DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS

DIRECTOR’S OFFICE

CONSTRUCTION SAFETY STANDARDS

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R 408.42031, R 408.42034, R 408.42041, R 408.42043, R 408.42045, R 408.42046, and R 408.42047 of the Michigan Administrative Code are amended as follows:

PART 20 DEMOLITION

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(7) “Mechanical demolition” means demolition by powered equipment other than hand-held tools.

R 408.42031. Demolition generally.

Rule 2031. (1) Before the start of a demolition operation, an employer shall ensure that all of the following are done:

(a) An engineering survey of the structure and equipment is conducted by a competent person knowledgeable in demolition to determine all of the following:

(i) The condition of the foundation, roof, walls, and floors.

(ii) Whether any adjacent structure will be affected by the demolition.

(iii) The utility service entering the building.

(iv) Any other conditions and equipment affecting the safety of an employee.

(b) An employer shall ensure that there is a written report of the survey at the field office until the completion of the job. The report shall include information such as the name of the person conducting the survey, date of the survey, and hazardous substances and dangerous conditions found and their location.

R 408.42001. Scope.

Rule 2001. This part pertains to the demolition of structures by manual or mechanical means and to the safeguarding of the employees in this operation.

R 408.42023. Definitions.

Rule 2023. (1) “Balling” means to demolish by mechanically swinging a weighted ball.

(2) “Clamming” means to demolish by use of a clam bucket.

(3) “Competent person” means a person who is experienced and capable of identifying an existing or potential hazard in surroundings, or under working conditions, that are hazardous or dangerous to an employee and who has the authority and knowledge to take prompt corrective measures to eliminate the hazards.

(4) “Demolition” means to dismantle, tear down, or raze.

(5) “Hazardous substance” means a substance that is toxic, corrosive, a strong sensitizer, flammable, or explosive.

(6) “Manual demolition” means stripping or demolition by hand labor.
In an emergency situation, a survey is not required. If a
field office does not exist at the demolition site, then an
employer shall file the written report of the survey at
the employer's main office.

(c) An employer shall inform utility companies of the
planned demolition. An employer shall ensure that
utility services are shut off, capped, or otherwise
protected from damage, except as specified in subrule
(2) of this rule.

(d) An employer shall ensure that glazed sash and
doors and other glass that might cause an injury shall
be protected or removed before demolition starts.

(2) If an employee is required to work in a structure
that has been damaged by fire, flood, or explosion,
then an employer shall ensure that the affected walls
and floors are shored or braced before manual
demolition starts.

(3) If an area or item, such as a pipe, tank, or bin, is
known or suspected to contain a hazardous substance,
then an employer shall ensure that testing is performed
and the hazard eliminated before demolition is
permitted to begin.

(4) An employer shall ensure that manual
demolition of structural components starts at the top of
the structure and proceeds downward so that each
level is completely dropped before the next lower wall
and floor is dropped, except that if a connection portion
is a different level, then that portion may be removed
first. This requirement does not prohibit the cutting of a
floor for the removal of materials if the requirements of
Rule 408.42044 are complied with.

(5) An employer shall ensure that an employee shall
not be exposed to weather conditions during demolition
work if weather conditions constitute a hazard.

(6) During manual demolition of a structure of
skeleton steel construction, the steel framing may be
left in place, but an employer shall ensure that all
structural supports are cleared of loose material as the
demolition proceeds downward.

(7) An employer shall ensure that an employee is
not permitted to work on a floor below a floor opening
when demolition is conducted on the upper level,
unless the employee is protected by a solid barricade
not less than 42 inches high and located not less than
6 feet back from the projected edge of the opening
above.

(8) During demolition, an employer or his or her
designated representative shall make daily inspections
to detect hazards and unsafe conditions. An employer
shall ensure that an employee is not permitted to work
where hazards exist until the hazards are corrected by
shoring, bracing, or other effective means.

R 408.42032. Guarding floor and wall openings.
Rule 2032. The provisions of Part 45. Fall Protection,
being R 408.44501 et seq. of the Michigan
Administrative Code, shall be complied with for all
portions of the structure where there is employee
exposure to the conditions covered by that part.

R 408.42033. Means of egress.
Rule 2033. (1) When an employee is required to be
inside a structure being demolished, only a means of
egress designated by the employer shall be used and
maintained. All other means of egress shall be closed
off.

(2) The means of egress shall be free of hazards.
During manual demolition, the means of egress shall
be supplied with an illumination intensity of not less
than 10 candlepower.

(3) A means of egress shall be guarded to protect
an employee from falling material.

(4) An employee entrance to a multistory structure
to be demolished shall be protected by a roof canopy
for a distance of not less than 8 feet from the structure.
The canopy shall be not less than 1 foot wider on each
side than the entrance and shall be capable of
sustaining a load of 150 pounds per square foot.

R 408.42034. Material chutes and drops.
Rule 2034. (1) The area onto and through which
material is to be dropped shall be completely enclosed
with barricades not less than 42 inches high and not
less than 6 feet back from the opening and the area
receiving the material. Signs warning of the hazard of
falling materials shall be posted on the barricades at
each level containing the barricades.

(2) Where material is dropped through more than 1
level, the opening shall be enclosed between the upper
and lower levels, an enclosed chute shall be provided,
or the intermediate levels shall be barricaded as
prescribed in subrule (1) of this rule. If the drop is more
than 40 feet inside the building, only an enclosed
opening or chute shall be used. The chute or enclosure
shall extend through the ceiling of the receiving level.

(3) A material chute shall be constructed to
withstand any impact load imposed on it without failure.

(4) A material chute, or section thereof, at an angle
of more than 45 degrees from the horizontal shall be
entirely enclosed, except for an opening equipped with
a closure at or about each floor level for insertion of
materials. The opening shall not be more than 48
inches in height measured along the wall of the chute.
At all stories below the top floor, the openings shall be
kept closed when not in use. The chute shall fit the
floor or wall opening or the open space shall be closed.

(5) Where material is dumped from mechanical
equipment or a wheelbarrow, a toeboard or bumper not
less than 4 inches thick by 6 inches high nominal size
secured to the floor shall be provided at each material
chute opening.

R 408.42041. Removal of chimneys, stacks, and
walls.
Rule 2041. (1) During manual demolition, a wall or
ceiling shall not be permitted to fall on a floor of a
building unless the floor is capable of sustaining the
impact.
(2) A chimney, stack, or wall shall not be permitted to stand alone without lateral bracing unless it can withstand the force of the wind and other uncontrolled forces. A chimney, stack, or wall shall be left in a stable condition at the end of each shift.

(3) During manual demolition, a wall serving as a retaining wall to support earth shall not be demolished until the load against the wall has been removed.

(4) A wall serving as a retaining wall for debris shall be capable of supporting the imposed load.

(5) A wall serving as a bearing wall for an adjoining structure shall not be demolished until the adjoining structure has been underpinned.

(6) Safety access to and from the top of the chimney or stack shall be provided during manual demolition.

R 408.42043. Removal of structural steel.
Rule 2043. (1) During manual demolition, structural steel shall be removed column length by column length and tier by tier without overstressing any member.
(2) Structural steel members shall be lowered from an upper level by mechanical means.

Rule 2044. (1) A floor upon or above which an employee is working and which will be weakened by manual demolition shall be shored to support the intended load.
(2) An opening that is cut into a floor for disposal of materials shall not be more than 25% of the total floor area, unless the lateral supports of the removed flooring remain in place.
(3) An opening that is cut into a floor shall extend the full span of the floor between supports.
(4) Before a floor is demolished, debris and other material shall be removed from the area and adjacent areas for a distance of not less than 20 feet.
(5) Before demolishing a floor arch, debris and other material shall be removed from the arch and adjacent floor area. Planks that are not less than 2 inches by 10 inches in cross section, full size undressed, shall be provided for, and used by, an employee to stand on while breaking down a floor arch between beams. The planks shall be located so as to provide a safe support for the workmen if the arch between the beams collapses. The open space between planks shall not be more than 16 inches.
(6) A safe walkway, not less than 18 inches wide, formed of planks not less than 2 inches thick if wood, or of equivalent strength if metal, shall be provided for, and used by, employees when necessary to enable them to reach any point without walking upon exposed beams.
(7) Planks shall be laid together over solid bearings with the ends overlapping at least 1 foot.
(8) A floor arch to an elevation of not more than 25 feet above grade may be removed to provide storage area for debris, if the removal does not endanger the stability of the structure.

R 408.42045. Mechanical demolition.
Rule 2045. (1) Mechanical equipment shall not be used on a floor or other working surface unless the floor or surface is capable of supporting the imposed load of the equipment and the anticipated material loads.
(2) Equipment used in mechanical demolition shall comply with both of the following:
   (a) Only be operated by a qualified and authorized employee.
(3) A floor or wall opening shall have curbs or stop logs, as prescribed in R 408.42034 to prevent mechanical equipment from running over the edge.
(4) Only those employees necessary to the operation of mechanical demolition equipment shall be permitted in the demolition area at any time.
(5) The weight of a demolition ball shall not be more than 50% of the crane’s rated load based on the boom length and the maximum angle of operation that the ball will be used, or the weight shall not be more than 25% of the nominal breaking strength of the line and connection by which it is suspended, whichever is the lesser.
(6) The crane boom and load line shall be as short as possible to accomplish the job.
(7) The ball shall be positively connected to the load line with a swivel connector to prevent accidental disconnection and to prevent twisting of the line.
(8) Roof cornices and other ornamental stonework shall be removed before pulling a wall over, except when balling or clamping.

R 408.42046. Demolition by use of explosives.

R 408.42047. Storage of debris.
Rule 2047. (1) Storage of debris or salvaged material on a floor shall not exceed the allowable floor load.
(2) Storage space into which material is placed shall be blocked off by a barricade or wall when hazardous to an employee, except for an opening used to place or remove the material. The opening to the storage space shall be kept closed at all times when not in use.
(3) In a building having wooden floor construction, the flooring boards may be removed from not more than 1 floor above grade to provide storage space for debris, if falling material is not permitted to endanger the stability of the structure.
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