DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS

DIRECTOR'S OFFICE

OCCUPATIONAL HEALTH STANDARDS

(By authority conferred on the director of the department of licensing and regulatory affairs by sections 14 and 24 of 1974 PA 154, MCL 408.1014 and 408.1024; and Executive Reorganization Orders Nos. 1996-1, 1996-2, 2003-1, 2008-4, and 2011-4, MCL 330.3101, 445.2001, 445.2011, 445.2025, and 445.2030.)

PART 520. VENTILATION CONTROL

R 325.52001 Scope.

Rule 1. These rules apply to all processes and places of employment.

History: 2005 AACS; 2016 AACS.

R 325.52002 Reference of standards.

Rule 2. The following Michigan occupational safety and health standards (MIOSHA) 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, Michigan, 48909-8143 or via the internet at web-site: 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) Occupational Health Standard Part 301 “Air Contaminants for General Industry,” R 325.51101 to R 325.51108.

(b) Occupational Health Standard Part 526 “Dipping and Coating Operations,” R 325.52601 to R 325.52602.

(c) General Industry Safety Standard Part 76 “Spray Finishing Using Flammable and Combustible Materials,” R 408.17601 to R 408.17699.

History: 2005 AACS; 2016 AACS.

R 325.52003 Definitions.

Rule 3. (1) "Aerosol" means particulate matter suspended in air.

(2) "Contaminant" means an airborne material capable of causing occupational disease or significant physiological disturbances to a person, and includes, but is not limited to, the substances listed in Occupational Health Standard Part 301 “Air Contaminants for General Industry,” as referenced in R 325.52002.

(3) "Control" means the limitation of worker exposure to contaminant levels not exceeding the exposure limits as set forth in Occupational Health Standard Part 301 “Air Contaminants for General Industry,” as referenced in R 325.52002.

(4) "Controlled process" means an arrangement of equipment to control the contaminant by means of suitable design measures.

(5) "Enclosure" means a room, booth, or exhaust hood that confines contaminants at their sources.

(6) "Gas" means a normally formless fluid that occupies a space or enclosure and that can be changed to the liquid or solid state by the effect of increased pressure or decreased temperature, or both.

(7) "General ventilation" means the supply and removal of air from a space to dilute or remove contaminants.

(8) "Local exhaust ventilation system" means an arrangement of exhaust hoods, ducts, and fans that removes air to control a contaminant at its source.

(9) "Mg/m^3" means milligrams of particulate per cubic meter of air.

(10) "Mppcf" means millions of particulates per cubic foot of air based on impinger samples counted by light field microscopic techniques.

(11) "Ppm" means parts of vapor or gas per million parts of air by volume at 25 degrees Celsius and 760 millimeters of mercury pressure.

(12) "Permissible exposure limits" means the exposure limits as set forth in Occupational Health Standard Part 301 “Air Contaminants for General Industry,” as referenced in R 325.52002.

(13) "Process space" means a tunnel, process equipment, shaft, or enclosed space.

(14) "Source" means a process or equipment that releases a contaminant into the air in concentrations exceeding the permissible exposure limits.

(15) "Supply ventilation system" means an arrangement of inlet openings or equipment to introduce outside air into the working environment.

(16) "Vapor" means the gaseous state of a substance.

History: 2005 AACS; 2016 AACS.

R 325.52004 Control methods for enclosures and controlled processes.

Rule 4. (1) An employer shall ensure that an enclosure is provided at a stationary source unless the omission of the enclosure does not impair control.

(2) A controlled process shall be designed and regulated to prevent the creation of a hazard to health or life. If the director determines that there may be an immediate danger to health or life due to the failure of the process design or regulatory device, then he or she may require that the process fail-safe in such manner to avert the hazard.

History: 2005 AACS.

R 325.52005 Supply ventilation systems.

Rule 5. (1) An employer shall provide a supply ventilation system to ensure a flow of air into the working environment to equally replace the volume of air exhausted.

(2) An employer shall provide a mechanical air supply system if its absence will result in building negative pressures sufficient to cause back-drafting of vents from fuel-fired equipment or ineffective control.

(3) Mechanical air supply volumes shall be heated to maintain a minimum air temperature of 65 degrees Fahrenheit measured at the point of air discharge to the space. Exceptions to this requirement are refrigerated storage rooms, special process rooms, and similar locations where low air temperatures are essential to the preservation of the product or service, or, if in the opinion of the director, a lower air temperature will not be harmful to the health of the persons affected.

(4) Make-up air for spray-finishing operations shall be as prescribed in General Industry Safety Standard Part 76 "Spray Finishing Using Flammable and Combustible Materials," as referenced in R 325.52002.

(5) Make-up air for open surface tanks shall be as prescribed in Occupational Health Standard Part 526 "Dipping and Coating Operations," as referenced in R 325.52002.

History: 2005 AACS; 2016 AACS.

R 325.52006 Direct-fired air heaters.

Rule 6. (1) A direct-fired air heater, wherein combustion products are released in the supply air stream, may be installed in buildings of industrial occupancy, garages, laundries, and commercial kitchens. They shall not be installed in offices, schools, hospitals, and places of public assembly.

(2) A direct-fired air heater shall have an inlet duct connected directly to the out-of-doors. Room air shall not be circulated across the burner.

(3) A direct-fired air heater shall deliver air which contains not more than 10 ppm of carbon monoxide and is free from odors of combustion products. Permissible concentrations of other contaminants in the delivered air may be established by the director pursuant to their permissible exposure limits and the degree of exposure to a person.

(4) The air volume supplied to the building by a direct-fired air heater shall not exceed 110% of the total air volume exhausted. The director may require interlocking of a heater control system with an
exhaust ventilation system if necessary to ensure that the exhaust systems are operating.

(5) A direct-fired air heater shall have both of the following:

(a) A pre-ignition purge of fresh air.

(b) A positive fuel supply closure in the event of fuel supply failure, ignition failure, flame failure, power failure or interruption, or air flow reduction below 50% of its rated capacity.

History: 2005 AACS.

R 325.52007 Exhaust ventilation systems.

Rule 7. The minimum rate of exhaust ventilation for places of manufacturing, processing, assembling, maintenance and repair, or storage of material shall be 1 cubic foot of air per minute per square foot of floor area. This amount of exhaust ventilation may be provided by local exhaust, general exhaust, or both. The director may permit a variance if contaminant control is accomplished at a lesser rate of ventilation.

History: 2005 AACS.

R 325.52008 Local exhaust ventilation.

Rule 8. (1) An employer shall provide local exhaust ventilation at all stationary sources. The director may allow a variance from this subrule if control is accomplished with general ventilation.

(2) If a local exhaust system is used, then the exhaust air volume shall create an in-draft air volume at an enclosure, hood, duct, or fan sufficient to control the contaminant.

(3) A local exhaust system shall be designed to capture and control the contaminant. Distribution of exhaust air between various exhaust points may be accomplished by balanced duct design. If balancing gates are used, they shall be locked permanently in place after final adjustment.

(4) An employer shall ensure that the design and construction of a local exhaust ventilation system is adequate for the contaminant and conditions of service. A listing of practical ventilation texts and references shall be available from the director upon request. Technical information and experience regarding specific contaminants and control measures may be obtained from the director.

History: 2005 AACS; 2016 AACS.

R 325.52009 General ventilation systems.

Rule 9. A general ventilation system may be used for contaminant control. The ventilation air volume shall be sufficient to dilute the airborne contaminant to levels not exceeding the permissible exposure limits.

History: 2005 AACS.

R 325.52010 Exhaust system discharge locations.

Rule 10. The discharge locations of local exhaust or general exhaust systems shall not permit exhausted air to re-enter a workroom or other buildings directly, or indirectly, through air supply systems without substantial dilution.

History: 2005 AACS.

R 325.52011 Recirculation of air from exhaust systems.

Rule 11. (1) The recirculation of air containing a contaminant whose permissible exposure limit is equal to or exceeds 1000 ppm, 15 mg/m^3, or 50 mppcf, shall be permitted if the exhaust ventilation system is equipped with an air-cleaning device capable of reducing the contaminant concentrations to 10% or less of their permissible exposure limits in the returned air.

(2) The director may allow the recirculation of air containing a contaminant whose permissible exposure limit is less than 1000 ppm, 15 mg/m^3, or 50 mppcf, if the toxicity of

the contaminant and the degree of air cleaning to be achieved create an environment that will not impair the health of the workers, and if the contaminant concentrations in the return air does not exceed 10% of its permissible exposure limits.

(3) A recirculation system shall include an alternate air duct connection to discharge the return air outside of the building if necessary to protect the workers' health.

(4) Spray-finishing operations using flammable and combustible materials shall be as prescribed in General Industry Safety Standard Part 76 “Spray Finishing Using Flammable and Combustible Materials,” as referenced in R 325.52002.

History: 2005 AACS; 2016 AACS.

R 325.52012 Air pollution control.

Rule 12. A local exhaust and general exhaust ventilation system shall comply with rules adopted by the Michigan Department of Environmental Quality, R 336.1101 to R 336.1910.

History: 2005 AACS.