# CHAPTER 5205
# DEPARTMENT OF LABOR AND INDUSTRY
# SAFETY AND HEALTH STANDARDS



## 5205.0010 ADOPTION OF FEDERAL OCCUPATIONAL SAFETY AND HEALTH STANDARDS BY REFERENCE.

The Minnesota Department of Labor and Industry Occupational Safety and Health Codes and rules are amended by incorporating and adopting by reference, and thereby making a part thereof, Title 29 of the Code of Federal Regulations as follows:

Part 1910: Occupational Safety and Health Standards as published in Volume 43, No. 206 of the Federal Register on October 24, 1978 and corrected in Volume 43, No. 216 on November 7, 1978 which incorporates changes, additions, deletions, and corrections made up to November 7, 1978; and subsequent changes made prior to April 1, 1988:

Federal Register, Vol. 43, No. 234, dated 12/5/78; "Corrections to 1910.1043; Occupational Exposure to Cotton Dust."

Federal Register, Vol. 43, No. 234, dated 12/5/78; "Corrections to 1910.1046; Occupational Exposure to Cotton Dust in Cotton Gins."

Federal Register, Vol. 43, No. 237, dated 12/8/78; "Corrections to Tables of Exposure Limits for Air Contaminants, 1910.1000."

Federal Register, Vol. 43, No. 220, dated 11/14/78; "Lead Standard, 1910.1025."

Federal Register, Vol. 44, No. 19, dated 1/26/79; "Corrections to Lead Standard, typographical."

Federal Register, Vol. 44, No. 50, dated 3/13/79; "Modifications to Lead Standard, Portions of Standard Stayed."

Federal Register, Vol. 44, No. 168, dated 8/28/79; "Corrections to Lead Standard, Exemption of Construction Industry."

Federal Register, Vol. 44, No. 138, dated 7/17/79; "Occupational Exposure to Chlorine, Lifting of Stay."

Federal Register, Vol. 44, No. 206, dated 10/23/79; "Appendixes to Lead Standard."

Federal Register, Vol. 44, No. 232, dated 11/30/79; "Corrections to Appendixes to Lead Standard."

Federal Register, Vol. 45, No. 20, dated 1/29/80; "Servicing Multi Piece Rim Wheels, 1910.177."

Federal Register, Vol. 45, No. 28, dated 2/8/80; "Mechanical Power Presses; Corrections to Final Rule."

Federal Register, Vol. 45, No. 121, dated 6/20/80; "Commercial Diving Operations: Correction to Final Rule."

Federal Register, Vol. 45, No. 179, dated 9/12/80; "Revisions to Subpart L, Fire Protection; Subpart E, Means of Egress; and Subpart H, Hazardous Materials."

Federal Register, Vol. 46, No. 11, dated 1/16/81; "Subpart S, Electrical."

Federal Register, Vol. 46, No. 118, dated 6/19/81; "Deletion of 1910.1046; Occupational Exposure to Cotton Dust in Cotton Gins."

Federal Register, Vol. 46, No. 141, dated 7/23/81; "Occupational Exposure to Lead, New Trigger Levels for Medical Removal Protection; 1910.1025."

Federal Register, Vol. 46, No. 152, dated 8/7/81; "Corrections to Subpart S, Electrical."

Federal Register, Vol. 46, No. 162, dated 8/21/81; "Occupational Noise Exposure, Hearing Conservation Amendment; 1910.95."

Federal Register, Vol. 46, No. 238, dated 12/11/81; "Occupational Exposure to Lead, Final Rule Amended."

Federal Register, Vol. 47, No. 173, dated 9/7/82; "Hazardous Materials; Attendant Exemption and Latch - Open Devices; 1910.106(g)(2) and (g)(3)(vi)."

Federal Register, Vol. 47, No. 219, dated 11/12/82; "Occupational Exposure to Lead: Respirator Fit Testing, 1910.1025(f)(3)."

Federal Register, Vol. 47, No. 228, dated 11/26/82; "Exemption of Educational/Scientific Diving from Subpart T, Part 1910."

Federal Register, Vol. 47, No. 233, dated 12/3/82; "Occupational Exposure to Lead: Administrative Stay of Compliance Plans for Certain Industries; 1910.1025(c)(e)(i)(B) & (E)."

Federal Register, Vol. 48, No. 15, dated 1/21/83; "Occupational Exposure to Coal Tar Pitch Volatiles; Modification of Final Interpretation: 1910.1022."

Federal Register, Vol. 48, No. 25, dated 2/4/83; "Occupational Exposure to Cotton Dust; Stay for Knitting and Hosiery Industry; 1910.1043."

Federal Register, Vol. 48, No. 46, dated 3/8/83; "Occupational Exposure to Lead; Corrections to Respirator Fit Testing Requirements; 1910.1025 and Occupational Noise Exposure, Hearing Conservation Amendment; 1910.95(c)."

Federal Register, Vol. 48, No. 125, dated 6/28/83; "Hearing Conservation Amendment, Corrections to Final Rule."

Federal Register, Vol. 49, No. 4, dated 1/6/84; "Commercial Diving Operations; Deletion of 1910.411."

Federal Register, Vol. 49, No. 24 dated 2/3/84; "Servicing of Single Piece and Multi Piece Rim Wheels; 1910.177."

Federal Register, Vol. 49, No. 29, dated 2/10/84; "Revocation of Advisory and Repetitive Standards."

Federal Register, Vol. 49, No. 37, dated 2/23/84; "Occupational Exposure to Cotton Dust; Partial Administrative Stay of 1910.1043(m)(2)(ii)."

Federal Register, Vol. 49, No. 109, dated 6/5/84; "Occupational Exposure to Lead; Effective Date of Compliance Plan Requirements for Primary and Secondary Smelting and Battery Manufacturing Industries, 1910.1025(e)(3)(ii)(B) and (E)."

Federal Register, Vol. 49, No. 122, dated 6/22/84; "Occupational Exposure to Ethylene Oxide (1910.1047), Final Rule."

Federal Register, Vol. 50, No. 6, dated 1/9/85; "Educational/Scientific Diving: Guidelines for Scientific Diving (Appendix B) Subpart T of Part 1910."

Federal Register, Vol. 50, No. 22, dated 2/1/85; "Power Lawnmowers: Amendments; 1910.243(e)."

Federal Register, Vol. 50, No. 48, dated 3/12/85; "Occupational Exposure to Ethylene Oxide (1910.1047); Amendment of Effective Dates."

Federal Register, Vol. 50, No. 72, dated 4/15/85; "Occupational Exposure to Cotton Dust (1910.1043); Extension of Administrative Stay."

Federal Register, Vol. 50, No. 178, dated 9/13/85; "Coke Oven Emissions (1910.1029); Deletion of Portions of Standard."

Federal Register, Vol. 50, No. 198, dated 10/11/85; Occupational Exposure to Ethylene Oxide (1910.1047); Labeling Requirements."

Federal Register, Vol. 50, No. 240, dated December 13, 1985; "Occupational Exposure to Cotton Dust; 29 Code of Federal Regulations 1910.1043.

Federal Register, Vol. 51, No. 119, dated June 20, 1986; "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite (1910.1001 and 1926.58); Final Rules."

Federal Register, Vol. 51, No. 128, dated July 3, 1986; "Occupational Exposure to Cotton Dust (1910.1043), Corrections and Information Collection Requirements Approval."

Federal Register, Vol. 51, No. 132, dated July 10, 1986; "Occupational Exposure to Ethylene Oxide (1910.1047), Technical Amendments and Corrections to Final Rule."

Federal Register, Vol. 51, No. 133, dated July 11, 1986; "Electrical Standards for Construction, Part 1926, Subpart K."

Federal Register, Vol. 51, No. 181, dated September 18, 1986; "Commercial Diving Standard (1910.430); Technical Amendments to Final Rule."

Federal Register, Vol. 51, No. 182, dated September 19, 1986; "Accident Prevention Tags (1910.145); Amendment to Final Rule."

Federal Register, Vol. 51, No. 188, dated September 29, 1986; "Record Keeping Requirements for Tests, Inspections, and Maintenance Checks (1910.68, 1910.106, 1910.157, 1910.179, 1910.180, 1910.181, 1910.217, 1910.218, 1910.252, and 1910.440)."

Federal Register, Vol. 51, No. 201, dated October 17, 1986; "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite (1910.1101); Partial Administrative Stay of Final Rules and Redesignation and Amendment of Final Rule."

Federal Register, Vol. 51, No. 244, dated December 19, 1986; "Hazardous Waste Operations and Emergency Response (1910.120); Interim Final Rule."

Federal Register, Vol. 52, No. 83, dated April 30, 1987; "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Extension of the Partial Stay and Amendment of Final Rule."

Federal Register, Vol. 52, No. 85, dated May 4, 1987; "Hazardous Waste Operations and Emergency Response; Corrections to Interim Final Rule (29 CFR 1910.120)."

Federal Register, Vol. 52, No. 91, dated May 12, 1987; "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Corrections and Information Collection Requirements Approval."

Federal Register, Vol. 52, No. 176, dated September 11, 1987; "Occupational Exposure to Benzene (1910.1028); Final Rule."

Federal Register, Vol 52, No. 187, dated September 28, 1987; "Revision of Telecommunications Training Records (1910.268); Final Rule."

Federal Register, Vol. 52, No. 233, dated December 4, 1987; "Occupational Exposure to Formaldehyde (1910.1048); Final Rule."

Federal Register, Vol. 52, No. 251, dated December 31, 1987; "Grain Handling Facilities (1910.272); Final Rule."

Federal Register, Vol. 53, No. 41, dated March 2, 1988; "Occupational Exposure to Formaldehyde; Approval of Information Collection Requirements, Technical Amendment (1910.1048)."

Federal Register, Vol. 53, No. 49, dated March 14, 1988; "Presence Sensing Device Initiation of Mechanical Power Presses (1910.211, 1910.217); Final Rule."

Part 1915: Occupational Safety and Health Standards for Shipyard Employment as published in Volume 47, No. 76 of the Federal Register on April 20, 1982 and subsequent changes made prior to December 31, 1986, which consolidates Part 1915 and Part 1916, and subsequent changes made prior to December 31, 1986:

Federal Register, Vol. 51, No. 188, dated September 29, 1986; "Record Keeping Requirements for Tests, Inspections, and Maintenance Checks (1915.113 and 1915.172); Final Rule."

Part 1917: Safety and Health Standards for Marine Terminals as published in Volume 48, No. 129 of the Federal Register on July 5, 1983; and subsequent changes made prior to April 1, 1988:

Federal Register, Vol. 52, No. 186, dated September 25, 1987; "Servicing of Single Piece and Multi Piece Rim Wheels at Marine Terminals (1917.44); Final Rule."

Federal Register, Vol. 52, No. 251, dated December 31, 1987; "Grain Handling Facilities (1917.1 and 1917.72-[removed]); Final Rule."

Part 1918: Safety and Health Regulations for Longshoring as published in Part II, Volume 39, No. 119 of the Federal Register on June 19, 1974 incorporating changes, additions, deletions and corrections made up to June 3, 1974; and subsequent changes made prior to June 1, 1984:

Federal Register, Vol. 42, No. 141, dated 7/22/77; "Commercial Diving Operations, adding 1918.99."

Federal Register, Vol. 43, No. 88, dated 5/5/78; "Occupational Exposure to Benzene; supersedes standards in Part 1918."

Part 1926: Construction Safety and Health Regulations as published in Part VII, Volume 44, No. 29 of the Federal Register on February 9, 1979 which incorporates changes, additions, deletions and corrections made up to October 17, 1978 and includes General Industry Occupational Safety and Health Standards (29 CFR Part 1910) which have been identified as applicable to construction work; and subsequent changes made prior to April 1, 1988:

Federal Register, Vol. 45, No. 222, dated 11/14/80; "Guarding Low Pitched Roof Perimeters During Performance of Built-Up Roofing Work."

Federal Register, Vol. 51, No. 119, dated 6/20/86; "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite (1926.58 and 1910.1001); Final Rules."

Federal Register, Vol. 51, No. 133, dated 7/11/86; "Electrical Standards for Construction, Part 1926, Subpart K."

Federal Register, Vol. 52, No. 187, dated September 28, 1987; "Revision of Construction Industry Test and Inspection Records (1926.500, 1926.552, and 1926.903); Final Rule."

Federal Register, Vol. 52, No. 233, dated December 4, 1987; "Occupational Exposure to Formaldehyde - 1926.55."

Part 1928: Occupational Safety and Health Standards for Agriculture as published in Part II, Volume 40, No. 81 of the Federal Register on April 25, 1975 and subsequent changes made prior to June 1, 1987:

Federal Register, Vol. 41, No. 206, dated 11/22/76; "Nonsubstantive changes to guarding of farm field equipment."

Federal Register, Vol. 42, No. 141, dated 7/22/77; "Excludes commercial diving operations standards from agricultural applicability."

Federal Register, Vol. 42, No. 146, dated 7/29/77; "Excludes air contaminant standards from agricultural operations."

Federal Register, Vol. 43, No. 122, dated 6/23/78; "Occupational Exposure to Cotton Dust in Cotton Gins, amends 1928.21 by adding paragraph (a)(5)."

Federal Register, Vol. 43, No. 127, dated 6/30/78; "Occupational Exposure to Cotton Dust in Cotton Gins, corrections of errors in 1928.21 and 1928.113."

Federal Register, Vol. 43, No. 153, dated 8/8/78; "Occupational Exposure to Cotton Dust in Cotton Gins, correction of errors in 1928.113."

Federal Register, Vol. 43, No. 234, dated 12/5/78; "Occupational Exposure to Cotton Dust in Cotton Gins, corrections to Appendix C."

Federal Register, Vol. 52, No. 84, dated May 1, 1987; "Field Sanitation, Final Rule (29 CFR 1928.110)."

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 411; 12 SR 634; 12 SR 1618; 12 SR 2622*

**5205.0015 APPLICATION OF RULES.**

Chapter 5205 applies only to general industry locations. Chapter 5207 applies only to construction locations. Chapters 5206 and 5210 apply to both general industry and construction locations.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

## WALKING, WORKING SURFACES

**5205.0040 ELEVATED STORAGE PLATFORM OR RACK.**

No employee shall be required or permitted to work on an elevated platform or rack intended primarily for the storage of materials unless the storage area has been provided with the safeguards specified in Code of Federal Regulations, title 29, section 1910.23 (c) (1).

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.0050 SHIPS LADDERS.**

*[For text of subps 1 and 2, see M.R. 1987]*

Subp. 3. **Treads.** Treads shall be uniformly spaced eight to 12 inches vertically. Tread surfaces other than steel grating shall be provided with skid resistance. Treads shall be flat steps with minimum of six inches in width and at least 24 inches long.

*[For text of subps 4 and 5, see M.R. 1987]*

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.0065 SUSPENSION SCAFFOLDS.**

Subpart 1. **Suspension lines.** The scaffold suspension lines shall be secured to the scaffold and to the roof irons, hooks, or outriggers by bolt type devices or cable eyes and cable clamps. Hooks or safety hooks shall not be permitted as a means of rigging.

Subp. 2. **Outrigger beams or thrustout.** When a suspension scaffold is supported by outrigger beams or thrustouts, each outrigger beam or thrustout must meet the following requirements:

A. Each outrigger beam or thrustout shall be of a size and design to support four times the intended load.

B. The inner end of the outrigger beam must be secured from overturning or tilting laterally.

C. Tiebacks that meet the requirements of Code of Federal Regulations, title 29, section 1926.451(i)(4) shall be securely fastened to the outrigger beam.

D. Counterweights, when used, shall be sufficient to balance four times the intended load, shall be securely fastened to the outrigger beam, marked to indicate their weight, and of a rigid nonflowable material.

Subp. 3. **Lifelines on single point suspension scaffolds.** A lifeline that meets the requirements of Code of Federal Regulations, title 29, section 1926.104(b), shall be installed for single point suspension scaffolds. Employees working on the scaffold shall be provided with a safety belt and lanyard that meet the requirements of Code of Federal Regulations, title 29, section 1926.104, and shall be required to tie off to the lifeline.

Subp. 4. **Broken wire safeties.** When two point scaffolds are equipped with broken wire safeties, the employees may tie off to a substantial member of the scaffold itself. A "substantial member" is a member capable of withstanding the anticipated load. Guardrails are not considered substantial members. The maximum potential fall before the lanyard becomes taut shall be six feet.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.0080 WELLS, PITS, SHAFTS, AND OTHER SIMILAR SPACES.**

All wells, pits, shafts, and other similar spaces shall be barricaded or covered. Upon completion of exploration and similar operations, temporary wells, pits, shafts, and other similar spaces shall be backfilled.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

## GENERAL ENVIRONMENTAL CONTROLS

**5205.0100 SUBMISSION OF ENVIRONMENTAL CONTROL MEASURES.**

Submission of plans for engineering control of dust, fumes, gas, vapor, or mist generating operations is not required except as noted in part 5205.0110, subpart 4. Tests shall be conducted after the installation of engineering controls to determine whether the control measure is effective in maintaining the exposure concentrations of toxic materials below those limits specified herein.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.0105 VENT PIPE OUTLETS.**

Vent pipe outlets for hazardous substances, as defined by part 5206.0100, subpart 7, under pressure, including ammonia and refrigerant compressor sys-

tems, shall be so located that the discharge is released at a point outside of the building where it will not reenter the building or work area.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.0110 WORKROOM VENTILATION AND TEMPERATURE.**

Subpart 1. **Air.** Air shall be provided and distributed in all workrooms as required in this code, unless prohibited by process requirements.

Outside air shall be provided to all workrooms at the rate of 15 cubic feet per minute per person.

Air circulated in any workroom shall be supplied through air inlets arranged, located, and equipped so that the workers shall not be subjected to air velocities exceeding 200 feet per minute except under special circumstances specified in this code or where approved by the Department of Labor and Industry.

Subp. 2. **Temperature and humidity table.** The following tables shall be used as a guide in appraising and controlling health hazards associated with extremes in temperature and humidity.

High Environmental Dry and Wet Bulb Temperatures* That can

Be Tolerated in Daily Work by Healthy,

Acclimatized Persons

Wearing Warm Weather Clothing

| | | Air Movement | | | | | |
|---|---|---|---|---|---|---|---|
| | Relative Humidity | 15-25 fpm | | 100 fpm | | 300 fpm | |
| Activity | Percent | Dry Bulb | Wet Bulb | Dry Bulb | Wet Bulb | Dry Bulb | Wet Bulb |
| Summer season | 80 | 89 | 84 | 91 | 85 | 93 | 87 |
| Light sedentary | 60 | 94 | 82 | 96 | 84 | 98 | 85 |
| activities | 40 | 100 | 79 | 101 | 81 | 103 | 82 |
| **(ET 85° F.) | 20 | 109 | 75 | 110 | 75 | 110 | 75 |
| | 5 | 119 | 69 | 118 | 69 | 117 | 68 |
| Summer season | 80 | 83 | 78 | 86 | 81 | 89 | 83 |
| Heavy work | 60 | 88 | 76 | 90 | 78 | 93 | 80 |
| **(ET 80° F.) | 40 | 93 | 73 | 95 | 75 | 97 | 76 |
| | 20 | 100 | 69 | 101 | 70 | 102 | 70 |
| | 5 | 107 | 64 | 107 | 64 | 106 | 63 |
| Winter season | 80 | 78 | 73 | 81 | 77 | 85 | 79 |
| Light or heavy | 60 | 81 | 71 | 85 | 74 | 88 | 76 |
| work | 40 | 86 | 68 | 89 | 70 | 91 | 72 |
| **(ET 75° F.) | 20 | 91 | 63 | 93 | 65 | 94 | 66 |
| | 5 | 97 | 58 | 97 | 58 | 97 | 59 |

*(Including Radiation Effect.)

**ET = Effective Temperature as defined in "Industrial Ventilation, A Manual of Recommended Practice," as issued by the American Conference of Governmental Industrial Hygienists, Committee on Industrial Ventilation, Lansing, Michigan.

If thermal radiation appears to be an important factor, the value listed above should be corrected accordingly.

Subp. 3. **Minimum air temperature.** Workroom temperatures shall be maintained as follows:

A. The minimum air temperature of 60 degrees Fahrenheit shall be maintained in all rooms where work of a strenuous nature is performed, unless prohibited by process requirements.

B. The minimum air temperature of 65 degrees Fahrenheit shall be maintained in all other workrooms unless prohibited by process requirements.

Subp. 4. **Recirculated air.** Air from any exhaust system handling materials listed in Code of Federal Regulations, title 29, subpart Z, shall not be recirculated without written permission from the Department of Labor and Industry.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

## 5205.0115 GAS FIRED MACHINES AND APPLIANCES.

The flame of the gas pilot, burner, or burners in gas fired units, except process heaters in refineries and top burners on domestic kitchen type stoves, shall be protected by a quick acting, flame sensitive safeguard that will automatically shut off the fuel supply in case of pilot or burner failure.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

## 5205.0116 CARBON MONOXIDE MONITORING.

Subpart 1. **Internal combustion engine powered industrial trucks.** The employer shall monitor environmental exposure of employees to carbon monoxide whenever internal combustion engine powered industrial trucks as defined in Code of Federal Regulations, title 29, section 1910.178(a)(1) are operated indoors to ensure that carbon monoxide levels do not exceed those given in Code of Federal Regulations, title 29, section 1910.1000, Table Z-1. The air monitoring shall be done at least quarterly and represent exposures during a day of highest usage in the areas where employee carbon monoxide exposure is most likely.

Subp. 2. **Tailpipe exhaust gas analysis.** The employer shall ensure that powered industrial truck engine exhaust gases do not contain more than one percent carbon monoxide for propane fueled trucks or two percent carbon monoxide for gasoline fueled trucks measured at idle and at three-fourths throttle during final engine tuning in a regular maintenance program.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 1754*

## ILLUMINATION

## 5205.0140 EXIT AND EMERGENCY LIGHTING.

Subpart 1. **Stairway and exit lighting.** The lighting to be provided in all important stairways and all exits from work places and in the passageways related thereto shall be so supplied that it will not be subject to failure of the room or workspace lighting from internal causes. In artificial illumination, the service for exit and emergency lighting shall preferably be from an independent connection or connections extending back to the main service entrance.

Subp. 2. **Separate supply source.** In cases of unusual danger which may exist on account of the type of building or nature of the work, crowded conditions, or lack of suitable exit space, an independent service shall be assured by connecting to a separate source of supply without or within the building. During the hours of occupancy when daylight is lacking, this separate source of supply shall be connected so as to function continuously or to come on automatically upon failure of the regular lighting service.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.0160** [Repealed, 12 SR 634]

**5205.0170** [Repealed, 12 SR 634]

**5205.0180** [Repealed, 12 SR 634]

## VENTILATION FOR GARAGES

### 5205.0200 GARAGE VENTILATION.

Subpart 1. **Scope.** Ventilation shall be provided for all repair garages, service stations, body shops, and all live storage garages, housing six or more vehicles driven by internal combustion engines. A live storage area is any area within a building used for the storage of fire trucks, tractors, automobiles, trucks, and other self-propelled vehicles driven in and out under their own power.

Subp. 2. **Size of general ventilation system.** The ventilation system shall be capable of removing a volume of air not less than three-fourths cubic foot per minute per square foot of floor area in garages and not less than one-half cubic foot per minute per square foot of floor area in service stations. Exhaust ducts shall not be more than 18 inches from the floor, so placed as to remove carbon monoxide gas from the entire garage. An equal amount of tempered fresh supply air shall be provided.

Subp. 3. **Size of vehicle exhaust pipe ventilation system.** In addition to general ventilation requirements, exhaust gases from the internal combustion engines being tested shall be discharged to the outdoors through a duct or flexible hose of noncombustible material of suitable size attached as an extension to the exhaust pipe. Repair stalls may be located adjacent to an outside wall so that ten feet or less of extension duct will reach the outdoors through openings not more than one foot above floor level. If repair stalls are not so located, each stall shall be provided with a suitable exhaust extension duct or flexible hose that is or can be connected to a mechanical exhaust system and to the exhaust pipe of the vehicle. The mechanical exhaust system shall have a capacity in accordance with the following table:

| Engine Type | Engine Horsepower | cfm per Tailpipe | Minimum Flexible Duct Inside Diameter, Inches |
|---|---|---|---|
| Gasoline | 200 and under | 100 | 3 |
| Gasoline | over 200 | 200 | 4 |
| Diesel | — | 400 | 4-1/2 |

Subp. 4. **Inspection and repair pits.** Inspection and repair pits shall be provided with a ventilating system capable of assuring one complete air change every five minutes (12 air changes per hour). The exhaust air inlet opening or openings shall terminate in a grille that shall be perpendicular to the floor. The bottom of the ventilation openings shall extend to the floor at the lowest point or points of the pit.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.0210** [Repealed, 12 SR 634]

**5205.0220** [Repealed, 12 SR 634]

**5205.0230** [Repealed, 12 SR 634]

**5205.0240** [Repealed, 12 SR 634]

**5205.0250** [Repealed, 12 SR 634]

**5205.0260** [Repealed, 12 SR 634]

**5205.0270** [Repealed, 12 SR 634]

**5205.0280** [Repealed, 12 SR 634]

**5205.0290** [Repealed, 12 SR 634]

**5205.0300** [Repealed, 12 SR 634]

**5205.0310** [Repealed, 12 SR 634]

**5205.0320** [Repealed, 12 SR 634]

## ELEVATORS, DUMBWAITERS, ESCALATORS, AND MOVING WALKS

### 5205.0400 SCOPE.

The matters covered in this code shall include rules for passenger elevators, freight elevators, hoists, lifts, dumbwaiters, moving stairways, moving walks, or any mechanical device or apparatus, permanently installed and fixed in position in any building or structure except private residences, for the purpose of conveying people, animals, vehicles, merchandise, building materials, or any other load regardless of whether the load is to be conveyed above or below the grade line.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

### 5205.0401 APPLICATION.

Parts 5205.0400 to 5205.0590 apply to the construction, installation, alteration, and operation of all the installations listed in part 5205.0400.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 1754*

### 5205.0410 DEFINITIONS.

Subpart 1. **Existing installation.** "Existing installation" means one for which, before the effective date of this code:

A. all work of installation was completed; or

B. the plans and specifications were filed with the enforcing authority and work was begun not later than 12 months after approval of the plans and specifications.

Subp. 2. **New installation.** "New installation" means any installation that is not an existing installation.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

### 5205.0420 EXISTING INSTALLATIONS.

Subpart 1. **Requirements.** All existing installations may be continued in service as long as they are properly maintained and are installed and maintained in a safe condition. The Department of Labor and Industry shall have the authority to shut down any piece of equipment covered by parts 5205.0400 to 5205.0490, which is dangerous to life, limb, and adjoining property, and the equipment shall not be put back into operation until the unsafe condition has been corrected and approved by the Department of Labor and Industry. Specific requirements for existing installations are:

*[For text of subpart 1, items A to F see M.R. 1987]*

G. Car door or gate electric contacts: car doors or gates shall be provided with electric contacts conforming to rule 111.5 of ANSI A17.1-1984.

*[For text of subpart 1, items H to J, see M.R. 1987]*

Subp. 2. **Material changes.** Any installation which is materially changed after the effective date of this code, shall comply with all of the requirements covering a new installation. A material change is defined as any change which moves the location, increases or decreases the length of travel, changes the type of operation, increases the speed or carrying capacity, or changes the types of power supply of an existing installation.

*[For text of subp 3, see M.R. 1987]*

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.0430 INSPECTIONS, TESTS, AND APPROVAL.**

*[For text of subpart 1, see M.R. 1987]*

Subp. 2. **Inspections and tests.** It shall be unlawful for any person, firm, or corporation to put into service any installation covered by parts 5205.0400 to 5205.0490 whether the installation is newly installed, relocated, or altered materially without the installation being inspected and approved by the Department of Labor and Industry. The installer of any equipment included in parts 5205.0400 to 5205.0490 shall notify the Department of Labor and Industry seven days before completion of the installation for the inspection. The Department of Labor and Industry shall have the authority to require tests necessary to prove the safe operation of any installation providing these tests meet the requirements as outlined in ANSI A17.1-1984 and supplements.

*[For text of subp 3, see M.R. 1987]*

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.0450 STANDARDS INCORPORATED BY REFERENCE.**

The American National Standard Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks, ANSI A17.1-1984, including supplements, is incorporated by reference and made a part of these Minnesota Department of Labor and Industry occupational safety and health rules.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.0460 EXCEPTIONS AND AMENDMENTS TO ANSI A17.1.**

*[For text of subps 1 to 4, see M.R. 1987]*

Subp. 5. **Door unlocking devices.** Hoistway door unlocking devices shall not be permitted except at the bottom landings.

A. Top and bottom landings shall be provided with hoistway access switches conforming to rules 111.9b and 111.9c of ANSI A17.1-1984.

*[For text of subp 5, items B and C, see M.R. 1987]*

*[For text of subps 6 and 7, see M.R. 1987]*

Subp. 8. **Operation of elevators under fire or other emergency conditions.** All elevators having a travel of 25 feet (7.62 meters) or more, above or below the designated level must conform to the requirements of Rule 211.3 of ANSI A17.1-1984. NOTE: Section 3 of Rule 211.3 defines "designated level."

In buildings with elevators requiring Phase I and II operation as defined in ANSI A17.1-1984 and supplement ANSI A17.1a-1985, all floors must be served by cars sized to accommodate an ambulance stretcher in the horizontal position.

The opening to the elevator car must be capable of passageway for an ambulance stretcher.

Subp. 9. **Height of call buttons.** Exterior elevator call buttons shall not be placed higher than 60 inches above the floor. No door opening and door closing buttons, or elevator floor buttons shall be placed higher than 60 inches above the floor.

Subp. 10. **Standby power.** Standby power must be provided as required by the Uniform Building Code, section 5103(c).

*[For text of subps 11 to 14, see M.R. 1987]*

Subp. 15. [Repealed, 12 SR 634]

*[For text of subp 16, see M.R. 1987]*

Subp. 17. **Emergency keys.** All keyed switches installed to operate elevators on emergency service shall be keyed alike to a pattern approved by the Department of Labor and Industry. In lieu of the above, keys for emergency elevator service may be in a metal box placed in a location approved by the Department of Labor and Industry, provided the box is locked with a five pin tumbler core lock or equivalent which is keyed to the same pattern.

Subp. 18. **Special requirement.** One car in each bank of automatic operation elevators serving five or more floors above or below the main floor or having a travel of 50 feet or more above or below the main floor shall meet the requirements of rule 211.3a of ANSI A17.1-1984.

Subp. 19. [Repealed, 12 SR 634]

Subp. 20. **Fire resistive construction.** Hoistways shall be enclosed throughout their height with fire resistive enclosures as required by part IV of the Uniform Building Code.

Partitions between fire resistive hoistways and machine rooms having fire resistive enclosures and that are located at a side of or beneath the hoistway may be of unperforated noncombustible material at least equal to 0.059878 inches (1.519 millimeters) thick sheet steel in strength and stiffness with openings essential for ropes, drums, sheaves, and other elevator equipment.

All hoistway openings shall be provided with fire resistive protective assemblies. The fire resistance rating shall not be less than 1-1/2 hours when installed in two hour fire resistance rated construction. Protective assemblies installed in fire resistance rated construction of less than two hours shall have ratings as required by the Uniform Building Code. The fire resistance rating shall be determined by the test specified in section 1102 of the Uniform Building Code.

Subp. 21. **Multiple hoistways.** If there are three or fewer elevator cars in a building, they may be located within the same hoistway enclosure. If there are four elevator cars, they shall be divided so that at least two separate hoistway enclosures are provided. If there are more than four elevators, not more than four elevator cars may be located within a single hoistway enclosure.

Subp. 22. **Control of smoke and hot gases.** Hoistways of elevators shall be provided with means to prevent the accumulation of smoke and hot gases in case of fire. Hoistways housing elevators extending through more than two floor levels shall be vented to the outside. The area of the vent shall be not less than 3-1/2 percent of the area of the elevator shaft, as long as a minimum of three square feet per elevator is provided.

The venting of each individual hoistway shall be independent from any other hoistway venting, and the interconnection of separate hoistways for the purpose of venting is prohibited.

Vents shall be manually openable or remote control automatic vents. Location of operating devices is subject to the approval of the fire chief.

Subp. 23. **Location of vents.** Vents shall be located:

A. in the side of the hoistway enclosure directly below the floor or floors at the top of the hoistway, and shall open either directly to the outer air or through noncombustible ducts to the outer air; or

B. in the wall or roof of the penthouse or overhead machinery space above the roof, if the openings have a total area not less than the minimum specified in rule 100.4c of ANSI A17.1-1984. Vents passing through machine rooms shall be in noncombustible ducts. When a vent is installed in the roof of a hoistway, a protective grille shall be provided to prevent persons from falling into the hoistway.

Subp. 24. **Pressurization of hoistway.** If air pressurization of a hoistway is used as a means of smoke and hot gas control, the air shall not be introduced into the hoistway in such a manner as to cause erratic operation by impingement of traveling cables, selector tapes, governor ropes, compensating ropes, and other components sensitive to excessive movement or deflection.

Subp. 25. **Emergency signs.** Except at the main entrance level, an approved pictorial sign of a standardized design shall be posted adjacent to each elevator call station to indicate that, in case of fire, the elevator will not operate and exit stairways should be used.

Subp. 26. **Emergency stop switches.** Emergency stop switches shall not be installed inside the car on new installations of automatic operation elevators.

NOTE: Emergency stop switches shall not be removed from existing automatic operation elevators that do not conform to rule 210.10 of ANSI A17.1-1984.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

## 5205.0490 WHEELCHAIR ELEVATING DEVICES.

Wheelchair elevating devices shall conform to the requirements of ANSI A17.1-1984, part XX, and the requirements of the Minnesota State Building Code, parts 1320.2001 to 1320.2035.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

## MAINTENANCE AND REPAIR OF BUILDINGS AND EQUIPMENT

## 5205.0650 SCOPE.

Parts 5205.0650 to 5205.0710 apply to building and in plant maintenance and repair necessary to maintain buildings and equipment in safe operating condition.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

## 5205.0660 MAINTENANCE GOALS.

Subpart 1. **Building maintenance.** Buildings shall be maintained to assure that no loose parts or equipment including bricks, mortar, glass, wood, or cement parts can fall in passage or work areas occupied by employees.

Subp. 2. **Walkway maintenance.** Catwalks, platforms, walkways, and stairways shall be maintained in a condition free from the hazards associated with ice, snow, overhanging ice or snow, holes, loose members, or badly deteriorated or corroded members.

Subp. 3. **Asbestos.** Exposed friable asbestos containing materials on ceilings, beams, pipes, boilers, tanks, and similar areas shall be repaired, replaced, removed, enclosed, or encapsulated. Precautions shall be taken to protect employees as required by Code of Federal Regulations, title 29, section 1910.1001 or 1926.58.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.0665 ELECTRICAL REQUIREMENTS.**

Exposed non current carrying metal parts of cord and plug connected equipment that may become energized shall be grounded if used near wet or conductive equipment, materials, or locations.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.0675 COVERS AND OVERHEAD DOORS.**

Subpart 1. **Covers.** All covers of sufficient weight or pressure to cause crushing injury to employees in the event of their powered or unpowered closure shall be fastened, secured, or blocked to prevent their closing while employees may be in the path of travel during closure.

Subp. 2. **Overhead doors.** All overhead or sliding doors with sufficient weight or closing force to cause crushing injury to employees shall be provided with a constant pressure closing switch, safety edge, pressure relief mechanism, or three button control station meeting the specifications of Underwriters' Laboratories Standard UL 325 (1987) "Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems," paragraph 29.1C. This subpart is effective January 1, 1989.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 1754*

**5205.0680 LOCKOUT DEVICES.**

Subpart 1. **Electrical power disconnect.** Any main electrical power disconnect means which controls a source of power or material flow shall be locked out with a lockout device whenever employees are maintaining, cleaning, adjusting, or servicing machinery or equipment, if the disconnect is not in clear sight of the employee. A "Do Not Start" tag as described in Code of Federal Regulations, title 29, section 1910.145 (f) (3) shall be affixed to any and all operating controls.

Subp. 2. **Pneumatic and hydraulic lines.** The pressure shall be eliminated from any pneumatic and hydraulic lines which activate a mechanism or machine and the valve holding back the activating substance shall be locked out before an employee works on that mechanism or machine.

Subp. 3. **Spring tension mechanisms.** Mechanisms under spring tension or compression shall be blocked, clamped, secured in position, or the compression or tension totally relieved before being worked on by an employee.

Subp. 4. **Suspended mechanisms.** Suspended mechanisms or parts that normally cycle through a lower position shall be lowered to the lowest position, be clamped, blocked, or otherwise secured in position before being worked on by an employee.

Subp. 5. **Individual lockouts.** Where more than one employee is engaged in working on machinery or equipment, each employee shall affix their individual lockout device or lock to the disconnect switch or power supply.

Subp. 6. **Exemption.** Utility companies, when working on lines and equipment, will be exempt from this standard but must comply with the requirements of Code of Federal Regulations, title 29, section 1926.950(d).

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.0685 KNIVES AND CUTTING TOOLS.**

Knives and cutting tools shall be kept in sheaths or holders made for the purpose when those tools are not in use.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.0686 PRESSURE HOSES.**

All hand held pressure hoses and nozzles that could cause injury when the hose or nozzle is not being held, including air, water, hot water and steam, and all high temperature hoses or nozzles including hot water and steam, shall have a constant pressure control.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.0690 LUBRICATION OF MOVING MACHINERY.**

Machinery or equipment shall be shut down during manual lubrication unless access to lubrication fittings is safeguarded or is located far enough away from moving parts that employees cannot contact them.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.0700 WIRE ROPE CLIPS.**

Subpart 1. **Location of U-bolts.** Wire rope clips attached with U-bolts shall have the U-bolts on the dead or short end of the rope.

Subp. 2. **Clip construction.** Clips shall be made of drop forged steel. All nuts on the clip bolts of a newly installed rope shall be retightened after the first hour of service.

Subp. 3. **Clip spacing.** Spacing and number of clips shall be in accordance with the table below:

| Rope Diameter Inches | Number of Clips Drop Forged | Minimum Spacing (inches) |
|---|---|---|
| 1/8 | 2 | 3/4 |
| 3/16 | 2 | 1-1/8 |
| 1/4 | 2 | 1-1/2 |
| 5/16 | 2 | 1-7/8 |
| 3/8 | 2 | 2-1/4 |
| 7/16 | 2 | 2-5/8 |
| 1/2 | 3 | 3 |
| 5/8 | 3 | 3-3/4 |
| 3/4 | 4 | 4-1/2 |
| 7/8 | 4 | 5-1/4 |
| 1 | 5 | 6 |
| 1-1/8 | 6 | 6-1/4 |
| 1-1/4 | 6 | 7-1/2 |
| 1-3/8 | 7 | 8-1/4 |
| 1-1/2 | 7 | 9 |

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.0710 ALTERATION OF TOOLS AND EQUIPMENT.**

All tools and equipment, whether powered or manually operated, shall be used only for their intended purpose. Tools and equipment shall not be altered, modified, or used for other than their intended purpose without the manufacturer's written approval or unless under the direction of a competent person in accordance with accepted engineering requirements to prevent creating an additional hazard.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 1754*

## VEHICLES

### 5205.0750 MOTORIZED SELF-PROPELLED VEHICLES.

*[For text of subps 1 and 2, see M.R. 1987]*

Subp. 3. **Transportation of employees.** Vehicles being used to transport employees shall be equipped with a seating arrangement securely anchored, a rear end gate, a guardrail and steps or a ladder for mounting and dismounting.

A. Under no circumstances shall any employee be allowed to ride in a standing position or with arms or legs outside of the truck body, or seated on the side fenders, cabs, cabshields, rear of truck, or on the load unless such a position is dictated by a job assignment.

B. No explosives, flammable materials (excepting normal fuel supply), or toxic substances shall be transported in the passenger carrying area of vehicles carrying employees.

C. No vehicle transporting employees shall be moved until the driver has ascertained that all employees are seated and required guardrails and end gates are in place and doors closed.

D. No employee shall be allowed to get on or off any vehicle while it is in motion.

*[For text of subp 4, see M.R. 1987]*

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

### 5205.0755 POLICE AND PATROL VEHICLES.

All police and patrol vehicles that are marked in accordance with Minnesota Statutes, section 169.98, that may be used to transport violators or offenders shall be provided with an effective barrier between the front and back seat to protect the officers from assault. The barrier may be retractable so as not to be a hindrance to officers when not transporting violators or offenders. This part is effective January 1, 1989.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 1754*

### 5205.0760 POWERED INDUSTRIAL TRUCK OPERATIONS.

Subpart 1. **Restricted use.** All industrial trucks designed and constructed for use on solid hard level surfaces shall be restricted to such operations.

Subp. 2. **Surface condition.** All solid hard level surfaces must be free of cracks, irregularities, or holes that could upset the balance of the industrial truck.

Subp. 3. **Load positioning.** When a fork truck operator is positioning a load in an area which is not fully visible to the fork truck operator, the operator shall be assisted by a designated person who shall direct the safe placing of the load by using predetermined signals.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

### 5205.0765 SCISSOR POINT PROTECTION.

Scissor points on all rubber tired skid steer equipment including front end loaders shall be guarded to protect the operator.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

### 5205.0770 GREASE RACKS, HOISTS, AND PITS.

Subpart 1. **Vehicle support.** Vehicles shall not be supported on jacks or held suspended by ropes, chains, or cables but shall be supported by adequate blocking or cribbing or set on supports designed for that purpose.

Subp. 2. **Barricades.** Employees shall not be allowed to stand directly in front of self-propelled vehicles while directing the vehicle onto the hoist or pit, or to work in front of a moving vehicle unless a crib or barricade, adequate to stop the vehicle, is between the employee and the moving vehicle. The crib or barricade shall not in itself create any additional hazards to the employees.

Subp. 3. **Spacing.** A space of two feet or more shall be provided as working clearance between the sides of a vehicle on a floor hoist and any wall surface.

Subp. 4. **Safety factor.** On automotive hoists, an automatic mechanical device having a safety factor of three based on the manufacturer's rated load capacity shall be provided to hold the lift in the fully extended position at the manufacturer's rated load capacity.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

## MACHINE GUARDING

### 5205.0860 MACHINES WITH REVOLVING PARTS.

*[For text of subpart 1, see M.R. 1987]*

Subp. 2. **Guarding.** Each machine shall be fully guarded with a cover, hatch, or grate with an interlocking device that will prevent the cover, hatch, or grate from being opened while the rotating parts are in motion, and will also prevent the power operation of the machine while the cover, hatch, or grating is not fully closed and secured.

Subp. 3. **Secured position.** Each machine shall be effectively secured in position on the floor or foundation so as to eliminate unnecessary vibrations.

Subp. 4. **Labeling for operating speed.** The manufacturer's recommended speeds shall be stamped on the machine, and located where they are readily visible in letters not less than one-quarter inch in height. The maximum permissible speed shall be given in revolutions per minute (RPM).

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

### 5205.0865 MACHINE CONTROLS AND EQUIPMENT.

On machines with points of operation, pinch points, or nip points, each machine shall be equipped so it is possible for the operator to cut off the power to each machine without leaving the position at the point of operation.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 1754*

### 5205.0870 FOOT ACTUATED MACHINES.

The treadle or pedal of foot actuated machines, tools, or equipment shall be physically protected to prevent unintended operation.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

### 5205.0880 MOTOR START BUTTON.

The motor start button on machines with exposed points of operation, pinch points, or nip points shall be physically protected against unintended operation.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 1754*

**5205.0890 HYDRAULIC PRESSES.**

A barrier guard shall be maintained on all hydraulic presses, whether hand or power operated, where there is a possibility of materials being ejected from the press.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.0900** [Repealed, 12 SR 634]

**5205.0910** [Repealed, 12 SR 634]

**5205.0920** [Repealed, 12 SR 634]

**5205.0930** [Repealed, 12 SR 634]

**5205.0940** [Repealed, 12 SR 634]

**5205.0950** [Repealed, 12 SR 634]

## CONFINED SPACES

**5205.1000 SCOPE.**

Parts 5205.1000 to 5205.1040 prescribe minimum standards for preventing worker exposure to dangerous air contamination, oxygen deficiency, or oxygen enrichment as defined by part 5205.1010, within such spaces as silos, tanks, vats, vessels, boilers, compartments, ducts, sewers, pipelines, vaults, bins, tubs, pits, and other similar spaces. A tank or other vessel under construction may not meet the definition of "confined space" until it is completely enclosed.

Parts 5205.1000 to 5205.1040 do not apply to underwater operations conducted in diving bells or other underwater devices or to supervised hyperbaric facilities.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 1754*

**5205.1010 DEFINITIONS.**

Subpart 1. **Confined space.** "Confined space" is defined as a special configuration that could result in any of the following:

A. atmospheric condition - a condition in which a dangerous air contamination, oxygen deficiency, or oxygen enrichment may exist or develop;

B. entry/exit access - a condition where the emergency removal of a suddenly disabled person is difficult due to the location or size of the access opening; or

C. engulfment condition - a condition where the risk of engulfment exists or could develop.

Subp. 2. **Confined space entry.** "Confined space entry" means any action resulting in any part of the worker's face breaking the plane of any opening of the confined space, and includes any ensuing work activities inside the confined space.

Subp. 3. **Dangerous air contamination.** "Dangerous air contamination" is an atmosphere presenting a threat of death, acute injury, illness, or disablement due to the presence of flammable, explosive, toxic, or otherwise injurious or incapacitating substances.

A. Dangerous air contamination due to the flammability of a gas or vapor is defined as an atmosphere containing the gas or vapor at a concentration greater than ten percent of its lower explosive (lower flammable) limit.

B. Dangerous air contamination due to a combustible particulate is defined as a concentration greater than ten percent of the minimum explosive concentration of the particulate.

C. Dangerous air contamination due to a toxic, corrosive, or asphyxiant substance listed in Code of Federal Regulations, title 29, part 1910, subpart Z, is defined as a concentration above the listed numerical value of the permissible exposure limit (PEL). In addition, an atmospheric concentration above the numerical limit listed on the Material Safety Data Sheet prepared for a hazardous substance in conformance with Code of Federal Regulations, title 29, section 1910.1200(g)(2)(vi) or the Minnesota Employee Right-to-Know Standards, chapter 5206.

D. Dangerous air contamination that presents an acute illness hazard represents an atmospheric concentration immediately dangerous to life and health (IDLH); for example, above a maximum concentration from which one could escape within 30 minutes or the length of time a worker will be exposed, whichever is longer, without any escape impairing symptoms or any immediate severe health effects. "Immediate severe health effect" means that an acute clinical sign of a serious, exposure related reaction is manifested within 72 hours after exposure.

Subp. 4. **Engulfment.** "Engulfment" means the surrounding and effective capture of a person by finely divided particulate matter or a liquid.

Subp. 5. **Oxygen deficiency.** "Oxygen deficiency" is defined as an atmosphere containing oxygen at a concentration of less than 19.5 percent by volume.

Subp. 6. **Oxygen enrichment.** "Oxygen enrichment" is defined as an atmosphere containing oxygen at a concentration greater than 23 percent by volume.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 1754*

**5205.1020 OPERATING PROCEDURES AND WORKER TRAINING.**

Subpart 1. **Implementation.** The employer shall implement the provisions of this part before any worker is allowed to enter a confined space.

Subp. 2. **Entry permit system.** The employer shall develop, implement, and use an entry permit system that includes a written permit procedure that provides all the means necessary to:

A. determine all confined spaces and identify them to the workers to prevent unauthorized entry;

B. determine the actual and potential hazards associated with the space at the time of entry so the employer can choose the appropriate means to execute a safe entry;

C. assure by appropriate testing that the control measures used are effective; and

D. provide for preplanned emergency rescue.

Subp. 3. **Entry permit.** A written permit form must be completed before allowing a worker to enter a confined space. The written permit must contain the following minimum specific information for each permit entry space:

A. date;

B. location;

C. time of issue;

D. time of expiration;

E. names of workers assigned to enter;

F. the name and position of the person authorizing or in charge of the entry;

G. description of the hazards known or reasonably expected to be present in the confined space;

H. the atmospheric testing required to be done immediately before and during the entry period;

I. the designated individual responsible for performing the tests;

J. the personal protective equipment required, including respiratory protection, clothing, or harnesses required for entry and rescue;

K. description of any additional hazards that may be reasonably expected to be generated by the entrants' activities in the space;

L. identification of all special work practices or procedures to be followed; and

M. specification of all means of isolation, cleaning, purging, or inerting to be done before entry to remove or control those hazards, or certification that these procedures have been done if a hazardous air contamination or oxygen deficiency condition exists.

Subp. 4. **Duration and retention of permit.** The maximum duration for which a permit form may be issued is one shift except as indicated in part 5205.1040, subpart 1. Each written permit form for confined space entry must be retained for a minimum of 30 days. Permits shall be readily available to all workers before entering a confined space, and the permits shall remain at the work site as long as the work is being performed there.

Where atmospheric testing showed a dangerous air contamination, oxygen deficiency, or oxygen enrichment, the employer shall retain the written permit form or record showing the results of the atmospheric testing for a minimum of one year.

Subp. 5. **Operating procedures.**

A. Written, understandable operating and rescue procedures shall be developed and provided to affected workers.

B. When respiratory protection is used, a respiratory protection program as outlined in Code of Federal Regulations, title 29, section 1910.134, shall be in place.

C. Operating procedures shall conform to the applicable requirements of parts 5205.1030 and 5205.1040 and shall include provision for surveillance of the surrounding area to avoid hazards such as drifting vapors from other work operations.

Subp. 6. **Worker training.**

A. Workers who will enter the confined space and standby persons required by part 5205.1040 shall be trained in operating and rescue procedures and on the hazards they may encounter. This training shall be conducted annually or before confined space entry.

B. Workers who will perform atmospheric monitoring in confined spaces shall be trained on the use of such equipment according to the manufacturers' instructions before confined space entry and then on an annual basis thereafter.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 1754*

## 5205.1030 PRE ENTRY PROCEDURES.

Subpart 1. **Application.** The applicable provisions of this part shall be implemented before entry into a confined space is permitted.

Subp. 2. **Disconnection of lines.** Lines that may convey flammable, explosive, toxic, or otherwise injurious or incapacitating substances into the space shall be disconnected, blinded, locked out, or blocked off by other positive means to prevent the development of dangerous air contamination, oxygen deficiency, or oxygen enrichment within the space. The disconnection or blind shall be so located or done in such a manner that inadvertent reconnection of the line or removal of the blind is effectively prevented. Part 5205.0680 applies where lockout devices are required.

This subpart does not apply to public utility gas distribution or gas transmission systems.

This subpart does not require blocking of all laterals to sewers or storm drains. Where experience or knowledge of industrial use indicates materials resulting in dangerous air contamination may be dumped into an occupied sewer or storm drain, all such laterals shall be blocked.

Subp. 3. **Calibration of testing and monitoring equipment.** Air testing and monitoring equipment shall be maintained and calibrated according to manufacturers' instructions. This equipment shall be periodically calibrated with an appropriate test gas to assure proper operation. Records of such calibration and field tests shall be maintained for a minimum of one year. Calibration and field test information, including type of test required, date tests were due, and date tests were completed, shall be affixed to the instrument or be readily available at the time of use.

Subp. 4. **Air tests.** The air in confined spaces shall be tested with an appropriate device or method to determine whether dangerous air contamination, oxygen deficiency, or oxygen enrichment exists before entry is made. While occupied, additional continuous or periodic monitoring for dangerous air contamination, oxygen deficiency, or oxygen enrichment shall be done. A written record of the testing results shall be made and kept at the work site for the duration of the work. Affected workers or their representatives shall be afforded an opportunity to review and record the testing results.

Subp. 5. **Injurious corrosive substances.** Workers in confined spaces that have last contained injurious or corrosive substances to the eyes or body shall be provided with, and shall be required to wear, appropriate personal protective clothing or devices in accordance with Code of Federal Regulations, title 29, section 1910.132. In addition, an eyewash and safety shower as required by Code of Federal Regulations, title 29, section 1910.151 shall be provided within the work area outside of the confined space for immediate emergency use.

Subp. 6. **Interconnected spaces.** Where interconnected spaces are blocked off as a unit, each space shall be tested and the results recorded in accordance with subpart 4. The most hazardous condition found shall govern procedures to be followed.

Subp. 7. **Ventilation.** Where the existence of dangerous air contamination, oxygen deficiency, or oxygen enrichment is demonstrated by tests performed under subpart 4, existing ventilation shall be augmented by appropriate means if practical and feasible.

When additional ventilation provided in accordance with this subpart has removed dangerous air contamination, oxygen deficiency, or oxygen enrichment as demonstrated by additional testing conducted and recorded under subpart 4, entry into and work within the space may proceed subject to part 5205.1040.

Subp. 8. **Ignition sources.** No sources of ignition may be introduced into the space until implementation of appropriate provisions of this section has ensured that dangerous air contamination due to flammable or explosive substances does not exist.

Subp. 9. **Oxygen consuming equipment.** Whenever oxygen consuming equipment is to be used, measures shall be taken to ensure adequate combustion air and exhaust gas venting.

Subp. 10. **Oxygen enrichment condition or use of oxygen enrichment equipment.** Whenever oxygen enrichment is possible due to conditions within the space, or oxygen enrichment equipment is to be used, measures shall be taken to ensure that the oxygen level does not exceed 23 percent in the confined space. If tests indicate the oxygen level to be greater than 23 percent, hot work is prohibited until ventilating techniques have reduced the oxygen level to less than 23 percent.

Subp. 11. **Smoking.** Smoking shall not be allowed in confined spaces or within 20 feet of a confined space opening.

Subp. 12. **Automatic fire protection systems.** Where there is no ready exit from spaces equipped with automatic fire suppression systems employing harmful design concentrations of toxic or oxygen displacing gases, or total foam flooding, such systems must be deactivated. When it is not practical or safe to deactivate such systems, the provisions of part 5205.1040, subpart 3, shall apply during entry into and work within the spaces.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 1754*

## 5205.1040 ENTRY INTO AND WORK WITHIN CONFINED SPACES.

Subpart 1. **Class I; confined spaces where an atmosphere with dangerous air contamination, oxygen deficiency, or oxygen enrichment is unlikely to develop.**

A. Employers whose operations require workers to perform routine repetitive entry into low hazard chambers such as boilers, vaults, vessels, tanks, bins, and vats, where no risk of engulfment can exist, and where the atmosphere cannot develop a dangerous air contaminant or oxygen enrichment, and where all known sources of hazard are positively controlled, may issue an annual permit for this type of entry instead of separate permits for each space, if established entry practices and procedures are in effect as outlined below. The employer may, at its discretion, allow entry by one or more workers without a standby person when work under the following conditions is performed:

(1) Establish specific entry practices and procedures as required in part 5205.1020, subpart 3, items A, B, and D to I, that must be followed for entry by annual permit before any worker may be authorized to make an entry.

(2) Train workers in the practices and procedures required for such entries.

(3) Assure that one or more of the following requirements are met:

(a) the space has been ventilated before entry using a mechanically powered ventilator for not less than is specified in the ventilation nomograph prepared for that ventilator, and that ventilation continues throughout the entry;

(b) all areas of the confined space are continuously and effectively ventilated; such ventilation shall provide positive ventilation of clean air at a rate of at least 200 cubic feet per minute per occupant, or in confined spaces larger than 2,000 cubic feet, six air changes of the confined space volume per hour; or

(c) there is no effective ventilation, but appropriate continuous oxygen monitoring is performed to assure that permit conditions are maintained.

(4) Revoke the permit whenever any tests performed during confined space occupancy show deviation from acceptable conditions to a hazardous condition. In these circumstances, entry may be made only by an entry procedure as outlined in subpart 2 or 3.

B. Employers whose operations require workers to perform routine repetitive entry into confined spaces where entry permits are required and that are unlikely to develop a dangerous air contaminant, oxygen deficiency, or oxygen enrichment and have no potential for an engulfment condition, may issue an annual permit for this type of entry instead of separate permits for each space if established entry practices and procedures are in effect as outlined below. The employer may, at its discretion, allow entry by one or more workers without a standby person when work under the following conditions is performed:

(1) Establish specific entry practices and procedures as required in part 5205.1020, subpart 3, items A, B, and D to I, that must be followed for entry by annual permit before any worker may be authorized to make an entry.

(2) Train workers in the practices and procedures required for such entries.

(3) Assure that whenever entry into a confined space is to be made, workers test the atmosphere before entry using an appropriate direct reading instrument (or other device capable of quantitatively identifying anticipated contaminants) with a remote sampling probe, testing for the following conditions and in the following order: oxygen concentration, combustible gas, and suspected toxic material, if any. While occupied, additional continuous monitoring for these gases or vapors shall be done during the entry period to assure that a potentially dangerous atmosphere does not develop in the confined space.

(4) Assure that continuous and effective positive ventilation is provided to the confined space at a minimum rate of 200 cubic feet per minute of clean air per occupant or, in confined spaces larger than 2,000 cubic feet, an exchange of six air changes of the confined space volume per hour.

(5) Revoke the permit whenever any tests performed during confined space occupancy show deviation from acceptable conditions to a hazardous condition. In these circumstances, entry may be made only by an entry procedure as outlined in subpart 2 or 3.

Subp. 2. **Class II; confined spaces where an atmosphere free of dangerous air contamination, oxygen deficiency, or oxygen enrichment has been verified.**

A. At least one person shall stand by on the outside of the confined space ready to give assistance in case of emergency.

B. Visual, voice, or signal line communications shall be maintained between all individuals in the confined space and the standby person.

C. An approved safety belt or harness with an attached line shall be used where practical and feasible. The free end of the line shall be secured outside the entry opening. The line shall be at least 2,000 pounds test.

D. The standby person shall not enter the confined space without alerting an emergency response team such as the fire department or other trained rescue workers of the intent to enter the confined space. Entry shall only occur after proper tests have been performed to show that a dangerous air contaminant, oxygen deficiency, or oxygen enrichment does not exist or the standby person is protected as prescribed in subpart 3, items C and D, subitem (1).

Subp. 3. **Class III; confined spaces where an atmosphere free of dangerous air contamination, oxygen deficiency, or oxygen enrichment cannot be verified.** The requirements of this part apply to entry into and work within a confined space whenever an atmosphere free of dangerous air contamination, oxygen deficiency, or oxygen enrichment cannot be verified through the implementation of the applicable provisions of part 5205.1030, or whenever due to an emergency, dangerous air contamination, oxygen deficiency, or oxygen enrichment cannot be prevented through the implementation of the applicable provisions of part 5205.1030.

A. Tanks, vessels, or other confined spaces with side and top openings shall be entered from side openings when practicable. For the purposes of this part, side openings are those within 42 inches of the bottom.

B. Appropriate, approved respiratory protective equipment, in accordance with Code of Federal Regulations, title 29, section 1910.134, shall be provided and worn.

C. An approved safety belt or harness with an attached line must be used. The free end of the line shall be secured outside the entry opening. The line shall be at least 2,000 pounds test.

D. At least one person shall stand by on the outside of the confined space ready to give assistance in case of emergency.

(1) The standby person shall have appropriate, approved, respiratory protective equipment, including an independent source of breathing air that conforms with Code of Federal Regulations, title 29, section 1910.134(d), available for immediate use.

(2) A standby person protected as prescribed by items C and D may enter the confined space, but only in case of emergency and only after donning the required personal protective equipment and alerting an emergency response team such as the fire department or other trained rescue workers of their intention to enter the confined space.

(3) Visual, voice, or signal line communications shall be maintained between all individuals in the confined space and the standby person.

E. When entry must be made through a top opening, the following requirements also apply.

(1) The safety harness shall be of the type that suspends a person in an upright position.

(2) An approved hoisting device or other effective means shall be provided for lifting workers out of the space.

F. Work involving the use of flame, arc, spark, or other source of ignition is prohibited within a confined space (or any adjacent space having common walls, floor, or ceiling with the confined space) that contains, or is likely to develop, dangerous air contamination due to flammable or explosive substances.

G. Whenever gases such as nitrogen are used to provide an inert atmosphere for preventing the ignition of flammable gases or vapors, no flame, arc, spark, or other source of ignition may be permitted unless the oxygen concentration is maintained at less than 20 percent of the concentration that will support combustion.

(1) Testing of the oxygen content shall be conducted with sufficient frequency to ensure conformance with this requirement.

(2) A written record of the results of such testing shall be made and kept at the work site for the duration of the work.

H. Only approved lighting and electrical equipment may be used in confined spaces subject to dangerous air contamination by flammable or explosive substances.

Subp. 4. **Precautions for emergencies involving work in confined spaces.** At least one person trained in first aid and cardiopulmonary resuscitation (CPR) shall be immediately available whenever the use of respiratory protective equipment is required by this part. Standards for CPR training shall follow the principles of the American Heart Association or the American Red Cross.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 1754*

## CRANES AND HOISTS

### 5205.1200 CRANES AND HOISTS.

Subpart 1. **Scope.** This part applies to any crane, derrick, or hoist having a maximum rated capacity of one ton or less; to railway and automobile wrecking cranes; skip hoists; hoistlike units used for horizontal pulling only; mine hoists; conveyors and shovels; drag line excavators; backhoes; and any equipment such as mobile scaffolds, towers, and platforms.

This part also applies to all monorail cranes, underhung cranes, and top running single girder cranes where the ends of the girders are fastened or fixed to the structure.

Subp. 2. **Initial inspection.** Before initial use, all new and altered cranes shall be inspected to ensure compliance with this part.

Subp. 3. **Frequent inspection.** Items A to F shall be inspected for defects at daily to monthly intervals, or as specifically indicated, including observation during operation for any defects that might appear between regular inspections. All deficiencies, such as those listed in items A to F, that constitute a safety hazard shall be corrected before placing the unit in service.

A. All functional operating mechanisms for maladjustment interfering with proper operation - daily.

B. Lines, tanks, valves, drain pumps, and other parts of air or hydraulic systems for deterioration or leakage - daily.

C. Hooks with deformation or cracks - visual inspection daily, monthly inspection with signed reports. For hooks with cracks or having more than 15 percent in excess of normal throat opening or more than ten degrees twist from the plane of the unbent hook, refer to subpart 6, item B, subitem (1).

D. Hoist chains, including end connections, for excessive wear, twist, distorted links, or stretch beyond manufacturer's recommendations - visual inspection daily, monthly inspection with signed certification record.

E. All functional operating mechanisms for excessive wear of components.

F. Rope reeving for noncompliance with manufacturer's recommendations.

Subp. 4. **Periodic inspection.** Complete inspections of the crane shall be performed monthly or as indicated in subpart 5. These inspections shall include the requirements of subpart 3 and items A to I. All deficiencies, such as those listed in items A to I, that constitute a safety hazard shall be corrected before placing the unit in service:

A. deformed, cracked, or corroded members;

B. loose bolts or rivets;

C. cracked or worn sheaves and drums;

D. worn, cracked, or distorted parts such as pins, bearings, shafts, gears, rollers, and locking and clamping devices;

E. excessive wear on brake system parts, linings, pawls, and ratchets;

F. load, wind, and other indicators over their full range, for any significant inaccuracies;

G. gasoline, diesel, electric, or other power plants for improper performance or noncompliance with applicable safety requirements;

H. excessive wear of chain drive sprockets and excessive chain stretch; and

I. electrical apparatus, for signs of pitting or any deterioration of controller contactors, limit switches, and push-button stations.

Subp. 5. **Cranes not in regular use.** A crane that has been idle for one month or more, but less than six months, shall be given an inspection conforming with the requirements of subpart 3 before being placed in service.

A crane that has been idle for over six months shall be given a complete inspection conforming with subparts 3 and 4 before being placed in service.

Standby cranes shall be inspected at least semiannually in accordance with subpart 3.

Subp. 6. **Adjustments and repairs.** Any condition disclosed by the inspections required by this part shall be corrected before operation of the crane is resumed. Adjustments and repairs shall be done only by designated, qualified personnel.

A. Adjustments shall be maintained to ensure correct functioning of all components, such as the following:

(1) all functional operating mechanisms;

(2) limit switches;

(3) control systems;

(4) brakes; and

(5) power plants.

B. Repairs or replacements required by this part shall be provided promptly before resumed operation, including any deficiencies such as:

(1) crane hooks showing defects described in subpart 3, item C, shall be discarded;

(2) load attachment chains and rope slings showing defects described in subpart 3, items D and E, respectively;

(3) all critical parts that are cracked, broken, bent, or excessively worn; and

(4) pendant control stations shall be kept clean and function labels kept legible.

C. After adjustments and repairs have been made, the crane shall not be operated until all guards have been reinstalled, safety devices reactivated, and maintenance equipment removed.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.1210 HOIST HOOK SAFETY DEVICES.**

Safety latches (mousings) shall be provided on all hoist hooks used on hoists or cranes that lift or travel with loads attached. This includes the hook used to attach the hoist to the rail, trolley, or structure.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.1220 WARNING SIGNAL.**

Whenever a crane or hoist is used to convey molten metal, a gong or other effective warning signal shall be provided and used.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**PERSONNEL PLATFORMS SUSPENDED FROM CRANES AND DERRICKS**

**5205.1230 SCOPE AND APPLICATION.**

The standards in parts 5205.1230 to 5205.1300 apply to the hoisting of personnel platforms on the load line or other line off the boom of friction or hydraulic portal, tower, crawler, locomotive, truck, and wheel mounted cranes or derricks. No crane or derrick function may be performed while an employee is on a personnel platform attached to a load line on such equipment unless the requirements of parts 5205.1230 to 5205.1300 are met. The practice of hoisting employees on such equipment is only permitted under the specific circumstances defined in part 5205.1290.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.1240 DEFINITIONS.**

Subpart 1. **Scope.** The terms used in parts 5205.1230 to 5205.1300 have the meanings given them in this part.

Subp. 2. **Anti two blocking device.** "Anti two blocking device" means a positive acting device that prevents contact between the load block or fall ball and the boom tip.

Subp. 3. **Hoisting.** "Hoisting" means lowering, lifting, or suspending.

Subp. 4. **Live boom.** "Live boom" means a boom in which lowering is controlled by brake without aid from other lowering retarding devices.

Subp. 5. **Setup location.** "Setup location" means the location to which the crane or derrick is brought and set up, including assembly and leveling.

Subp. 6. **Two block damage prevention feature.** "Two block damage preven-

tion feature" means a system that deactivates the hoisting action before damage occurs in the event of a two block situation. Two blocking occurs when the boom is extended or lowered and the load cable is not paid out simultaneously so the bottom block contacts the boom point.

Subp. 7. **Work location.** "Work location" means the location to which the personnel platform is positioned.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.1250 GENERAL REQUIREMENTS.**

The use of a friction or hydraulic portal, tower, crawler, locomotive, truck, or wheel mounted crane or derrick to hoist personnel platforms is permitted when their use is as safe as the erection, use, or dismantling of conventional means of reaching the work site, such as ladders, stairways, aerial lifts, elevating work platforms or scaffolds, or when those means are either more hazardous, or are not possible because of structural design or work site conditions.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.1260 OPERATIONAL CRITERIA.**

Subpart 1. **Application.** The general provisions in this part apply when cranes or derricks are used to hoist employees.

A. Lifting and lowering speeds shall not exceed 100 feet (30.48 meters) per minute. Free fall is prohibited.

B. The minimum load hoist wire rope safety factor is seven.

C. Load and boom hoist drum brakes, swing brakes, and locking devices such as pawls or dogs, as equipped, shall be engaged when the occupied personnel platform is in a stationary working position. A positive means controllable from the operator's station shall be provided to hold the drum from rotating in the lowering direction and be capable of holding the rated load indefinitely without further attention from the operator.

D. The crane shall be uniformly level within one percent of level grade and located on firm footing. Crane outriggers, if provided, shall be used according to manufacturer's specifications when hoisting employees.

E. The total weight of the loaded personnel platform and related rigging shall not exceed 50 percent of the rated capacity for the radius and configuration of the crane or derrick.

F. The use of machines having live booms is prohibited.

Subp. 2. **Instruments and components.** Cranes or derricks used to hoist employees shall be equipped as follows:

A. A boom angle indicator shall be installed on cranes, readily visible to the operator.

B. Telescoping booms shall be marked or equipped with a device to clearly indicate at all times to the operator the boom's extended length.

C. An anti two blocking device or two block damage prevention feature shall be installed. Prevention features shall be maintained in adverse weather conditions so as to function properly at all times.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.1270 PERSONNEL PLATFORM.**

Subpart 1. **Design criteria.** The personnel platform shall be designed by a qualified person competent in structural design.

A. The suspension system shall be designed to minimize tipping of the platform due to movement of employees occupying the platform.

B. The entire personnel platform shall be designed with a minimum safety factor of five.

C. Six feet (1.8 meters) minimum headroom shall be provided for employees occupying the platform.

Subp. 2. **Platform specifications.** Each personnel platform shall be provided with perimeter protection from the floor to 42 inches (106.7 centimeters), ±3 inches (7.62 centimeters) above the floor, that shall consist of either solid construction or expanded metal having openings no greater than one-half inch (1.27 centimeters).

A. A grab rail shall be provided inside the personnel platform.

B. An access gate, if provided, shall swing inward and shall be equipped with a restraining device to prevent accidental opening.

C. Overhead protection shall be provided on the personnel platform when there is the potential for exposure to falling objects.

D. All rough edges exposed to contact by employees occupying the platform shall be ground smooth.

E. All welding shall be performed by a welder qualified for the weld grades, types, and material specified in the design.

F. A plate or other permanent marking shall be conspicuously posted on the platform indicating the personnel platform weight and its rated load capacity.

G. Personnel platforms shall be easily identifiable by color or marking as being for personnel only.

Subp. 3. **Personnel platform loading.** The rated load capacity of the personnel platform shall not be exceeded.

The personnel platform shall not be used for general transportation or movement of employees or lifting of materials or tools other than those used by employees to do their work from the platform.

Materials on an occupied personnel platform shall be secured and evenly distributed while the platform is in motion.

Subp. 4. **Rigging.** When a wire rope bridle is used to connect the personnel platform to the load line, the bridle legs shall be connected to a single ring or shackle.

A. Hooks on fall ball assemblies, lower load blocks, or other attachment assemblies shall be of a type that can be closed and locked, eliminating the hook throat opening. Alternatively, a shackle with a screw pin, nut, and retaining pin may be used.

B. Wire rope, shackles, rings, and other rigging hardware shall have a minimum safety factor of seven.

C. All eyes on wire rope slings shall be fabricated with thimbles.

D. The platform shall be tied off above the load block or above the ball with an independent safety line from the frame of the platform or cage.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.1280 INSPECTION AND TESTING.**

Subpart 1. **Inspection.** In addition to the inspections required by Code of Federal Regulations, title 29, section 1926.550(a)(5), (a)(6), (b)(2), and (e), cranes and derricks that are used to hoist personnel platforms shall be inspected by a competent person, as defined in Code of Federal Regulations, title 29, section 1926.32(f), at the beginning of each shift and before hoisting employees on the personnel platform after the crane or derrick has been used for any material

handling operations in which greater than 50 percent of the rated capacity was lifted.

Subp. 2. **Trial lift.** A trial lift with the personnel platform unoccupied shall be made for each new work location and at the beginning of each shift to ensure that all systems, controls, and safety devices are functioning properly.

Subp. 3. **Full cycle test lift.** A full cycle operational test lift at 150 percent of the intended load of the personnel platform shall be made before hoisting employees for the first time at each new setup location.

A visual inspection of the crane or derrick, personnel platform, and base support shall be conducted immediately after lift testing in order to determine whether the testing has produced any adverse effect upon any component or structure.

Any defects that may affect the safe operation of the equipment found during such inspections shall be corrected before further use.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.1290 SAFE WORK PRACTICES.**

Subpart 1. **Employee placement.** Employees shall keep all parts of their bodies inside the platform during raising, lowering, and positioning of the personnel platform.

Subp. 2. **Securing platform.** If the personnel platform is not landed, it shall be secured to the structure before employees exit or enter the platform.

Subp. 3. **Tag lines.** Tag lines shall be used where practical.

Subp. 4. **Hoisting during travel.** Hoisting employees while the crane is traveling is prohibited, except for portal and tower cranes operating on a fixed track.

Subp. 5. **Operator's duty.** The crane or derrick operator shall remain at the controls at all times when hoisting employees.

Subp. 6. **Weather conditions.** Hoisting of employees shall be discontinued upon indication of any severe weather conditions.

Subp. 7. **Conditions for hoisting employees.** The platform shall be hoisted a few inches and inspected in ensure that it is secure and properly balanced before employees are allowed to occupy the platform. In addition, employees shall not be hoisted unless the following conditions are determined to exist:

A. hoist ropes are free of kinks;

B. multiple part lines are not twisted around each other;

C. the primary attachment is centered over the platform; and

D. if the wire rope is slack, the hoisting system shall be inspected to ensure all ropes are properly seated on drums and in sheaves.

Subp. 8. **Communication.** Employees being hoisted shall remain in continuous sight of or communication with the operator or signal person.

Subp. 9. **Use of body belt.** Employees occupying the personnel platform shall, at all times, wear a body belt with lanyard appropriately attached to the load block or fall ball, or to a structural member within the personnel platform capable of supporting a fall impact.

Subp. 10. **Other use of equipment.** Bridles and associated hardware used for attaching the personnel platform to the hoist line shall not be used for any other service.

Subp. 11. **Caution required.** When lowering a personnel platform, the operator shall not allow the ball to lower into the platform once the platform is landed.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*

**5205.1300 PRELIFT MEETING.**

Subpart 1. **Meeting to review requirements.** A meeting attended by the crane or derrick operator, signal person (if required by this part or another standard), person to be lifted, and the person responsible for the task to be performed shall be held to review the appropriate requirements of parts 5205.1230 to 5205.1300 and the procedures to be followed.

Subp. 2. **Time of meeting.** The meeting required in subpart 1 shall be held before the beginning of personnel hoisting operations at each new work location and thereafter for any employees newly assigned to the operation.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634*