heat resistive or insulating material or a barrier. If guarding is impractical, the exposed employee shall wear personal protective equipment.</p>	<p><b>1910.263(c)(8) Hot pipes.</b> Exposed hot water and steam pipes shall be covered with insulating material wherever necessary to protect employee from contact.</p>

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<p><b>R 408.18119 Housekeeping.</b>  <b>Rule 8119.</b> (1) Flour dust shall be removed not less than monthly from ledges, beams, sills, machinery and equipment in the make-up and flour storage areas.  (2) Flour and dough shall be removed from the floor or platform of the work station not less than daily.</p>	<p><b>No comparable OSHA provision</b></p>
<p><b>SPECIFIC EQUIPMENT</b></p>	
<p><b>R 408.18121 Dry ingredients conveyors generally.</b>  <b>Rule 8121.</b> (1) A flour handling system which has the final delivery end out of sight of the beginning point shall have a control at each point, either of which shall stop the flow of flour.  (2) A bag chute with an incline of more than 30 degrees shall be equipped with a stop at the discharge end or the end shall have a means to slow the bags.  (3) Wherever any of the various pieces of apparatus comprising a flour-handling system are run in electrical unity with one another, the control circuits for magnetic controllers shall be so arranged that the opening of any 1 of several limit switches, which may be on an individual unit, shall serve to de-energize all of the motors of that unit.  (4) A screw conveyor shall be constructed of metal or other non-splintering material.</p>	<p><b>1910.263(d)(1) General requirements for flour handling.</b>  <b>1910.263(d)(1)(i)</b>  Wherever any of the various pieces of apparatus comprising a flour-handling system are run in electrical unity with one another the following safeguards shall apply:</p> <p><b>1910.263(d)(1)(i)(b)</b>  Wherever a flour-handling system is of such size that the beginning of its operation is far remote from its final delivery end, all electric motors operating each apparatus comprising this system shall be controlled at each of two points, one located at each remote end, either of which will stop all motors.</p> <p><b>1910.263(d)(1)(i)(d)</b>  Control circuits for magnetic controllers shall be so arranged that the opening of any one of several limit switches, which may be on an individual unit, will serve to de-energize all of the motors of that unit.</p> <p><b>1910.263(d)(2) Bag chutes and bag lifts (bag-arm elevators).</b>  <b>1910.263(d)(2)(i)</b>  Bag chutes (gravity chutes for handling flour bags) shall be so designed so as to keep to a minimum the speed of flour bags. If the chute inclines more than 30 deg. from the horizontal, there shall be an upturn at the lower end of the chute to slow down the bags.</p>
<p><b>R 408.18122 Bag-arm conveyors.</b>  <b>Rule 8122.</b> A bag-arm conveyor used for transporting bags of flour or sugar with manual takeoff shall be equipped with a device installed so as to stop the conveyor automatically if any bag fails to clear the bar-arms at the discharge end. The conveyor shall be equipped with a rollback device as prescribed in rule 1429 of the general industry safety standards commission standard, Part 14. Conveyors, being R 408.11429 of the Michigan Administrative Code.</p>	<p><b>1910.263(d)(2)(ii)</b>  Bag-arm elevators with manual takeoff shall be designed to operate at a capacity not exceeding seven bags per minute. The arms on the conveyor chain shall be so spaced as to obtain the full capacity of the elevator with the lowest possible chain speed. There shall be an electric limit switch at the unloading end of the bag-arm elevator so installed as to automatically stop the conveyor chain if any bag fails to clear the conveyor arms.</p> <p><b>1910.263(d)(7)(iii)</b>  The covers of all screw conveyors shall be made removable in convenient sections, held on with stationary clamps located at proper intervals keeping all covers dust-tight. Where drop or hinged bottom sections are provided this provision shall not apply.</p>

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<p><b>R 408.18123 Storage bins and silos.</b></p> <p><b>Rule 8123.</b> (1) A dry ingredient storage bin or silo shall be equipped with a dust tight cover secured with gaskets and latches or other fasteners. A cover over a point of entry used by an employee shall be interlocked with the loading and unloading motors to prevent their operation when the cover is open. The cover shall be locked open when the bin or silo is occupied by an employee.</p> <p>(2) When an employee enters a bin or silo, he shall wear a safety belt with spark resistant fittings attached to a lifeline attended by an employee outside the bin. The employee shall be supplied with fresh air during the time work is being performed within a bin or silo.</p> <p>(3) Illumination provided inside a bin or silo shall be from an explosion-proof light fixture or explosion-proof flashlight.</p> <p>(4) A storage bin having a side of more than 5 feet in depth shall be provided with a standard stationary safety ladder both inside and outside the bin, which shall reach from floor level to the top of bin, and from the top of bin to the bottom on the inside, with the ladder end kept away from the moving screw conveyor, or shall be provided with some other means of providing equivalent safety for the employee.</p> <p>(5) A walkway surface shall be maintained in nonslip condition.</p>	<p><b>Storage</b></p> <p><b>1910.263(d)(6)(ii)</b> Storage bins shall be provided with gaskets and locks or latches to keep the cover closed, or other equivalent devices in order to insure the dust tightness of the cover. Covers at openings where an employee may enter the bin shall also be provided with a hasp and a lock, so located that the employee may lock the cover in the open position whenever it is necessary to enter the bin.</p> <p><b>1910.263(d)(6)(iii)</b> Storage bins where the side is more than 5 feet in depth shall be provided with standard stationary safety ladders, both inside and outside, to reach from floor level to top of bin and from top of bin to inside bottom, keeping the ladder end away from the moving screw conveyor.</p> <p><b>1910.263(d)(6)(vi)</b> The main entrance cover of large storage bins located at the interior exit ladder shall be provided with an electric interlock for motors operating both feed and unloading screw, so that these motors cannot operate while the cover is open.</p>
<p><b>R 408.18124 Mechanical dumpbins and blenders.</b></p> <p><b>Rule 8124.</b> (1) A opening in a mechanical dumpbin or blender shall be guarded by 1 of the following:</p> <p>(a) Parallel bars not more than 3 inches apart on centers.</p> <p>(b) Not less than 11 gauge wire mesh with openings not more than 3 inches in any direction. If an employee can reach the moving parts of the machine through the guard then the 3 inch opening shall be reduced until the hazard is eliminated.</p> <p>(2) A mechanical dumpbin and blender shall be equipped with a suction type dust hood of such capacity as to prevent dust circulation outside the hood.</p> <p>(3) Where the loading point of a manually filled mechanical dumpbin is more than 24 inches above the floor, a bag rest shall be provided.</p> <p>(4) A hinged dumpbin cover shall be provided with means to lock the cover in the open position or shall be counterbalanced so that it cannot accidentally fall down while the dumpbin is in operation.</p>	<p><b>Dumpbin and blender.</b></p> <p><b>1910.263(d)(3)(v)</b> All dumpbin and blender hoods shall be of sufficient capacity to prevent circulation of flour dust outside the hoods.</p> <p><b>1910.263(d)(3)(vi)</b> All dumpbins shall be of a suitable height from floor to enable the operator to dump flour from bags, without causing undue strain or fatigue. Where the edge of any bin is more than 24 inches above the flour, a bag rest step shall be provided.</p> <p><b>1910.263(d)(3)(vii)</b> A control device for stopping the dumpbin and blender shall be provided close to the normal location of the operator.</p>

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<p><b>R 408.18125 Sifters.</b>  <b>Rule 8125.</b> (1) A sifter shall:</p> <ul style="list-style-type: none"> <li>(a) Have all openings constructed with dust tight closures which are readily accessible for inspection purposes.</li> <li>(b) Have refuse tailing receptacles for all types of sifters readily accessible and located at a safe distance from unguarded moving parts.</li> </ul> <p>(2) Oscillating and vibrating sifters shall have all moving parts within the outer frame of the sifter or the machine located within a standard barrier as prescribed in rule 231 of the general industry safety standards commission standard, Part 2, Floor and Wall Openings, Stairways and Skylights.</p>	<p><b>1910.263(d)(8) Sifters.</b>  <b>1910.263(d)(8)(i)</b>  Enclosures of all types of flour sifters shall be so constructed that they are dust-tight but readily accessible for interior inspection.</p>
<p><b>R 408.18126 Weighing hoppers and scales.</b>  <b>Rule 8126.</b> (1) A dial cover of a scale shall be made of shatter-proof material.</p> <p>(2) A trolley flour scale shall be equipped with a bar-type handle not less than 3/4 inch in diameter for use in moving the scale.</p> <p>(3) Trolley wheels on a weigh hopper or scale located less than 8 1/2 feet from a floor or platform shall be guarded with an enclosure on all exposed sides.</p> <p>(4) A scale cut-off switch shall be totally enclosed and connected to the scale beam in a manner to protect the operator from contact.</p> <p>(5) A handle for an operating device for a trolley switch which hangs less than 6 feet 8 inches from the floor shall be of pliable material.</p>	<p><b>Flour scales.</b>  <b>1910.263(d)(9)(iii)</b>  Traveling or track-type flour scales shall be equipped with bar handles for moving same. The bar should be at least 1 inch in diameter and well away from trolley track wheels.</p>
<p><b>R 408.18127 Mixers generally.</b>  <b>Rule 8127.</b> (1) Valves and controls used to regulate the coolant to the mixer shall be located so as not to create a hazard for an employee.</p> <p>(2) A pressure regulator shall be installed on all mixer coolant supply lines and shall be set at not more than the rated pressure of the jacket.</p> <p><b>R 408.18128 Horizontal batch mixers.</b>  <b>Rule 8128.</b> (1) A horizontal batch mixer shall have control devices which require concurrent use of both hands whenever the mixer bowl is opened more than 6 inches and the agitator is energized. The controls shall be located so that the operator has a full view of the mixer bowl.</p> <p>(2) A horizontal batch mixer with a power dumping device shall have devices which require constant 2-hand control when the bowl closes the final 6 inches.</p> <p>(3) A horizontal batch mixer shall have a flour gate operating device, ingredient opening and ingredient water inlet which can be operated by the operator from the work area without endangering the operator.</p> <p>(4) An overhead cover or door on a horizontal batch mixer, which may accidentally close, shall be counterbalanced or provided a device which shall hold the door open until released by the operator.</p>	<p><b>1910.263(e) Mixers -</b>  <b>1910.263(e)(1) Horizontal dough mixers.</b></p> <p><b>1910.263(e)(1)(i)</b>  Mixers with external power application shall have all belts, chains, gears, pulleys, sprockets, clutches, and other moving parts completely enclosed.</p> <p><b>1910.263(e)(1)(iii)</b>  Each mixer shall be equipped with an individual motor and control, and with a conveniently located manual switch to prevent the mixer from being started in the usual manner while the machine is being serviced and cleaned.</p> <p><b>1910.263(e)(1)(iv)</b>  All electrical control stations shall be so located that the operator must be in full view of the bowl in its open position. No duplication of such controls other than a stop switch shall be permitted.</p> <p><b>1910.263(e)(1)(v)</b>  All mixers with power and manual dumping arrangements shall be equipped with safety devices which shall:</p>

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<p>(5) A horizontal batch mixer shall not be hosed down during cleaning unless all electrical devices are designed for such cleaning.</p> <p>(6) An ingredient or inspection opening on a horizontal batch mixer shall be not more than 1 1/2 square feet in area. The opening shall have the access limited by a bar-type grating made of not less than 3/16 inch diameter stock, or its equivalent, on 3 inch centers. If it is possible to contact moving parts, a warning sign shall be installed at the opening to caution the employee.</p> <p>(7) A device or mechanism used to return sponges to a mixer shall be so interlocked with the mixer as to prevent injury to the operator.</p> <p><b>R 408.18129 Horizontal tub-type mixers and beaters.</b></p> <p><b>Rule 8129.</b> (1) A horizontal tub-type mixer or beater shall be guarded and have the control devices prescribed in subrule (1) of rule 8128, or shall have an interlocked cover which will stop the agitator when the cover is opened.</p> <p>(2) A bottom outlet of a horizontal tub-type mixer or beater shall be so designed that an employee cannot reach the agitator or come in contact with the pinch point between the agitator and the tub.</p> <p>(3) When removing the dough from a horizontal tub-type mixer with the agitator in motion, the operator shall use a jog button, so located that the operator cannot reach the point of operation, or 2-hand constant pressure controls.</p>	<p><b>1910.263(e)(1)(v)(a)</b> Engage both hands of the operator, when the agitator is in motion under power, and while the bowl is opened more than one-fifth of its total opening.</p> <p><b>1910.263(e)(1)(v)(b)</b> Prevent the agitator from being started, while the bowl is more than one-fifth open, without engaging both hands of the operator;</p> <p><b>1910.263(e)(1)(viii)</b> Every mixer shall be equipped with a full enclosure over the bowl which is closed at all times while the agitator is in motion. Only minor openings in this enclosure, such as ingredient doors, flour inlets, etc., each representing less than 1 1/2 square feet in area, shall be capable of being opened while the mixer is in operation.</p> <p><b>1910.263(e)(1)(x)</b> Overhead covers or doors which are subject to accidental closure shall be counterbalanced to remain in an open position or provided with means to hold them open until positively released by the operator.</p> <p><b>1910.263(e)(1)(xviii)</b> Valves and controls to regulate the coolant in mixer jackets shall be located so as to permit access by the operator without jeopardizing his safety.</p>
<p><b>R 408.18130 Vertical batch mixers.</b></p> <p><b>Rule 8130.</b> (1) A bowl locking device on a vertical batch mixer, including an artoflex mixer, shall be designed to require a positive action of the operator to unlock the bowl.</p> <p>(2) If an employee can reach into a vertical mixing bowl, a warning sign shall be installed to caution the employee.</p> <p>(3) A mixer with external power application shall have all belts, chains, gears, pulleys, sprockets, clutches, and other moving parts completely enclosed as prescribed in general industry safety standard, Part 7. Guards for Power Transmission being R 408.10701 et seq. of the Michigan Administrative Code.</p> <p>(4) A mixer with a built-in power unit shall have all drive elements enclosed in such a manner as to prevent injury to an operator or a maintenance employee performing his normal duties.</p> <p>(5) A mixer shall be equipped with an individual motor and control, and with a conveniently located manual switch, to prevent the mixer from being started in the usual manner while the machine is being serviced and cleaned.</p> <p>(6) A loose access door and cover weighing more than 2 pounds shall not be used on a mixer. The door or cover shall be hinged or otherwise held in proximity to the openings which they cover.</p> <p>(7) An overhead cover or door which is subject to accidental closure shall be counterbalanced to remain in an open position, or shall be provided with a means to hold it open until positively released by the operator.</p>	<p><b>1910.263(e)(2) Vertical mixers.</b></p> <p><b>1910.263(e)(2)(i)</b> Vertical mixers shall comply with paragraphs (e)(1)(i), (iii), (ix) and (x), of this section.</p>

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<p><b>R 408.18130</b> (8) An electrical pilot or control circuit shall not be employed at a potential in excess of 240 volts.</p> <p>(9) A device shall be made available for moving a bowl, weighing more than 80 pounds with contents, into and out of the mixing position of the machine.</p>	<p><b>No comparable OSHA provisions</b></p>
<p><b>R 408.18131 Spindle mixer.</b></p> <p><b>Rule 8131.</b> A vertical spindle mixer shall be equipped with a cover which raises and lowers with the spindle head. The cover or head shall be interlocked so that the spindles cannot start when the cover is raised. A jog switch so located that the operator cannot reach the pinch point, shall be provided for cleaning the blades in a raised position, or 2-hand constant pressure controls shall be provided.</p>	<p><b>No comparable OSHA provision</b></p>
<p><b>R 408.18132 Continuous mixers.</b></p> <p><b>Rule 8132.</b> (1) A cover on a continuous mixer shall be interlocked to the power source so that the agitator will not turn when the cover is open.</p> <p>(2) A continuous mixer which starts automatically shall have a warning device which shall be activated not less than 3 seconds before start-up.</p> <p>(3) A continuous mixer with a permanent inlet that introduces solids or semi-solids shall be of a configuration which would not permit hands to come in contact with moving parts.</p>	<p><b>No comparable OSHA provision</b></p>
<p><b>R 408.18133 Dough trough elevator and dump.</b></p> <p><b>Rule 8133.</b> An elevator-type dough trough dump shall be provided with an interlocked gate so that the trough cannot be elevated or lowered until the gate is in position to protect an employee, or the trough shall be controlled constantly by an operator with a full view of the elevator area while dumping and lowering the trough the last 7 feet of travel to the floor.</p>	<p><b>1910.263(i)(3) Troughs.</b> Troughs shall be mounted on antifriction bearing casters thus making it possible for the operator to move and direct the motion of the trough with a minimum of effort.</p>
<p><b>R 408.18134 Dividers and depositors.</b></p> <p><b>Rule 8134.</b> (1) A guard at the front of a divider or depositor shall be constructed so that the dough weight can be adjusted without removal of the guard.</p> <p>(2) A guard at the back of a divider or depositor shall enclose all moving parts. The guard shall be hinged and interlocked with the power source so that the machine will not operate when the enclosure is open.</p> <p>(3) The oil hole for the knife at the back of a divider shall be of such size that a finger cannot enter the hole.</p> <p>(4) Any elongated hole in the knife actuating arm on a divider shall be covered with a saddle guard or other protective device.</p> <p>(5) Start and stop control buttons on a divider or depositor shall be oil-tight and other electrical components shall be either oil-tight or located to prevent the entrance of oil.</p>	<p><b>1910.263(f) Dividers.</b> <b>1910.263(f)(3)</b> Rear of divider. The back of the divider shall have a complete cover to enclose all of the moving parts, or each individual part shall be enclosed or guarded to remove the separate hazards. The rear cover shall be provided with a limit switch in order that the machine cannot operate when this cover is open. The guard on the back shall be hinged so that it cannot be completely removed and if a catch or brace is provided for holding the cover open, it shall be designed so that it will not release due to vibrations or minor bumping whereby the cover may drop on an employee.</p>

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<p><b>R 408.18135 Molders.</b></p> <p><b>Rule 8135.</b> (1) An emergency stop device as prescribed in subrule (4) of rule 8115 shall be provided for the employee feeding and tailing a molder.</p> <p>(2) A mold shall be so designed or guarded to prevent a shearing action at any clean-out hole.</p> <p>(3) A hand-fed molder shall have a belt feed device, or the hopper shall be extended high enough or have a barrier to prevent an employee's hand from contact with the in-running rolls. The top edge of such a hopper shall be well rounded to prevent injury when it is struck or bumped by the employee's hand.</p> <p>(4) A mechanical feed molder shall be provided with a hopper so designed and connected to the proofer that an employee's hands cannot come in contact with the in-running rolls.</p> <p>(5) Where a removable crank is provided to adjust the molder, brackets shall be provided to hold the crank when it is not in use. The brackets shall be interlocked with the power source so that the molder cannot run until the crank is repositioned on the brackets.</p> <p>(6) Each molder shall have individual drives and controls.</p> <p>(7) Electric control buttons and components shall be dust tight.</p>	<p><b>1910.263(g)(2) Hand-fed moulders.</b></p> <p>Hand-fed moulders shall be provided with a belt-feed device or the hopper shall be extended high enough so that the hands of the operator cannot get into the feed rolls. The top edge of such a hopper shall be well rounded to prevent injury when it is struck or bumped by the employee's hand.</p>
<p><b>R 408.18138 Roll type dough sheeters.</b></p> <p><b>Rule 8138.</b> (1) A roll type dough sheeter shall be equipped with a barrier guard so located as to prevent fingers from getting into the nip point or an emergency stop bar shall be provided across the length of the rolls so designed that it will stop the rolls on contact with the operator's hand or arm. A material, such as preformed or expanded metal, which allows visual monitoring, is preferable for a barrier guard.</p> <p>(2) A guard, which completely covers the gears, shall be provided and designed to allow adjustment of the gears.</p> <p>(3) The hopper for a hand fed sheeter shall be equipped with an emergency stop bar or stopping device readily accessible to the operator or the hopper design shall be such that the operator cannot reach the rolls.</p>	<p><b>1910.263(k)(7) Box- and roll-type dough sheeters.</b></p> <p><b>1910.263(k)(7)(ii)</b></p> <p>Hoppers for sheeters shall have an automatic stop bar or automatic stopping device along the back edge of the hopper. If construction does not permit location at the back edge, the automatic stop bar or automatic stopping device shall be located where it will be most effective to accomplish the desired protection.</p>
<p><b>R 408.18139 Bun intermediate proofers.</b></p> <p><b>Rule 8139.</b> (1) A star wheel feeder on a bun intermediate proofer shall be enclosed by a hinged guard on all sides except for an opening to receive the dough. The hinged portion shall be designed to open up when struck by a hand.</p> <p>(2) The moving parts of a bun intermediate proofer exposed to contact shall be enclosed.</p>	<p><b>No comparable OSHA provision</b></p>

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<p><b>R 408.18141 Oven loaders and unloaders.</b></p> <p><b>Rule 8141.</b> (1) A hand fed overhand bar oven loader shall be equipped with 2-hand controls wired to operate concurrently with the buttons guarded by covers, rings or by location to prevent bridging, or the oven loader shall be hung in a manner that allows the overhand bar itself to be raised to stop the loader drive. The overhand bar shall be made of aluminum or other equivalent light weight material. Pressure shall be maintained on the controls until the pinch point has passed.</p> <p>(2) Exposed levers, controls, adjustment knobs and handles shall be recessed, flush or guarded to avoid catching of clothing.</p> <p>(3) A portable oven loader and unloader shall have a locking or clamping device to prevent movement during operation.</p> <p>(4) The oven loader and unloader drive shall have overload, instant trip delay, clutch or equivalent means to stop equipment in case of a jam.</p>	<p><b>No comparable OSHA provision</b></p>																																				
<p><b>R 408.18142 Pan washers and rack washers.</b></p> <p><b>Rule 8142.</b> (1) The safety controls on a pan washer or rack washer shall be inspected and maintained not less than as prescribed in table 1.</p> <p>(2) A pan washer or rack washer shall have an emergency door latch on the door so an operator may open the door from the inside.</p> <p>(3) Where the controls of a pan or rack washer are subject to water spray or splash, they shall be the waterproof type.</p> <p>(4) A pan washer shall be guarded to protect the operator from overspray and the overflow and drain stand pipes shall be arranged to prevent backflow of liquids from hitting the operator.</p> <p>(5) Table 1 reads as follows:</p> <div style="text-align: center; background-color: #e0e0e0; padding: 5px; margin: 10px 0;"> <p><b>TABLE 1</b>  <b>Safety Control Inspection</b>  <b>Guide For Washers And Ovens</b></p> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">Items</th> <th style="width: 20%;">Monthly</th> <th style="width: 20%;">Semi-annually</th> </tr> </thead> <tbody> <tr><td>Fuel safety shutoff valve</td><td style="text-align: center;">X</td><td></td></tr> <tr><td>Combustion safeguard</td><td style="text-align: center;">X</td><td></td></tr> <tr><td>Time delay switches</td><td></td><td style="text-align: center;">X</td></tr> <tr><td>Fan failure interlocks</td><td></td><td style="text-align: center;">X</td></tr> <tr><td>Conveyor failure interlocks</td><td></td><td style="text-align: center;">X</td></tr> <tr><td>Temperature limit switches</td><td></td><td style="text-align: center;">X</td></tr> <tr><td>Pressure supervising switches</td><td></td><td style="text-align: center;">X</td></tr> <tr><td>Door and damper limit switches</td><td></td><td style="text-align: center;">X</td></tr> <tr><td>Automatic fire checks</td><td></td><td style="text-align: center;">X</td></tr> <tr><td>Explosion venting latches on doors</td><td></td><td style="text-align: center;">X</td></tr> <tr><td>Operation sequencing tests of auxiliaries</td><td></td><td style="text-align: center;">X</td></tr> </tbody> </table>	Items	Monthly	Semi-annually	Fuel safety shutoff valve	X		Combustion safeguard	X		Time delay switches		X	Fan failure interlocks		X	Conveyor failure interlocks		X	Temperature limit switches		X	Pressure supervising switches		X	Door and damper limit switches		X	Automatic fire checks		X	Explosion venting latches on doors		X	Operation sequencing tests of auxiliaries		X	<p><b>1910.263(i)(15) Pan washing tanks.</b>  <b>1910.263(i)(15)(ii)</b>  The surface of the floor of the working platform shall be maintained in nonslip condition.</p> <p><b>1910.263(i)(15)(v)</b>  Power ventilated exhaust hoods shall be provided over the tanks.</p> <p><b>No comparable OSHA provisions</b></p>
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Fuel safety shutoff valve	X																																				
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<p><b>R 408.18143 Pan cooling towers.</b>  <b>Rule 8143.</b> (1) A pan cooling tower extending more than 1 floor in height shall have a stop switch at each floor. The conveying means shall be restarted only at the location where stopped or at the main source after the stopped switch has been reset.  (2) Sides of a pan cooling tower not used for loading and unloading shall be enclosed or barrier guarded to a height of 8 feet.</p>	<p><b>Pan cooling towers.</b>  <b>1910.263(k)(12)(i)</b>  Where pan cooling towers extend to two or more floors, a lockout switch shall be provided on each floor in order that mechanics working on the tower may positively lock the mechanism against starting. Only one start switch shall be used in the motor control circuit.</p>
<p><b>R 408.18144 Coolers.</b>  <b>Rule 8144.</b> (1) The drive on a mechanical feed rack or tray-type cooler shall be equipped with an overload device designed to cut the power in case of a jam. The device shall not restart the drive automatically when the jam is cleared.  (2) A mechanical feed rack and tray cooler shall actuate a warning device when it enters a dwell condition caused by the backup of production at a unit downstream.  (3) A cooler having an access door for body entry shall be equipped with a means for opening the door from the inside and the outside.</p>	<p><b>Bread coolers, rack type.</b>  <b>1910.263(i)(20)(ii)</b>  All door locks shall be operable from both within and outside the cooler.</p>
<p><b>R 408.18145 Material handling.</b>  <b>Rule 8145.</b> (1) A rack used to transport bake goods within a bakery production area shall be equipped with:  (a) Handles so located that no part of an employee's hand extends beyond the outer edge of the frame when holding the handles.  (b) Castors with an anti-friction bearing swivel arrangement for better control.  (2) A trough shall be mounted on anti-friction bearing castors to make it possible for the operator to move and direct the motion of the trough with a minimum of effort.  (3) A lock or other device shall be provided to hold the handle in a vertical position when a hand-operated lift truck is not in use.  (4) Castors on hand trucks shall be set back from corners to be out of the way of toes and heels, but not far enough back to cause the truck to be unstable. A lock or other device shall be provided to hold the handle in vertical position when the truck is not in use.  (5) A chain tackle shall be prominently, permanently, and legibly marked with maximum load capacity. Safety latches shall be installed on all hooks.  (6) Trough hoists shall be prominently, permanently, and legibly marked with maximum load capacity. Safety devices shall be provided to hold the load in any position. Safety latches shall be installed on all hooks.  (7) Sharp corners and edges on bread and cake boxes and trays shall be eliminated on metal parts. All wooden corners and edges shall be protected to prevent splinters.</p>	<p><b>1910.263(i)(3) Troughs.</b>  Troughs shall be mounted on antifriction bearing casters thus making it possible for the operator to move and direct the motion of the trough with a minimum of effort.</p> <p><b>1910.263(i)(4) Hand trucks.</b>  <b>1910.263(i)(4)(i)</b>  Casters shall be set back from corners to be out of the way of toes and heels, but not far enough back to cause the truck to be unstable.</p> <p><b>1910.263(i)(4)(ii)</b>  A lock or other device shall be provided to hold the handle in vertical position when the truck is not in use.</p> <p><b>1910.263(i)(5) Lift trucks.</b>  A lock or other device shall be provided to hold the handle in vertical position when the truck is not in use.</p> <p><b>1910.263(i)(6) Racks.</b>  <b>1910.263(i)(6)(ii)</b>  Racks shall be equipped with handles so located with reference to the frame of the rack that no part of the operator's hands extends beyond the outer edge of the frame when holding onto the handles.</p> <p><b>1910.263(i)(6)(iii)</b>  Antifriction bearing casters shall be used to give the operator better control of the rack.</p> <p><b>1910.263(i)(7) Conveyors.</b>  <b>1910.263(i)(7)(i)</b>  Wherever a conveyor passes over a main aisle way, regularly occupied work area, or passageway, the</p>

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	<p>underside of the conveyor shall be completely enclosed to prevent broken chains or other material from falling in the passageway.</p> <p><b>1910.263(i)(7)(ii)</b> Stop bumpers shall be installed on all delivery ends of conveyors, wherever manual removal of the product carried is practiced.</p> <p><b>1910.263(i)(7)(iii)</b> Where hazard of getting caught exists a sufficient number of stop buttons shall be provided to enable quick stopping of the conveyor.</p> <p><b>1910.263(i)(11) Ingredient premixers, emulsifiers, etc.</b> <b>1910.263(i)(11)(i)</b> All top openings shall be provided with covers attached to the machines. These covers should be so arranged and interlocked that power will be shut off whenever the cover is opened to a point where the operator's fingers might come in contact with the beaters.</p> <p><b>1910.263(i)(12) Chain tackle.</b> <b>1910.263(i)(12)(i)</b> All chain tackle shall be marked prominently, permanently, and legibly with maximum load capacity.</p> <p><b>1910.263(i)(12)(ii)</b> All chain tackle shall be marked permanently and legibly with minimum support specification.</p> <p><b>1910.263(i)(12)(iii)</b> Safety hooks shall be used.</p> <p><b>1910.263(i)(13) Trough hoists, etc.</b> <b>1910.263(i)(13)(i)</b> All hoists shall be marked prominently, permanently, and legibly with maximum load capacity.</p> <p><b>1910.263(i)(13)(ii)</b> All hoists shall be marked permanently and legibly with minimum support specifications.</p> <p><b>1910.263(i)(13)(iii)</b> Safety catches shall be provided for the chain so that the chain will hold the load in any position.</p> <p><b>1910.263(i)(13)(iv)</b> Safety hooks shall be used.</p>
<p><b>R 408.18148 Chocolate melting, refining and mixing kettles.</b> <b>Rule 8148.</b> A chocolate melting, refining and mixing kettle shall be equipped with an electrically interlocked cover to stop agitation when the cover is opened.</p>	<p><b>1910.263(k)(13) Chocolate melting, refining, and mixing kettles.</b> Each kettle shall be provided with a cover to enclose the top of the kettle. The bottom outlet of each kettle shall be of such size and shape that the operator cannot reach in to touch the revolving paddle or come in contact with the shear point between the paddle and the side of the kettle.</p>

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<p><b>R 408.18151 Slicing machines.</b></p> <p><b>Rule 8151.</b> (1) A slicing machine shall be equipped with a device which shall be used to push the loaf through the knives without contacting the moving knives.</p> <p>(2) A slicing machine with reciprocating knives shall have the knife frames guarded by an interlocked cover.</p> <p>(3) A slicing machine with endless band knives shall have:</p> <p>(a) The drive motor equipped with an automatic brake which shall be applied when the motor is not energized.</p> <p>(b) An interlocked cover or door over each point of access which deenergizes the drive motor when the cover or door is opened.</p> <p>(c) A safety device which deenergizes the drive motor when a knife breaks.</p> <p>(d) A honing or sharpening device for the knife which shall be so designed as to protect the employee from the knife while doing the work.</p> <p>(e) Any transparent inspection ports made of shatterproof material.</p> <p>(4) An automatically fed slicing machine used in conjunction with a wrapping or bag loading machine shall have starting controls for both machines at 1 location and a stop device at each point of operation.</p> <p>(5) Where pusher fingers attached to the feed chain enter the bed plate of the cross feed, the end guard shall be extended to cover the pinch point.</p>	<p><b>1910.263(j) Slicers and wrappers.</b></p> <p><b>1910.263(j)(1) Slicers.</b></p> <p><b>1910.263(j)(1)(iii)</b> The cover over the knife head of reciprocating-blade slicers shall be provided with an interlocking arrangement so that the machine cannot operate unless the cover is in place.</p> <p><b>1910.263(j)(1)(iv)</b> On slicers with endless band knives, each motor shall be equipped with a magnet brake which operates whenever the motor is not energized. Each door, panel, or other point of access to the cutting blades shall be arranged by means of mechanical or electric interlocks so that the motor will be deenergized if all such access doors, panels, or access points are not closed.</p> <p><b>1910.263(j)(1)(v)</b> When it is necessary to sharpen slicer blades on the machine, a barrier shall be provided leaving only sufficient opening for the sharpening stone to reach the knife blades.</p> <p><b>1910.263(j)(1)(vii) Slicer wrapper conditions.</b></p> <p><b>1910.263(j)(1)(vii)(c)</b> Mechanical control levers for starting and stopping both slicing machine conveyors and wrapping machines shall be extended or so located that an operator in one location can control both machines. Such levers should be provided wherever necessary, but these should be so arranged that there is only one station capable of starting the wrapping machine and conveyor assembly, and this starting station should be so arranged or guarded as to prevent accidental starting. The electric control station for starting and stopping the electric motor driving the wrapping machine and conveyor should be located near the clutch starting lever.</p>
<p><b>R 408.18152 Wafer cutting machine.</b></p> <p><b>Rule 8152.</b> A wafer cutting machine shall be guarded to prevent the operator's hand from making contact with the saw or knife.</p>	<p><b>No comparable OSHA provision</b></p>

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<p><b>R 408.18153 Cutting, panning, embossing, peeling, and bar machines.</b></p> <p><b>Rule 8153.</b> (1) The manually fed rolls of a cutting, panning, embossing, peeling, and bar machine shall be guarded in front of the rolls by 1 of the following:</p> <ul style="list-style-type: none"> <li>(a) A mechanical guard across the rolls to prevent entry of fingers into nip points.</li> <li>(b) An emergency stop bar designed as prescribed in R 408.18136(2) to stop the rolls when contact is made with the bar.</li> </ul> <p>(2) The blade of a cutting machine shall be guarded to prevent contact of the operator's fingers.</p> <p>(3) The band bar-type goods cutter shall be guarded on each side of the drive mechanism of the ovenband and in the vertical run of the cutter.</p>	<p><b>No comparable OSHA provision</b></p>
<p><b>R 408.18154 Rotary, pretzel rolling and pretzel extruding machines.</b></p> <p><b>Rule 8154.</b> (1) The forcing rolls within a dough hopper on a rotary, pretzel rolling and pretzel extruding machine shall be guarded as prescribed for feed hoppers in rule 8160.</p> <p>(2) A rotary, pretzel rolling and pretzel extruding machine shall have an emergency stop bar at the operator's station so located that it can be operated by the operator's body.</p>	<p><b>1910.263(k)(9) Rotary, die machines, pretzel rolling, and pretzel-stick extruding machines.</b></p> <p>Dough hoppers shall have the entire opening protected with substantial grid-type guards to prevent the employee from getting his hands caught in moving parts, or the hopper shall be extended high enough so that the operator's hands cannot get into moving parts.</p>

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<p><b>R 408.18155 Frying machines and vats, construction.</b></p> <p><b>Rule 8155.</b> (1) A frying machine or vat shall be insulated or guarded where burns can result from accidental contact with the outside covering.</p> <p>(2) A frying machine or vat shall be equipped with an automatic temperature control. In addition, the machine or vat shall have an over temperature control device unadjustable and preset below the flash point of the frying fat which will turn off the heating device.</p> <p>(3) An automatic frying machine or vat with an internal heating device shall be equipped with a low level frying fat cut off device designed to turn off the heat device when the fat level is less than 1 inch above the heating tubes or elements.</p> <p>(4) Where forced draft or an automatic damper is used for exhausting combustion fumes, it shall be interlocked with the fuel supply valve of the frying machine or vat.</p> <p>(5) If the frying machine or vat is designed with a closed combustion chamber, a time delay relay shall be installed, in connection with the exhauster, to purge the chamber before ignition can be made.</p> <p>(6) The heat transfer piping shall be installed to allow for natural expansion of the pipe.</p> <p>(7) Where a separate heat exchanger is used in conjunction with the frying machine or vat, subrules (1), (2) and (8) shall be followed for the heat exchanger.</p> <p>(8) A frying machine or vat shall be equipped with a device which will shut off the fuel supply if the pilot or burner flames out.</p>	<p><b>1910.263(i)(22) Doughnut machines.</b> Separate flues shall be provided,</p> <p><b>1910.263(i)(22)(i)</b> for venting vapors from the frying section, and</p> <p><b>1910.263(i)(22)(ii)</b> for venting products of combustion from the combustion chamber used to heat the fat.</p> <p><b>1910.263(i)(23) Open fat kettles.</b></p> <p><b>1910.263(i)(23)(i)</b> The floor around kettles shall be maintained in nonslip condition.</p> <p><b>1910.263(i)(23)(iv)</b> The top of the kettle shall be not less than 36 inches above floor or working level.</p>
<p><b>R 408.18156 Frying machines and vats, installation.</b></p> <p><b>Rule 8156.</b> (1) A frying machine or vat shall be installed on a noncombustible floor, or a metal pan flanged on 4 sides shall be installed underneath the entire machine. The capacity of the pan shall be not less than the frying tank.</p> <p>(2) A frying machine or vat shall have not less than 30 inches of work space on all exposed sides, except where other equipment is connected to the machine.</p> <p>(3) A frying machine or vat shall be protected by a fixed fire extinguishing system as prescribed in the general industry safety standards commission standard, Part 9, Fixed Fire Equipment, being R 408.10901 to R 408.10983 of the Michigan Administrative Code, or portable fire extinguishers as prescribed in the general industry safety standards commission standard, Part 8, Portable Fire Extinguishers, being R 408.10801 to R 408.10839 of the Michigan Administrative Code.</p> <p>(4) Where a non-pressure type of indirect heat is used with a frying machine or vat the welded seams of the plate coils on the frying kettle shall not make contact with the welded seams of the kettle proper.</p>	<p><b>1910.263(i)(22) Doughnut machines.</b> Separate flues shall be provided, (i) for venting vapors from the frying section, and (ii) for venting products of combustion from the combustion chamber used to heat the fat.</p> <p><b>1910.263(i)(23) Open fat kettles.</b></p> <p><b>1910.263(i)(23)(i)</b> The floor around kettles shall be maintained in nonslip condition.</p> <p><b>1910.263(i)(23)(iv)</b> The top of the kettle shall be not less than 36 inches above floor or working level.</p>

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<p><b>R 408.18157 Fry machines and vats, maintenance.</b>  <b>Rule 8157.</b> Not less than every 90 days the following shall be accomplished:</p> <ul style="list-style-type: none"> <li>(a) The drying machine or vat shall be washed and boiled out to remove all accumulations of gum.</li> <li>(b) The controls shall be checked for operability.</li> <li>(c) The gas and oil burners shall be cleaned and adjusted.</li> </ul>	<p><b>1910.263(i)(22) Doughnut machines.</b>  Separate flues shall be provided,</p> <p><b>1910.263(i)(22)(i)</b> for venting vapors from the frying section, and</p> <p><b>1910.263(i)(22)(ii)</b> for venting products of combustion from the combustion chamber used to heat the fat.</p> <p><b>1910.263(i)(23) Open fat kettles.</b>  <b>1910.263(i)(23)(i)</b>  The floor around kettles shall be maintained in nonslip condition.</p> <p><b>1910.263(i)(23)(iv)</b>  The top of the kettle shall be not less than 36 inches above floor or working level.</p>
<p><b>R 408.18158 Icing and topping machines.</b>  <b>Rule 8158.</b> (1) An agitator for an icing and topping machine which is too heavy to lift out shall be hinged to swing up, out of the way, or lifted by mechanical means so the hopper may be removed.</p> <p>(2) A hot water or steam jacketed hopper for an icing and topping machine shall have a pressure relief valve set at not more than the maximum allowable working pressure of the vessel. The hopper shall be insulated or guarded to prevent burns from accidental contact. The valve shall be vented to an area where the employee is not exposed to the hazard.</p>	<p><b>No comparable OSHA provision</b></p>
<p><b>R 408.18159 Pulverizers.</b>  <b>Rule 8159.</b> (1) A belt drive used in connection with a pulverizer shall be grounded to remove static electricity.</p> <p>(2) Pulverizing equipment shall be dust tight. Electrical equipment and motors located in the room or area shall be dust ignition proof, Class II, Division I type.</p> <p>(3) A magnetic separator shall be installed at the material inlet to a pulverizer.</p> <p>(4) When there are multiple pulverizers and the final pulverized material is pneumatically conveyed, each conveyor system shall be independent of the other and electrically grounded to reduce the likelihood of fire or explosion.</p>	<p><b>1910.263(k)(1) Meal, peanut, and fig grinders.</b>  <b>1910.263(k)(1)(i)</b>  If the hopper is removable it shall be provided with an electric interlock so that the machine cannot be put in operation when the hopper is removed.</p> <p><b>1910.263(k)(1)(ii)</b>  Where grid guards cannot be used, feed conveyors to hoppers, or baffle-type hoppers, shall be provided. Hoppers in such cases shall be enclosed and provided with hinged covers, and equipped with electric interlock to prevent operation of the machine with the cover open.</p> <p><b>1910.263(k)(2) Sugar and spice pulverizers.</b>  <b>1910.263(k)(2)(i)</b>  All drive belts used in connection with sugar and spice pulverizers shall be grounded by means of metal combs or other effective means of removing static electricity. All pulverizing of sugar or spice grinding shall be done in accordance with NFPA 62-1967 (Standard for Dust Hazards of Sugar and Cocoa) and NFPA 656-1959 (Standard for Dust Hazards in Spice Grinding Plants), which are incorporated by reference as specified in Sec. 1910.6.</p>

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<p><b>R 408.18160 Feed hoppers.</b></p> <p><b>Rule 8160.</b> (1) A feed hopper for a grinder, pulverizer or food chopper shall have a guard over the hopper opening. The guard shall be 1 of the following:</p> <ul style="list-style-type: none"> <li>(a) A grid with openings small enough to keep the fingers from touching the feeding knives or worm.</li> <li>(b) A solid cover interlocked to the operating controls so that the machine will not operate when the cover is open.</li> <li>(c) A hopper of such length or opening that the fingers cannot touch the knives.</li> </ul> <p>(2) A feed hopper which is removable from the grinder, pulverizer or food chopper shall be interlocked to prevent operation of the machine when the hopper is removed.</p>	<p><b>1910.263(g)(1) Hoppers.</b> Mechanical feed moulders shall be provided with hoppers so designed and connected to the proofer that an employee's hands cannot get into the hopper where they will come in contact with the in-running rolls.</p> <p><b>1910.263(g)(2) Hand-fed moulders.</b> Hand-fed moulders shall be provided with a belt-feed device or the hopper shall be extended high enough so that the hands of the operator cannot get into the feed rolls. The top edge of such a hopper shall be well rounded to prevent injury when it is struck or bumped by the employee's hand.</p> <p><b>1910.263(k)(1)(i)</b> If the hopper is removable it shall be provided with an electric interlock so that the machine cannot be put in operation when the hopper is removed.</p> <p><b>1910.263(k)(1)(ii)</b> Where grid guards cannot be used, feed conveyors to hoppers, or baffle-type hoppers, shall be provided. Hoppers in such cases shall be enclosed and provided with hinged covers, and equipped with electric interlock to prevent operation of the machine with the cover open.</p>
<p><b>R 408.18161 Chocolate and fig breaking machines.</b></p> <p><b>Rule 8161.</b> A chocolate and fig breaking machine shall be guarded as prescribed in rule 8160.</p>	<p><b>See 1910.263(k)(1) Meal, peanut, and fig grinders.</b></p>
<p><b>R 408.18171 Wrapping machines.</b></p> <p><b>Rule 8171.</b> (1) An electric sealing heater on a wrapping machine shall have the exposed heated surfaces guarded to prevent burns from accidental contact.</p> <p>(2) Where more than 1 operator is feeding a wrapping machine, each operator shall have an emergency stop button as prescribed in R 408.18115(4), but there shall be only 1 start button station.</p> <p>(3) A pouch-wrapping machine shall be equipped with a trip gate or interlocked enclosure ahead of or over the sealing jaws and wrapper guide.</p> <p>(4) Electric wiring for the wrapper heaters shall be arranged so that a minimum number of wires are used to connect the movable heaters assembly to the permanent wiring of the machine. This wiring shall be the heat resisting type, as prescribed in the general industry safety standards commission standards, 1910.308 Application and 1910.309 National Electrical Code.</p>	<p><b>1910.263(j)(2) Wrappers.</b></p> <p><b>1910.263(j)(2)(iii)</b> Electrical heaters on wrappers shall be protected by a cover plate properly separated or insulated from the heaters in order that accidental contact with this cover plate will not cause a burn to the operator.</p>

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<p><b>R 408.18172 Carton wrapping machines.</b></p> <p><b>Rule 8172.</b> (1) An electric sealing heater on a carton wrapping machine shall be as prescribed in subrule (1) of rule 8171.</p> <p>(2) A hot metal glue pot for a carton wrapping machine shall have the heated surfaces insulated or guarded to prevent burns from accidental contact.</p> <p>(3) The in-running nip points of power driven rolls shall be guarded.</p> <p>(4) Pusher bars and pusher fingers of a carton wrapping machine which creates a hazard for an employee shall be guarded by a barrier or enclosure.</p> <p>(5) An end-seal drum on a carton wrapping machine shall be guarded at the pinch point and point of operation.</p> <p>(6) An access cover or door on a carton wrapping machine shall be interlocked as prescribed in subrule (3) of rule 8151.</p> <p>(7) Where more than 1 operator is feeding a carton wrapping machine, each operator shall be provided controls prescribed in subrule (5) of rule 8115.</p> <p>(8) Where a safety switch is used to detect jams of product flow on a carton wrapping machine, the machine shall have a manual reset to prevent automatic restarting when the jam has been cleared.</p>	<p><b>No comparable OSHA provision</b></p>
<p><b>R 408.18173 Bag loading machines.</b></p> <p><b>Rule 8173.</b> (1) A bag magazine feed and the funnel section of a bag loading machine shall be guarded by a movable panel or guard equipped with an interlock which stops the motion of all parts when the panel or guard is in an open position.</p> <p>(2) A bag loading machine having a tying mechanism for the twist lock shall be guarded in a manner to prevent an employee from reaching the twisting hook.</p> <p>(3) If more than 1 operator feeds a bag loading machine, an emergency stop within reach of each operator shall be provided as prescribed in subrule (4) of rule 8115.</p> <p>(4) A bread bagger shall have an interlocked enclosure over the top and both sides of the reciprocating pickup arm.</p>	<p><b>No comparable OSHA provision</b></p>

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<p><b>R408.18174 Form-fill-seal pouch or bag machine.</b>  <b>Rule 8174.</b> (1) A form-fill-seal pouch or big machine shall have:</p> <ul style="list-style-type: none"> <li>(a) The exposed hot long seam sealer parts insulated or guarded as prescribed in subrule (1) of rule 8171.</li> <li>(b) The in-running nip point of the power driven friction film feed rollers guarded.</li> <li>(c) An emergency stop button within reach of each employee feeding the machine, as prescribed in subrule (4) of rule 8115.</li> </ul> <p>(2) Draw bar parts of a form-fill-seal pouch or bag machine shall be guarded by extending the frame structure, or a hinged or movable guard which shall be interlocked to the drive motor.</p> <p>(3) An overhead extended rotating feed hopper of revolving turrets of a form-fill-seal pouch or bag machine shall have a tray or pan guard installed to protect an employee from falling product or machine parts.</p>	<p><b>No comparable OSHA provision</b></p>
<p><b>R 408.18175 Tray or carton forming and carton closing machines.</b>  <b>Rule 8175.</b> (1) The former and corner lock section of a tray or carton forming and carton closing machine shall be guarded with interlocked hinged or removable covers or enclosures.</p> <p>(2) The heated surfaces of a hot melt glue pot shall be insulated or guarded to prevent burns by accidental contact.</p>	<p><b>No comparable OSHA provision</b></p>
<p><b>R 408.18176 Caddy, cover and box stitchers.</b>  <b>Rule 8176.</b> A caddy, cover and box stitcher shall be provided a point of operation guard or device to protect the operator's fingers.</p>	<p><b>No comparable OSHA provision</b></p>
<p><b>R 408.18177 Carton and lining feeding machines.</b>  <b>Rule 8177.</b> A carton and lining feeding machine shall be equipped with a hinged hood type guard over the cutters which shall be interlocked with the drive motor.</p>	<p><b>No comparable OSHA provision</b></p>

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<p><b>R 408.18181 Ovens.</b></p> <p><b>Rule 8181.</b> (1) Except a range or cabinet type oven without moving parts installed before the effective date of this part, a combustible fueled oven shall be provided devices to protect against the following hazards:</p> <ul style="list-style-type: none"> <li>(a) Ignition failure.</li> <li>(b) Abnormal fuel pressure.</li> <li>(c) Combustion air failure.</li> <li>(d) Electrical power failure.</li> <li>(e) Exhaust system failure.</li> <li>(f) Excessive temperature.</li> </ul> <p>(2) Preventilation purge shall be arranged in the safety control circuit and set so as to require operation of the exhaust and recirculating fans to provide not less than 4 complete oven heating chamber air changes with fresh air before the burner ignition system may be operated and fuel turned on.</p> <p>(3) If a combustible fuel is used which is heavier than air, a bottom exhaust system shall be provided and used during the purge cycle.</p> <p>(4) A direct-fired oven installed after the effective date of this part shall be equipped with relief vents for freely relieving internal explosion pressures. The vents shall be proportioned in the ratio of their area to the area of explosion containing volume of the oven which shall be not less than 1 square foot of relief area to 30 cubic feet of oven volume. All safety controls shall be inspected not less than monthly as prescribed in table 1 of R 408.18142(5).</p> <p><b>R 408.18182 Range and cabinet type ovens.</b></p> <p><b>Rule 8182.</b> (1) A range or cabinet type oven without moving parts installed before the effective date of this part shall be equipped with fuel failure safety device for the pilot and burner.</p> <p>(2) A range or cabinet type oven without moving parts installed after the effective date of this part shall be as prescribed in rule 8181.</p>	<p><b>1910.263(l) Ovens -</b></p> <p><b>1910.263(l)(1) General location.</b></p> <p><b>1910.263(l)(1)(vii)</b></p> <p>Ovens shall be located so that possible fire or explosion will not expose groups of persons to possible injury. For this reason ovens shall not adjoin lockers, lunch or sales rooms, main passageways, or exits.</p> <p><b>1910.263(l)(3) Safeguards of mechanical parts.</b></p> <p><b>1910.263(l)(3)(i)</b></p> <p>Emergency stop buttons shall be provided on mechanical ovens near the point where operators are stationed.</p> <p><b>1910.263(l)(3)(ii)</b></p> <p>All piping at ovens shall be tested to be gastight.</p> <p><b>1910.263(l)(3)(iii)</b></p> <p>Main shutoff valves, operable separately from any automatic valve, shall be provided to permit turning off the fuel or steam in case of an emergency.</p> <p><b>1</b></p> <p><b>1910.263(l)(3)(iii)(a)</b></p> <p>Main shutoff valves shall be located so that explosions, fires, etc. will not prevent access to these valves.</p> <p><b>1910.263(l)(3)(iii)(b)</b></p> <p>Main shutoff valves shall be locked in the closed position when men must enter the oven or when the oven is not in service.</p> <p><b>1910.263(l)(9) General requirements.</b></p> <p><b>1910.263(l)(9)(i)</b></p> <p>Protecting devices shall be properly maintained and kept in working order.</p> <p><b>1910.263(l)(9)(ii)</b></p> <p>All safety devices on ovens shall be inspected at intervals of not less than twice a month by an especially appointed, properly instructed bakery employee, and not less than once a year by representatives of the oven manufacturers.</p> <p><b>1910.263(l)(9)(iii)(a)</b></p> <p>Protection of gas pilot lights shall be provided when it is impracticable to protect the main flame of the burner and where the pilot flame cannot contact the flame electrode without being in the path of the main flame of the burner. Failure of any gas pilot shall automatically shut off the fuel supply to the burner.</p> <p><b>1910.263(l)(9)(iii)(b)</b></p> <p>Ovens with multiple burners shall be equipped with individual atmospheric pilot lights where there is sufficient secondary air in the baking chamber and where gas is available; or else each burner shall be equipped with an electric spark-type ignition device.</p>

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	<p><b>1910.263(l)(9)(iv)</b> Burners of a capacity exceeding 150,000 B.t.u. per hour equipped with electric ignition shall be protected in addition by quick-acting combustion safeguards.</p> <p><b>1910.263(l)(9)(iv)(a)</b> The high-tension current for any electric spark-type ignition device shall originate in a power supply line which is interlocked with the fuel supply for the oven in such a way that in case of current failure both the source of electricity to the high-tension circuits and the fuel supply shall be turned off simultaneously.</p> <p><b>1910.263(l)(9)(iv)(c)</b> Combustion safeguards used in connection with electric ignition systems on ovens shall be so designed as to prevent an explosive mixture from accumulating inside the oven before ignition has taken place.</p> <p><b>1910.263(l)(9)(v)</b> When fuel is supplied and used at line pressure, safety shutoff valves shall be provided in the fuel line leading to the burner.</p> <p><b>1910.263(l)(9)(v)(a)</b> When fuel is supplied in excess of line pressure, safety shutoff valves shall be provided in the fuel line leading to the burners, unless the fuel supply lines are equipped with other automatic valves which will prevent the flow of fuel when the compressing equipment is stopped.</p> <p><b>1910.263(l)(9)(v)(b)</b> The safety shutoff valve shall be positively tight and shall be tested at least twice monthly.</p> <p><b>1910.263(l)(9)(v)(e)</b> A safety shutoff valve shall require manual operation for reopening after it has closed, or the electric circuit shall be so arranged that it will require a manual operation for reopening the safety shutoff valve.</p> <p><b>1910.263(l)(9)(v)(f)</b> Manual reset-type safety shutoff valves shall be so arranged that they cannot be locked in an open position by external means.</p> <p><b>1910.263(l)(9)(v)(g)</b> Where blowers are used for supplying the air for combustion the safety shutoff valve shall be interlocked so that it will close in case of air failure.</p> <p><b>1910.263(l)(9)(v)(h)</b> Where gas or electric ignition is used, the safety shutoff valve shall close in case of ignition failure. On burners equipped with combustion safeguards, the valve shall close in case of burner flame failure.</p> <p><b>1910.263(l)(9)(vi)</b> One main, manually operated, fuel shutoff valve shall be provided on each oven, and shall be located ahead of all other valves in the system.</p>

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	<p><b>1910.263(l)(9)(vii)</b> All individual gas or oil burners with a heating capacity over 150,000 B.T.U. per hour shall be protected by a safeguard which is actuated by the flame and which will react to flame failure in a time interval not to exceed 2 seconds. All safeguards, once having shut down a gas or oil burner, shall require manual resetting and starting of the burner or burners.</p> <p><b>1910.263(l)(9)(viii)</b> Any space in an oven (except direct fired ovens) which could be filled with an explosive mixture shall be protected by explosion vents. Explosion vents shall be made of minimum weight consistent with adequate insulation.</p> <p><b>1910.263(l)(9)(viii)(a)</b> Explosion doors which have a substantial weight shall be attached by chains or similar means to prevent flying parts from injuring the personnel in case of an explosion</p> <p><b>1910.263(l)(9)(viii)(b)</b> Where explosion vents are so located that flying parts or gases might endanger the personnel working on or near the oven, internal or external protecting means shall be provided in the form of heavily constructed shields or deflectors made from noncombustible material.</p> <p><b>1910.263(l)(9)(viii)(c)</b> Specifically exempted from the provisions of paragraph (l)(8)(viii) of this section are heating systems on ovens in which the fuel is admitted only to enclosed spaces which shall have been tested to prove that their construction will resist repeated explosions without deformation are exempt from the requirements of paragraph (l)(8)(viii)(a) and (b) of this section.</p> <p><b>1910.263(l)(9)(xi)</b> Where the gas supply pressure is substantially higher than that at which the burners of an oven are designed to operate, a gas pressure regulator shall be employed.</p> <p><b>1910.263(l)(9)(xi)(d)</b> A relief valve shall be placed on the outlet side of gas pressure regulators where gas is supplied at high pressure. The discharge from this valve shall be piped to the outside of the building.</p> <p><b>1910.263(l)(10) Direct-fired ovens.</b> <b>1910.263(l)(10)(i)</b> Direct-fired ovens shall be safeguarded against failure of fuel, air, or ignition.</p> <p><b>1910.263(l)(10)(ii)</b> To prevent the possible accumulation of explosive gases from being ignited after a shutdown, all direct-fired ovens with a heating capacity over 150,000 BT's. per hour shall be ventilated before the ignition system, combustion air blower, and the fuel can be turned on. The preventilation shall insure at least four complete changes of atmosphere in the baking chamber by discharging the oven atmosphere to the</p>

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	<p>outside of the building and entraining fresh air into it. The prevention shall be repeated whenever the heating equipment is shut down by a safety device.</p> <p><b>1910.263(l)(11) Direct recirculating ovens.</b>  <b>1910.263(l)(11)(i)</b>  Each circulating fan in direct recirculating ovens shall be interconnected with the burner in such a manner that the fuel is shut off by a safety valve when the fan is not running.</p> <p><b>1910.263(l)(11)(ii)</b>  The flame of the burner or burners in direct recirculating ovens shall be protected by a quick-acting flame-sensitive safeguard which will automatically shut off the fuel supply in case of burner failure.</p> <p><b>1910.263(l)(15) Indirect recirculating ovens.</b>  <b>1910.263(l)(15)(iii)</b>  Duct systems (in ovens) operating under pressure shall be tested for tightness in the initial starting of the oven and also at intervals not farther apart than 6 months.</p>

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