

## CHAPTER 5205

### DEPARTMENT OF LABOR AND INDUSTRY

### SAFETY AND HEALTH STANDARDS

5205.0010	ADOPTION OF FEDERAL OCCUPATIONAL SAFETY AND HEALTH STANDARDS BY REFERENCE.	5205.0580	HAND-POWERED PLATFORM PASSENGER TYPE MANLIFTS.
5205.0015	APPLICATION OF RULES.	<b>MAINTENANCE AND REPAIR OF BUILDINGS AND EQUIPMENT</b>	
<b>PERSONAL PROTECTIVE EQUIPMENT</b>		5205.0650	SCOPE.
5205.0020	HEAD PROTECTION.	5205.0660	MAINTENANCE GOALS.
5205.0030	HIGH VISIBILITY PERSONAL PROTECTIVE EQUIPMENT.	5205.0665	ELECTRICAL REQUIREMENTS.
	<b>WALKING, WORKING SURFACES</b>	5205.0670	BLOCKING AND CRIBBING MACHINERY.
		5205.0675	COVERS AND OVERHEAD DOORS.
		5205.0685	KNIVES AND CUTTING TOOLS.
5205.0040	ELEVATED STORAGE PLATFORM OR RACK.	5205.0686	PRESSURE HOSES.
5205.0050	SHIPS LADDERS.	5205.0690	LUBRICATION OF MOVING MACHINERY.
5205.0060	SHIPS LADDERS, SPECIAL REQUIREMENTS.	5205.0700	WIRE ROPE CLIPS.
5205.0065	SUSPENSION SCAFFOLDS.	5205.0710	ALTERATION OF TOOLS AND EQUIPMENT.
5205.0080	WELLS, PITS, SHAFTS, AND OTHER SIMILAR SPACES.	<b>VEHICLES</b>	
<b>GENERAL ENVIRONMENTAL CONTROLS</b>		5205.0750	MOTORIZED SELF-PROPELLED VEHICLES.
5205.0100	SUBMISSION OF ENVIRONMENTAL CONTROL MEASURES.	5205.0755	POLICE AND PATROL VEHICLES.
5205.0105	VENT PIPE OUTLETS.	5205.0760	POWERED INDUSTRIAL TRUCK OPERATIONS.
5205.0110	INDOOR WORKROOM VENTILATION AND TEMPERATURE.	5205.0765	SCISSOR POINT PROTECTION.
5205.0115	GAS FIRED MACHINES AND APPLIANCES.	5205.0770	GREASE RACKS, HOISTS, AND PITS.
5205.0116	CARBON MONOXIDE MONITORING.	<b>MACHINE GUARDING</b>	
<b>ILLUMINATION</b>		5205.0850	PNEUMATIC POWER TOOLS.
5205.0120	MINIMUM LEVELS OF ILLUMINATION.	5205.0860	MACHINES WITH REVOLVING PARTS.
5205.0130	DIFFUSION AND DISTRIBUTION OF LIGHT.	5205.0865	MACHINE CONTROLS AND EQUIPMENT.
5205.0140	EXIT AND EMERGENCY LIGHTING.	5205.0870	FOOT ACTUATED MACHINES.
5205.0150	MAINTAINING THE LEVEL OF ILLUMINATION.	5205.0880	MOTOR START BUTTON.
		5205.0890	HYDRAULIC PRESSES.
<b>VENTILATION FOR GARAGES</b>		<b>CRANES AND HOISTS</b>	
5205.0200	GARAGE VENTILATION.	5205.1200	CRANES AND HOISTS.
		5205.1210	HOIST HOOK SAFETY DEVICES.
		5205.1220	WARNING SIGNAL.
<b>STEAM BOILERS</b>		<b>PERSONNEL PLATFORMS SUSPENDED FROM CRANES AND DERRICKS</b>	
5205.0330	STEAM BOILERS.	5205.1230	PERSONNEL PLATFORMS SUSPENDED FROM CRANES AND DERRICKS.
<b>PLATFORM MANLIFTS</b>		<b>HOPPERS</b>	
5205.0550	INSTALLATION LIMITATIONS.	5205.1400	INSPECTION OF HOPPERS.
5205.0560	INSPECTION.		
5205.0570	TYPES OF MANLIFTS.		

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

Subpart 1. **Title 29.** 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 listed in subparts 2 to 7.

Subp. 2. **Part 1910.** 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 as follows:

##### **A. Federal Register, Volume 43:**

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

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

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

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

**B. Federal Register, Volume 44:**

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

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

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

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

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

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

**C. Federal Register, Volume 45:**

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

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

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

(4) 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."

**D. Federal Register, Volume 46:**

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

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

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

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

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

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

**E. Federal Register, Volume 47:**

(1) 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)."

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

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

(4) 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)."

F. Federal Register, Volume 48:

- (1) Federal Register, Vol. 48, No. 15, dated 1/21/83; "Occupational Exposure to Coal Tar Pitch Volatiles; Modification of Final Interpretation: 1910.1022."
- (2) Federal Register, Vol. 48, No. 25, dated 2/4/83; "Occupational Exposure to Cotton Dust; Stay for Knitting and Hosiery Industry; 1910.1043."
- (3) 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)."
- (4) Federal Register, Vol. 48, No. 125, dated 6/28/83; "Hearing Conservation Amendment, Corrections to Final Rule."

G. Federal Register, Volume 49:

- (1) Federal Register, Vol. 49, No. 4, dated 1/6/84; "Commercial Diving Operations; Deletion of 1910.411."
- (2) Federal Register, Vol. 49, No. 24 dated 2/3/84; "Servicing of Single Piece and Multipiece Rim Wheels; 1910.177."
- (3) Federal Register, Vol. 49, No. 29, dated 2/10/84; "Revocation of Advisory and Repetitive Standards."
- (4) Federal Register, Vol. 49, No. 37, dated 2/23/84; "Occupational Exposure to Cotton Dust; Partial Administrative Stay of 1910.1043(m)(2)(ii)."
- (5) 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)."
- (6) Federal Register, Vol. 49, No. 122, dated 6/22/84; "Occupational Exposure to Ethylene Oxide (1910.1047), Final Rule."

H. Federal Register, Volume 50:

- (1) Federal Register, Vol. 50, No. 6, dated 1/9/85; "Educational/Scientific Diving: Guidelines for Scientific Diving (Appendix B) Subpart T of Part 1910."
- (2) Federal Register, Vol. 50, No. 22, dated 2/1/85; "Power Lawnmowers: Amendments; 1910.243(e)."
- (3) Federal Register, Vol. 50, No. 48, dated 3/12/85; "Occupational Exposure to Ethylene Oxide (1910.1047); Amendment of Effective Dates."
- (4) Federal Register, Vol. 50, No. 72, dated 4/15/85; "Occupational Exposure to Cotton Dust (1910.1043); Extension of Administrative Stay."
- (5) Federal Register, Vol. 50, No. 178, dated 9/13/85; "Coke Oven Emissions (1910.1029); Deletion of Portions of Standard."
- (6) Federal Register, Vol. 50, No. 198, dated 10/11/85; "Occupational Exposure to Ethylene Oxide (1910.1047); Labeling Requirements."
- (7) Federal Register, Vol. 50, No. 240, dated December 13, 1985; "Occupational Exposure to Cotton Dust; 29 Code of Federal Regulations 1910.1043."

I. Federal Register, Volume 51:

- (1) 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."
- (2) Federal Register, Vol. 51, No. 128, dated July 3, 1986; "Occupational Exposure to Cotton Dust (1910.1043), Corrections and Information Collection Requirements Approval."
- (3) Federal Register, Vol. 51, No. 132, dated July 10, 1986; "Occupational Exposure to Ethylene Oxide (1910.1047), Technical Amendments and Corrections to Final Rule."
- (4) Federal Register, Vol. 51, No. 133, dated July 11, 1986; "Electrical Standards for Construction, Part 1926, Subpart K."

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

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

(7) 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)."

(8) 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."

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

### J. Federal Register, Volume 52:

(1) 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."

(2) 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)."

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

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

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

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

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

### K. Federal Register, Volume 53:

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

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

(3) Federal Register, Vol. 53, No. 66, dated April 6, 1988; "Occupational Exposure to Ethylene Oxide (1910.1047)."

(4) Federal Register, Vol. 53, No. 70, dated April 12, 1988; "Safety Testing or Certification of Certain Workplace Equipment and Materials; Deletion of Specific Testing Laboratory Names; Definition of Nationally Recognized Testing Laboratory; Determination of Eligible Testing Organizations (1910.7)."

(5) Federal Register, Vol. 53, No. 96, dated May 18, 1988; "Grain Handling Facilities; Notice of Approval of Information Collection Requirements by OMB and Corrections to Appendices as published on December 31, 1987 (1910.272)."

(6) Federal Register, Vol. 53, No. 139, dated July 20, 1988; "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite (1910.1001 and 1910.1101); Extension of Partial Stay and Amendment of Final Rule."

(7) Federal Register, Vol. 53, No. 143, dated July 26, 1988; "Occupational Exposure to Ethylene Oxide (1910.1047); Approval of Information Collection Requirements; Amendment of Effective Date of Information Collection Requirements."

(8) Federal Register, Vol. 53, No. 170, dated September 1, 1988; "Occupational Exposure to Formaldehyde (1910.1048); Notice of Deferral of Effective Date for Certain Laboratories."

(9) Federal Register, Vol. 53, No. 174, dated September 8, 1988; "Servicing of Multipiece and Single Piece Rim Wheels (1910.177); Technical Amendments to Final Rule."

(10) Federal Register, Vol. 53, No. 178, dated September 14, 1988; "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite (1910.1001 and 1926.58); Amendment to Final Rule."

(11) Federal Register, Vol. 53, No. 185, dated September 23, 1988; "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Corrections to September 14, 1988 Federal Register notice."

(12) Federal Register, Vol. 53, No. 216, dated November 8, 1988; "Occupational Exposure to Formaldehyde (1910.1048); Approval of Information Collection Requirements; Start-up Date; Clarification; Technical Amendment; Request for Comments."

(13) Federal Register, Vol. 53, No. 225, dated November 22, 1988; "Occupational Exposure to Formaldehyde (1910.1048); Extension of Start-up Dates."

## L. Federal Register, Volume 54:

(1) Federal Register, Vol. 54, No. 12, dated January 19, 1989; "Air Contaminants (1910.1000) - Final Rule."

(2) Federal Register, Vol. 54, No. 42, dated March 6, 1989; "Hazardous Waste Operations and Emergency Response (1910.120) - Final Rule."

(3) Federal Register, Vol. 54, No. 127, dated July 5, 1989; "Air Contaminants (1910.1000); Corrections to Final Rule."

(4) Federal Register, Vol. 54, No. 131, dated July 11, 1989; "Occupational Exposure to Lead (1910.1025); Statement of Reasons-Final Rule."

(5) Federal Register, Vol. 54, No. 133, dated July 13, 1989; "Occupational Exposure to Formaldehyde (1910. 1048); "Corrections and Technical Amendments to Final Rule."

(6) Federal Register, Vol. 54, No. 133, dated July 13, 1989; "Occupational Exposure to Asbestos (1910.1001); Approval of Collection of Information Requirements."

(7) Federal Register, Vol. 54, No. 139, dated July 21, 1989; "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Extension of Partial Stay and Amendment of Final Rule (1910.1001 and 1910.1101)."

(8) Federal Register, Vol. 54, No. 144, dated July 28, 1989; "Powered Platforms for Building Maintenance (1910.66)-Final Rule."

(9) Federal Register, Vol. 54, No. 146, dated August 1, 1989; "Occupational Exposure to Formaldehyde (1910.1048); Correction."

(10) Federal Register, Vol. 54, No. 166, dated August 29, 1989; "Occupational Exposure to Formaldehyde (1910.1048); Extension of Administrative Stay."

(11) Federal Register, Vol. 54, No. 169, dated September 1, 1989; "Control of Hazardous Energy Sources - Lockout/Tagout (1910.147)."

(12) Federal Register, Vol. 54, No. 170, dated September 5, 1989; "Air Contaminants; Final Rule - Grant of Petitions for Reconsideration of Three Exposure Limits and Partial Stays of Effective Dates for Four Substances (1910.1000)."

(13) Federal Register, Vol. 54, No. 174, dated September 11, 1989; "Occupational Exposure to Formaldehyde (1910.1048); Correction."

(14) Federal Register, Vol. 54, No. 193, dated October 6, 1989: "Air Contaminants (1910.1000); Final Rule Partial Stay of Effective Date for Two Substances."

(15) Federal Register, Vol. 54, No. 199, dated October 17, 1989: "Control of Hazardous Energy Sources - Lockout/Tagout (1910.147); Final Rule Approval of Information Collection Requirements."

(16) Federal Register, Vol. 54, No. 213, dated November 6, 1989: "Control of Hazardous Energy Sources - Lockout/Tagout (1910.147); Final Rule Extension of Effective Date."

(17) Federal Register, Vol. 54, No. 219, dated November 15, 1989: "Air Contaminants; Final Rule Corrections."

(18) Federal Register, Vol. 54, No. 233, dated December 6, 1989: "Air Contaminants; Final Rule Partial Stay of Effective Date for Two Substances."

(19) Federal Register, Vol. 54, No. 243, dated December 20, 1989: "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite (1910.1001); Partial Response to Court Remand."

### M. Federal Register, Volume 55:

(1) Federal Register, Vol. 55, No. 20, dated January 30, 1990: "Occupational Exposure to Lead (1910.1025); Statement of Reasons."

(2) Federal Register, Vol. 55, No. 21, dated January 31, 1990: "Occupational Exposure to Hazardous Chemicals in Laboratories (1910.1450); Final Rule."

(3) Federal Register, Vol. 55, No. 24, dated February 5, 1990: "Air Contaminants (1910.1000); Partial Stay of Effective Date for Two Substances."

(4) Federal Register, Vol. 55, No. 24, dated February 5, 1990: "Occupational Exposure to Asbestos (1910.1001); Partial Response to Court Remand."

(5) Federal Register, Vol. 55, No. 30, dated February 13, 1990: "Occupational Exposure to Lead; Corrections to Final Rule Statement of Reasons and Amendment to Appendix B."

(6) Federal Register, Vol. 55, No. 44, dated March 6, 1990: "Occupational Exposures to Hazardous Chemicals in Laboratories (1910.1450); Corrections."

(7) Federal Register, Vol. 55, No. 67, dated April 6, 1990: "Air Contaminants; Partial Stay of Effective Date for Two Substances."

(8) Federal Register, Vol. 55, No. 70, dated April 11, 1990: "Safety and Health Standards: Welding, Cutting and Brazing; Redesignation and Other Nonsubstantive Revisions."

(9) Federal Register, Vol. 55, No. 72, dated April 13, 1990: "Hazardous Waste Operations and Emergency Response (1910.120); Corrections to Final Rule."

(10) Federal Register, Vol. 55, No. 90, dated May 9, 1990: "Air Contaminants (1910.1000), Final Rule; Grant of Petition for Reconsideration and Stays for Two Substances."

(11) Federal Register, Vol. 55, No. 111, dated June 8, 1990: "Air Contaminants (1910.1000), Correction to Final Rule."

(12) Federal Register, Vol. 55, No. 114, dated June 13, 1990: "Occupational Exposure to Formaldehyde (1910.1048); Extension of Administrative Stay."

(13) Federal Register, Vol. 55, No. 119, dated June 20, 1990: "Welding, Cutting and Brazing; Technical Amendments to 1910.110, 1910.272, and Appendix A to 1910.272."

(14) Federal Register, Vol. 55, No. 151, dated August 6, 1990: "Electrical Safety-Related Work Practices (Subpart S, 1910.331 to 1910.335); Final Rule and Amendments to References in Other OSHA Standards."

(15) Federal Register, Vol. 55, No. 155, dated August 10, 1990: "Occupational Exposure to Formaldehyde (1910.1048); Extension of Administrative Stay."

# MINNESOTA RULES 1999

285

## SAFETY AND HEALTH STANDARDS 5205.0010

(16) Federal Register, Vol. 55, No. 165, dated August 24, 1990: "Occupational Exposure to Asbestos (1910.1001); Approval of Collection of Information Requirements."

(17) Federal Register, Vol. 55, No. 183, dated September 20, 1990: "Control of Hazardous Energy Sources (Lockout/Tagout) - (1910.147); Corrections and Technical Amendments to Final Rule."

(18) Federal Register, Vol. 55, No. 212, dated November 1, 1990: "Electrical Safety-Related Work Practices (Subpart S, 1910.331 to 1910.335); Corrections to Final Rule."

(19) Federal Register, Vol. 55, No. 237, dated December 10, 1990: "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite (1910.1001); Extension of Partial Stay and Amendment of Final Rule."

(20) Federal Register, Vol. 55, No. 242, dated December 17, 1990: "Occupational Exposure to Formaldehyde (1910.1048); Extension of Administrative Stay."

(21) Federal Register, Vol. 55, No. 217, dated November 8, 1990: "Air Contaminants; Grant of Partial Stay for Nitroglycerin."

(22) Federal Register, Vol. 55, No. 247, dated December 24, 1990: "Air Contaminants; Final Rule Interpretation for Grain Handling Industry."

### N. Federal Register, Volume 56:

(1) Federal Register, Vol. 56, No. 48, dated March 12, 1991: "Occupational Exposure to Formaldehyde; Extension of Administrative Stay."

(2) Federal Register, Vol. 56, No. 75, dated April 18, 1991: "Hazardous Waste Operations and Emergency Response; Corrections to Final Rule."

(3) Federal Register, Vol. 56, No. 105, dated May 31, 1991: "Occupational Exposure to Lead; Corrections to Final Rule."

(4) Federal Register, Vol. 56, No. 113, dated June 12, 1991: "Occupational Exposure to Formaldehyde, Extension of Administrative Stay."

(5) Federal Register, Vol. 56, No. 153, dated August 8, 1991: "Occupational Exposure to Formaldehyde, Extension of Administrative Stay."

(6) Federal Register, Vol. 56, No. 171, dated September 4, 1991: "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Extension of Partial Stay and Amendment of Final Rule."

(7) Federal Register, Vol. 56, No. 219, dated November 13, 1991: "Occupational Exposure to Formaldehyde; Extension of Administrative Stay."

(8) Federal Register, Vol. 56, No. 235, dated December 6, 1991: "Occupational Exposure to Bloodborne Pathogens; Final Rule."

### O. Federal Register, Volume 57:

(1) Federal Register, Vol. 57, No. 15, dated January 23, 1992: "Occupational Exposure to Formaldehyde; Extension of Administrative Stay."

(2) Federal Register, Vol. 57, No. 36, dated February 24, 1992: "Process Safety Management of Highly Hazardous Chemicals; Explosives and Blasting Agents; Final Rule."

(3) Federal Register, Vol. 57, No. 43, dated March 4, 1992: "Process Safety Management of Highly Hazardous Chemicals; Explosives and Blasting Agents; Corrections to Final Rule."

(4) Federal Register, Vol. 57, No. 44, dated March 5, 1992: "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Extension of Partial Stay and Amendment of Final Rule."

(5) Federal Register, Vol. 57, No. 71, dated April 13, 1992: "Occupational Exposure to Bloodborne Pathogens; Approval of Information Collection Requirements."

(6) Federal Register, Vol. 57, No. 87, dated May 5, 1992: "Occupational Exposure to Formaldehyde; Extension of Administrative Stay."

(7) Federal Register, Vol. 57, No. 102, dated May 27, 1992: "Occupational Exposure to Formaldehyde (1910.1048); Response to Court Remand."

(8) Federal Register, Vol. 57, No. 105, dated June 1, 1992: "Process Safety Management of Highly Hazardous Chemicals; Explosives and Blasting Agents (1910.119); Administrative Stay and Request for Comments."

(9) Federal Register, Vol. 57, No. 110, dated June 8, 1992: "Occupational Exposure to Asbestos, Tremolite, Anthophyllite and Actinolite (1910.1001); Final Rule."

(10) Federal Register, Vol. 57, No. 112, dated June 10, 1992: "Occupational Exposure to Formaldehyde (1910.1048); Correction."

(11) Federal Register, Vol. 57, No. 118, dated June 18, 1992: "Occupational Exposure to Formaldehyde (1910.1048); Corrections."

(12) Federal Register, Vol. 57, No. 126, dated June 30, 1992: "Occupational Exposure to Asbestos, Tremolite, Anthophyllite and Actinolite (1910.1001); Correction."

(13) Federal Register, Vol. 57, No. 127, dated July 1, 1992: "Occupational Exposure to Bloodborne Pathogens (1910.1030); Correction."

(14) Federal Register, Vol. 57, No. 127, dated July 1, 1992: "Air Contaminants (1910.1000); Corrections."

(15) Federal Register, Vol. 57, No. 127, dated July 1, 1992: "Update of Addresses for Obtaining Technical Manuals (1910.1450 and 1910.1500); Corrections."

(16) Federal Register, Vol. 57, No. 154, dated August 10, 1992: "Occupational Exposure to 4,4' Methylenedianiline (MDA) (1910.1050); Final Rule."

(17) Federal Register, Vol. 57, No. 166, dated August 26, 1992: "Process Safety Management of Highly Hazardous Chemicals; Explosives and Blasting Agents; Final Rule; Petition for Administrative Stay; Effective Date of Stayed Provisions."

(18) Federal Register, Vol. 57, No. 178, dated September 14, 1992: "Occupational Exposure to Cadmium (1910.1027); Final Rule."

(19) Federal Register, Vol. 57, No. 211, dated October 30, 1992: "Occupational Exposure to Cadmium (1910.1027); Approval of Information Collection Requirements."

(20) Federal Register, Vol. 57, No. 213, dated November 3, 1992: "Occupational Exposure to 4,4' Methylenedianiline (MDA); Approval of Information Collection Requirements."

### P. Federal Register, Volume 58:

(1) Federal Register, Vol. 58, No. 9, dated January 14, 1993: "Permit-Required Confined Spaces; Final Rule."

(2) Federal Register, Vol. 58, No. 59, dated March 30, 1993, "Control of Hazardous Energy Sources (Lockout/Tagout); Supplemental Statement of Reasons."

(3) Federal Register, Vol. 58, No. 77, dated April 23, 1993, "Occupational Exposure to Cadmium; Corrections and Amendments to Final Rule."

(4) Federal Register, Vol. 58, No. 123, dated June 29, 1993: "Permit-Required Confined Spaces; Final Rule; Corrections."

(5) Federal Register, Vol. 58, No. 124, dated June 30, 1993, "Safety Standards for General Industry and Construction; Technical Amendments."

### Q. Federal Register, Volume 59:

(1) Federal Register, Vol. 59, No. 20, dated January 31, 1994, "Electric Power Generation, Transmission and Distribution; Electrical Protective Equipment."

(2) Federal Register, Vol. 59, No. 63, dated April 1, 1994, "Grain Handling Facilities; Final Decision Statement."



(3) Federal Register, Vol. 59, No. 66, dated April 6, 1994, "Personal Protective Equipment for General Industry; Final Rule."

(4) Federal Register, Vol. 59, No. 96, dated May 19, 1994: "Permit-Required Confined Spaces; Final Rule; Technical Amendment."

(5) Federal Register, Vol. 59, No. 125, dated June 30, 1994, "Electric Power Generation, Transmission, and Distribution; Electrical Protective Equipment; Final Rule--Stay of Enforcement of Certain Provisions and Correction."

(6) Federal Register, Vol. 59, No. 126, dated July 1, 1994, "Personal Protective Equipment for General Industry; Final Rule; Corrections."

(7) Federal Register, Vol. 59, No. 128, dated July 6, 1994, "Personal Protective Equipment for General Industry; Final Rule; Administrative Stay."

(8) Federal Register, Vol. 59, No. 137, dated July 19, 1994, "Retention of DOT Markings, Placards, and Labels (1910.1201); Final Rule."

(9) Federal Register, Vol. 59, No. 152, dated August 9, 1994, "Safety Standards for Fall Protection in the Construction Industry; Final Rule and Amended Reference in 1910.269(g)(2)(i)."

(10) Federal Register, Vol. 59, No. 153, dated August 10, 1994, "Occupational Exposure to Asbestos (1910.1001); Final Rule."

(11) Federal Register, Vol. 59, No. 161, dated August 22, 1994, "Hazardous Waste Operations and Emergency Response (1910.120 and 1926.65); Amendments to Final Rule."

(12) Federal Register, Vol. 59, No. 196, dated October 12, 1994, "Logging Operations, Final Rule (1910.266) and Amendment to 1910.269(r)(5)."

(13) Federal Register, Vol. 59, No. 213, dated November 4, 1994: "Permit-Required Confined Spaces; Final Rule; Technical Amendment to Preamble."

## R. Federal Register, Volume 60:

(1) Federal Register, Vol. 60, No. 26, dated February 8, 1995: "Logging Operations, Final Rule; Partial Stay of Enforcement."

(2) Federal Register, Vol. 60, No. 34, dated February 21, 1995: "Occupational Exposure to Asbestos (1910.1001), Final Rule; Extension of Start-up Dates for Compliance."

(3) Federal Register, Vol. 60, No. 40, dated March 1, 1995: "Occupational Exposure to Asbestos (1910.1001), Correction."

(4) Federal Register, Vol. 60, No. 124, dated June 28, 1995: "Occupational Exposure to Asbestos (1910.1001), Final Rule; Extension of Start-up Dates for Compliance."

(5) Federal Register, Vol. 60, No. 125, dated June 29, 1995: "Occupational Exposure to Asbestos (1910.1001); Corrections to Final Rule."

(6) Federal Register, Vol. 60, No. 134, dated July 13, 1995: "Occupational Exposure to Asbestos (1910.1001); Corrections to Final Rule."

(7) Federal Register, Vol. 60, No. 153, dated August 9, 1995: "Logging Operations (1910.266), Final Rule; Extension of Partial Stay."

(8) Federal Register, Vol. 60, No. 174, dated September 8, 1995: "Logging Operations (1910.266), Final Rule; Corrections and Technical Amendments."

(9) Federal Register, Vol. 60, No. 196, page 52856, dated October 11, 1995: "Occupational Exposure to Lead; Amendments to Final Rule, (1910.1025)."

## S. Federal Register, Volume 61:

(1) Federal Register, Vol. 61, No. 46, page 9228, dated March 7, 1996: "Miscellaneous Minor and Technical Amendments; Final Rule; Corrections and Technical Amendments."

(2) Federal Register, Vol. 61, No. 47, page 9578, dated March 8, 1996: "Grain Handling Facilities; Final Rule; Technical Amendment, (1910.272)."

(3) Federal Register, Vol. 61, No. 86, page 19547, dated May 2, 1996: "Personal Protective Equipment for General Industry; Final Rule; Technical Amendment."

(4) Federal Register, Vol. 61, No. 91, page 21228, dated May 9, 1996: "Personal Protective Equipment for General Industry; Correction."

(5) Federal Register, Vol. 61, No. 120, page 31427, dated June 20, 1996: "Consolidation of Repetitive Provisions; Technical Amendments; Final Rule; Technical Amendments and Recodifications."

(6) Federal Register, Vol. 61, No. 165, page 43454, dated August 23, 1996: "Occupational Exposure to Asbestos, Tremolite, Anthophyllite and Actinolite; Final Rule: corrections."

(7) Federal Register, Vol. 61, No. 214, page 56746, dated November 4, 1996: "Occupational Exposure to 1,3-Butadiene; Final Rule."

### T. Federal Register, Volume 62:

(1) Federal Register, Vol. 62, No. 7, page 1494, dated January 10, 1997: "Occupational Exposure to Methylene Chloride; Final Rule."

(2) Federal Register, Vol. 62, No. 105, page 29668, dated June 2, 1997: "Office of Management and Budget Control Numbers under Paperwork Reduction Act; Final Rule."

(3) Federal Register, Vol. 62, No. 143, page 40142, dated July 25, 1997: "Longshoring and Marine Terminals; Final Rule."

(4) Federal Register, Vol. 62, No. 153, page 42666, dated August 8 1997: "Methylene Chloride; Approval of Information Collection Requirements; Extension of Start-up Dates; Final Rule; Amendment; Announcement of the OMB Approval of Information Collection Requirements; Extension of Start-up Dates for Compliance."

(5) Federal Register, Vol. 62, No. 157, page 43581, dated August 14, 1997: "Methylene Chloride; Approval of Information Collection Requirements; Extension of Start-up Dates; Correction."

(6) Federal Register, Vol. 62, No. 178, page 48175, dated September 15, 1997: "Methylene Chloride; Amendment; Extension of Start-Up Dates for Compliance."

(7) Federal Register, Vol. 62, No. 202, page 54382, dated October 20, 1997: "Methylene Chloride; Amendment; Extension of Start-Up Dates of Compliance."

(8) Federal Register, Vol. 62, No. 230, page 63563, dated December 1, 1997: "Permit-Required Confined Spaces; Notice; Announcement of OMB Approval of Information Collection Requirements."

(9) Federal Register, Vol. 62, No. 243, page 66275, dated December 18, 1997: "Methylene Chloride; Partial Stay; Final Rule; Partial Stay of Start-Up Dates for Compliance."

### U. Federal Register, Volume 63:

(1) Federal Register, Vol. 63, No. 5, page 1152, dated January 8, 1998: "Respiratory Protection; Final rule; Request for Comment on Paperwork Requirements."

(2) Federal Register, Vol. 63, No. 3, page 13338, dated March 19, 1998: "Office of Management and Budget Control Numbers Under Paperwork Reduction Act for Miscellaneous General Industry, Shipyard Employment and Construction Industry Rules and Regulations; Final Rule; Amendments and Announcements of OMB Approval of Information Collection Requirements."

(3) Federal Register, Vol. 63, No. 67, page 17093, dated April 8, 1998: "Office of Management and Budget Control Numbers Under the Paperwork Reduction Act; Final Rule."

(4) Federal Register, Vol. 63, No. 78, page 20098, dated April 23, 1998: "Respiratory Protection; Correction; Final Rule; Correction."

(5) Federal Register, Vol. 63, No. 117, page 33449, dated June 18, 1998: "Standards Improvement (Miscellaneous Changes) for General Industry and Construction Standards; Paperwork Collection for Coke Oven Emissions and Inorganic Arsenic; Final Rule."

(6) Federal Register, Vol. 63, No. 183, page 50711, dated September 22, 1998: "Methylene Chloride; Final Rule."

(7) Federal Register, Vol. 63, No. 191, page 53103, dated October 2, 1998: "Respiratory Protection; Announcement of OMB Approval of Information Collection Requirements; Notice."

(8) Federal Register, Vol. 63, No. 230, page 66018, dated December 1, 1998: "Permit-Required Confined Spaces; Final Rule."

(9) Federal Register, Vol. 63, No. 230, page 66238, dated December 1, 1998: "Powered Industrial Truck Operator Training; Final Rule."

V. Federal Register, Vol. 64:

(1) Federal Register, Vol. 64, No. 1, page 204, dated January 4, 1999: "Permit-Required Confined Spaces; Correction."

(2) Federal Register, Vol. 64, No. 55, page 13897, dated March 23, 1999: "Dipping and Coating Operations; Final Rule."

(3) Federal Register, Vol. 64, No. 80, page 22552, dated April 27, 1999: "Powered Industrial Truck Operator Training; Correction to Final Rule."

Subp. 3. **Part 1915.** 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; all changes made prior to December 31, 1986, which consolidated Part 1915 and Part 1916; technical amendments and redesignations published in Volume 58, No. 125, of the Federal Register on July 1, 1993; and additional changes as follows:

A. 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."

B. Federal Register, Vol. 57, No. 178, dated September 14, 1992: "Occupational Exposure to Cadmium (1915.1027); Final Rule."

C. Federal Register, Vol. 57, No. 211, dated October 30, 1992: "Occupational Exposure to Cadmium (1915.1027); Approval of Information Collection Requirements."

D. Federal Register, Vol. 58, No. 77, dated April 23, 1993, "Occupational Exposure to Cadmium; Corrections and Amendments to Final Rule."

E. Federal Register, Vol. 59, No. 1, dated January 3, 1994, "Occupational Safety and Health Standards for Cadmium in Shipyard Employment and Construction; Final Rule; Miscellaneous Corrections and Technical Amendments."

F. Federal Register, Vol. 59, No. 137, dated July 19, 1994, "Retention of DOT Markings, Placards, and Labels (1915.100); Final Rule."

G. Federal Register, Vol. 59, No. 141, dated July 25, 1994, "Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment; Final Rule."

H. Federal Register, Vol. 59, No. 153, dated August 10, 1994, "Occupational Exposure to Asbestos (1915.1001); Final Rule."

I. Federal Register, Vol. 60, No. 34, dated February 21, 1995: "Occupational Exposure to Asbestos (1915.1001), Final Rule; Extension of Start-up Dates for Compliance."

J. Federal Register, Vol. 60, No. 40, dated March 1, 1995: "Occupational Exposure to Asbestos (1915.1001), Correction."

K. Federal Register, Vol. 60, No. 51, dated March 16, 1995: "Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment (1915.12, 1915.14, and 1915.15); Final Rule, Correction."

L. Federal Register, Vol. 60, No. 124, dated June 28, 1995: "Occupational Exposure to Asbestos (1915.1001), Final Rule; Extension of Start-up Dates for Compliance."

M. Federal Register, Vol. 60, No. 125, dated June 29, 1995: "Occupational Exposure to Asbestos (1915.1001); Corrections to Final Rule."

N. Federal Register, Vol. 60, No. 134, dated July 13, 1995: "Occupational Exposure to Asbestos (1915.1001); Corrections to Final Rule."

O. Federal Register, Vol. 60, No. 189, dated September 29, 1995: "Occupational Exposure to Asbestos (1915.1001), Final Rule; Amendments."

P. Federal Register, Vol. 61, No. 46, page 9228, dated March 7, 1996: "Miscellaneous Minor and Technical Amendments; Final Rule; Corrections and Technical Amendments."

Q. Federal Register, Vol. 61, No. 102, page 26322, dated May 24, 1996: "Personal Protective Equipment for Shipyard Employment (PPE); Final Rule."

R. Federal Register, Vol. 61, No. 115, page 29957, dated June 13, 1996: "Personal Protective Equipment for Shipyard Employment (PPE); Final Rule; Corrections."

S. Federal Register, Vol. 61, No. 120, page 31427, dated June 20, 1996: "Consolidation of Repetitive Provisions; Technical Amendments; Final Rule; Technical Amendments and Recodifications."

T. Federal Register, Vol. 61, No. 165, page 43454, dated August 23, 1996: "Occupational Exposure to Asbestos, Tremolite, Anthophyllite and Actinolite; Final Rule: corrections."

U. Federal Register, Vol. 61, No. 214, page 56746, dated November 4, 1996: "Occupational Exposure to 1,3-Butadiene; Final Rule."

V. Federal Register, Vol. 62, No. 7, page 1494, dated January 10, 1997: "Occupational Exposure to Methylene Chloride; Final Rule."

W. Federal Register, Vol. 62, No. 119, page 33547, dated June 20, 1997: "Personal Protective Equipment for Shipyard Employment; Effective Date and Office of Management and Budget Control Numbers Under Paperwork Reduction Act; Final Rule; amendment; announcement of effective date and OMB approval of information collection requirements."

X. Federal Register, Vol. 63, No. 53, page 13338, dated March 19, 1998: "Office of Management and Budget Control Numbers Under Paperwork Reduction Act for Miscellaneous General Industry, Shipyard Employment and Construction Industry Rules and Regulations; Final Rule; Amendments and Announcements of OMB Approval of Information Collection Requirements."

Y. Federal Register, Vol. 63, No. 124, page 35137, dated June 29, 1998: "Occupational Exposure to Asbestos; Final Rule."

Z. Federal Register, Vol. 63, No. 230, page 66238, dated December 1, 1998: "Powered Industrial Truck Operator Training; Final Rule."

AA. Federal Register, Vol. 64, No. 80, page 22552, dated April 27, 1999: "Powered Industrial Truck Operator Training; Correction to Final Rule."

Subp. 4. **Part 1917.** 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 as follows:

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

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

C. Federal Register, Vol. 59, No. 137, dated July 19, 1994, "Retention of DOT Markings, Placards, and Labels (1917.29); Final Rule."

D. Federal Register, Vol. 62, No. 143, page 40142, dated July 25, 1997: "Longshoring and Marine Terminals; Final Rule."

E. Federal Register, Vol. 63, No. 230, page 66238, dated December 1, 1998: "Powered Industrial Truck Operator Training; Final Rule."

F. Federal Register, Vol. 64, No. 80, page 22552, dated April 27, 1999: "Powered Industrial Truck Operator Training; Correction to Final Rule."

Subp. 5. **Part 1918.** 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 as follows:

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

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

C. Federal Register, Vol. 59, No. 137, dated July 19, 1994, "Retention of DOT Markings, Placards, and Labels (1918.100); Final Rule."

D. Federal Register, Vol. 62, No. 143, page 40142, dated July 25, 1997: "Longshoring and Marine Terminals; Final Rule."

E. Federal Register, Vol. 63, No. 230, page 66238, dated December 1, 1998: "Powered Industrial Truck Operator Training; Final Rule."

F. Federal Register, Vol. 64, No. 80, page 22552, dated April 27, 1999: "Powered Industrial Truck Operator Training; Correction to Final Rule."

Subp. 6. **Part 1926.** 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, the incorporation and redesignation of the regulatory text of the General Industry Occupational Safety and Health Standards (29 CFR Part 1910) that have been identified as applicable to construction work as published in the Federal Register, Volume 58, No. 124, dated June 30, 1993, and corrected in Volume 58, No. 143, dated July 28, 1993; and additional changes as follows:

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

B. Federal Register, Volume 51:

(1) 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."

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

C. Federal Register, Volume 52:

(1) 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."

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

D. Federal Register, Volume 53:

(1) Federal Register, Vol. 53, No. 116, dated June 16, 1988; "Concrete and Masonry Construction Safety Standards (1926.700-1926.706)."

(2) Federal Register, Vol. 53, No. 139, dated July 20, 1988; "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite (1926.58); Extension of Partial Stay and Amendment of Final Rule."

(3) Federal Register, Vol. 53, No. 178, dated September 14, 1988; "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite (1910.1001 and 1926.58); Amendment to Final Rule."

### E. Federal Register, Volume 54:

(1) Federal Register, Vol. 54, No. 105, dated June 2, 1989: "Underground Construction (1926.800) Final Rule."

(2) Federal Register, Vol. 54, No. 139, dated July 21, 1989: "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite (1926.58); Extension of Partial Stay and Amendment of Final Rule."

(3) Federal Register, Vol. 54, No. 192, dated October 5, 1989: "Concrete and Masonry Construction Safety Standards (Subpart O of 29 CFR Part 1926); Final Rule Technical Amendment."

(4) Federal Register, Vol. 54, No. 209, dated October 31, 1989: "Excavations (Subpart P of 29 CFR Part 1926)."

(5) Federal Register, Vol. 54, No. 243, dated December 20, 1989: "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite (1926.58); Partial Response to Court Remand."

### F. Federal Register, Volume 55:

(1) Federal Register, Vol. 55, No. 24, dated February 5, 1990: "Occupational Exposure to Asbestos (1926.58); Partial Response to Court Remand."

(2) Federal Register, Vol. 55, No. 165, dated August 24, 1990: "Occupational Exposure to Asbestos (1926.58); Approval of Collection of Information Requirements."

(3) Federal Register, Vol. 55, No. 202, dated October 18, 1990: "Concrete and Masonry Construction Safety Standards; Lift Slab Construction Operations (Subpart Q) Final Rule."

(4) Federal Register, Vol. 55, No. 220, dated November 14, 1990: "Safety Standards for Stairways and Ladders Used in the Construction Industry; Final Rule."

(5) Federal Register, Vol. 55, No. 237, dated December 10, 1990: "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite (1926.58); Extension of Partial Stay and Amendment of Final Rule."

### G. Federal Register, Volume 56:

(1) Federal Register, Vol. 56, No. 15, dated January 23, 1991: "Safety Standards for Stairways and Ladders Used in the Construction Industry; Corrections to Final Rule."

(2) Federal Register, Vol. 56, No. 26, dated February 7, 1991: "Safety Standards for Stairways and Ladders Used in the Construction Industry; Corrections to Final Rule."

(3) Federal Register, Vol. 56, No. 164, dated August 23, 1991: "Safety Standards for Stairways and Ladders Used in the Construction Industry."

(4) Federal Register, Vol. 56, No. 171, dated September 4, 1991: "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Extension of Partial Stay and Amendment of Final Rule."

### H. Federal Register, Volume 57:

(1) Federal Register, Vol. 57, No. 44, dated March 5, 1992: "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Extension of Partial Stay and Amendment of Final Rule."

(2) Federal Register, Vol. 57, No. 110, dated June 8, 1992: "Occupational Exposure to Asbestos, Tremolite, Anthophyllite and Actinolite (1926.58); Final Rule."

(3) Federal Register, Vol. 57, No. 126, dated June 30, 1992: "Occupational Exposure to Asbestos, Tremolite, Anthophyllite and Actinolite (1926.58); Correction."

(4) Federal Register, Vol. 57, No. 154, dated August 10, 1992: "Occupational Exposure to 4,4' Methylenedianiline (MDA) (1926.60)."

(5) Federal Register, Vol. 57, No. 178, dated September 14, 1992: "Occupational Exposure to Cadmium (1926.63); Final Rule."

(6) Federal Register, Vol. 57, No. 211, dated October 30, 1992: "Occupational Exposure to Cadmium (1926.63); Approval of Information Collection Requirements."

**I. Federal Register, Volume 58:**

(1) Federal Register, Vol. 58, No. 77, dated April 23, 1993, "Occupational Exposure to Cadmium; Corrections and Amendments to Final Rule."

(2) Federal Register, Vol. 58, No. 84, dated May 4, 1993, "Lead Exposure in Construction (1926.62); Interim Final Rule."

(3) Federal Register, Vol. 58, No. 120, dated June 24, 1993, "Occupational Exposure to Lead in Construction; Interim Final Rule--Approval of Information Collection Requirements."

**J. Federal Register, Volume 59:**

(1) Federal Register, Vol. 59, No. 1, dated January 3, 1994, "Occupational Safety and Health Standards for Cadmium in Shipyard Employment and Construction; Final Rule; Miscellaneous Corrections and Technical Amendments."

(2) Federal Register, Vol. 59, No. 137, dated July 19, 1994, "Retention of DOT Markings, Placards, and Labels (1926.61); Final Rule."

(3) Federal Register, Vol. 59, No. 152, dated August 9, 1994, "Safety Standards for Fall Protection in the Construction Industry."

(4) Federal Register, Vol. 59, No. 153, dated August 10, 1994, "Occupational Exposure to Asbestos (1926.1101); Final Rule."

(5) Federal Register, Vol. 59, No. 161, dated August 22, 1994, "Hazardous Waste Operations and Emergency Response (1910.120 and 1926.65); Amendments to Final Rule."

**K. Federal Register, Volume 60:**

(1) Federal Register, Vol. 60, No. 17, dated January 26, 1995: "Safety Standards for Fall Protection in the Construction Industry, Final Rule; Delay of Effective Date."

(2) Federal Register, Vol. 60, No. 34, dated February 21, 1995: "Occupational Exposure to Asbestos (1926.1101), Final Rule; Extension of Start-up Dates for Compliance."

(3) Federal Register, Vol. 60, No. 40, dated March 1, 1995: "Occupational Exposure to Asbestos (1926.1101), Correction."

(4) Federal Register, Vol. 60, No. 124, dated June 28, 1995: "Occupational Exposure to Asbestos (1926.1101), Final Rule; Extension of Start-up Dates for Compliance."

(5) Federal Register, Vol. 60, No. 125, dated June 29, 1995: "Occupational Exposure to Asbestos (1926.1101); Corrections to Final Rule."

(6) Federal Register, Vol. 60, No. 134, dated July 13, 1995: "Occupational Exposure to Asbestos (1926.1101); Corrections to Final Rule."

(7) Federal Register, Vol. 60, No. 148, dated August 1, 1995: "Safety Standards for Fall Protection in the Construction Industry (Part 1926, Subpart M), Final Rule; Correcting Amendment."

(8) Federal Register, Vol. 60, No. 189, dated September 29, 1995: "Occupational Exposure to Asbestos (1926.1101), Final Rule; Amendments."

**L. Federal Register, Volume 61:**

(1) Federal Register, Vol. 61, No. 46, page 9228, dated March 7, 1996: "Miscellaneous Minor and Technical Amendments; Final Rule; Corrections and Technical Amendments."

(2) Federal Register, Vol. 61, No. 120, page 31427, dated June 20, 1996: "Consolidation of Repetitive Provisions; Technical Amendments; Final Rule; Technical Amendments and Recodifications."

(3) Federal Register, Vol. 61, No. 156, page 41738, dated August 12, 1996: "Incorporation of General Industry Health and Safety Standards Applicable to Construction Work; Final Rule; correcting amendment."

(4) Federal Register, Vol. 61, No. 165, page 43454, dated August 23, 1996: "Occupational Exposure to Asbestos, Tremolite, Anthophyllite and Actinolite; Final Rule; corrections."

(5) Federal Register, Vol. 61, No. 170, page 46026, dated August 30, 1996: "Safety Standards for Scaffolds Used in the Construction Industry; Final Rule."

(6) Federal Register, Vol. 61, No. 214, page 56746, dated November 4, 1996: "Occupational Exposure to 1,3-Butadiene; Final Rule."

(7) Federal Register, Vol. 61, No. 228, page 59831, dated November 25, 1996: "Safety Standards for Scaffolds Used in the Construction Industry; Final Rule; Corrections, Partial Stay."

M. Federal Register, Vol. 62, No. 7, page 1494, dated January 10, 1997: "Occupational Exposure to Methylene Chloride; Final Rule."

N. Federal Register, Volume 63:

(1) Federal Register, Vol. 63, No. 5, page 1152, dated January 8, 1998: "Respiratory Protection; Final Rule; Request for Comment on Paperwork Requirements."

(2) Federal Register, Vol. 63, No. 17, page 3813, dated January 27, 1998: "Safety Standards for Scaffolds Used in the Construction Industry (Aerial Lifts); Effective Date and Office of Management and Budget Control Numbers Under Paperwork Reduction Act; Final Rule; Amendment; Announcement of Effective Date and OMB Approval of Information Collection Requirements."

(3) Federal Register, Vol. 63, No. 53, page 13338, dated March 19, 1998: "Office of Management and Budget Control Numbers Under Paperwork Reduction Act for Miscellaneous General Industry, Shipyard Employment and Construction Industry Rules and Regulations; Final Rule; Amendments and Announcements of OMB Approval of Information Collection Requirements."

(4) Federal Register, Vol. 63, No. 67, page 17093, dated April 8, 1998: "Office of Management and Budget Control Numbers Under the Paperwork Reduction Act; Final Rule."

(5) Federal Register, Vol. 63, No. 78, page 20098, dated April 23, 1998: "Respiratory Protection; Correction; Final Rule; Correction."

(6) Federal Register, Vol. 63, No. 117, page 33449, dated June 18, 1998: "Standards Improvement (Miscellaneous Changes) for General Industry and Construction Standards; Paperwork Collection for Coke Oven Emissions and Inorganic Arsenic; Final Rule."

(7) Federal Register, Vol. 63, No. 124, page 35137, dated June 29, 1998: "Occupational Exposure to Asbestos; Final Rule."

(8) Federal Register, Vol. 63, No. 191, page 53103, dated October 2, 1998: "Respiratory Protection; Announcement of OMB Approval of Information Collection Requirements; Notice."

(9) Federal Register, Vol. 63, No. 230, page 66238, dated December 1, 1998: "Powdered Industrial Truck Operator Training; Final Rule."

O. Federal Register, Vol. 64:

(1) Federal Register, Vol. 64, No. 73, page 18809, dated April 16, 1999: "Office of Management and Budget (OMB) Control Numbers Under the Paperwork Reduction Act for Miscellaneous Construction Industry Rules; Final Rule, OMB Approval of Information Collection Requirements."

(2) Federal Register, Vol. 64, No. 80, page 22552, dated April 27, 1999: "Powered Industrial Truck Operator Training; Correction to Final Rule."



Subp. 7. **Part 1928.** 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 as follows:

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

B. Federal Register, Volume 42:

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

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

C. Federal Register, Volume 43:

(1) 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)."

(2) 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."

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

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

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

E. Federal Register, Volume 53, No. 185, dated September 23, 1988; "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Corrections to September 14, 1988 Federal Register notice."

F. Federal Register, Volume 58, No. 77, dated April 23, 1993, "Occupational Exposure to Cadmium (1928.1027)."

G. Federal Register, Vol. 59, No. 137, dated July 19, 1994, "Retention of DOT Markings, Placards, and Labels (1928.21); Final Rule."

H. Federal Register, Vol. 59, No. 196, dated October 12, 1994, "Logging Operations, Final Rule (1928.21(a)(3))."

I. Federal Register, Vol. 61, No. 46, page 9228, dated March 7, 1996: "Miscellaneous Minor and Technical Amendments; Final Rule; Corrections and Technical Amendments."

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

**History:** 7 SR 1706; 8 SR 172; 8 SR 1743; 9 SR 112; 9 SR 663; 9 SR 2585; 10 SR 1507; 10 SR 2418; 11 SR 867; 11 SR 1792; 12 SR 411; 12 SR 634; 12 SR 1618; 12 SR 2622; 13 SR 577; 13 SR 1918; 13 SR 2685; 14 SR 216; 14 SR 1177; 14 SR 2130; 15 SR 124; 15 SR 1122; 15 SR 1876; 16 SR 441; 16 SR 2054; 16 SR 2617; 17 SR 228; 17 SR 1273; 17 SR 2106; 18 SR 1065; 19 SR 187; 19 SR 887; 19 SR 1459; 19 SR 1900; 20 SR 197; 20 SR 1040; 20 SR 2122; 21 SR 202; 21 SR 805; 21 SR 1338; 21 SR 1897; 22 SR 1162; 22 SR 2014; 23 SR 813; 23 SR 1541; 23 SR 2132; 24 SR 274

## 5205.0015 APPLICATION OF RULES.

Chapter 5205 applies only to general industry locations. Chapter 5207 applies only to construction locations. Chapters 5206, 5208, and 5210 apply to both general industry and construction locations.

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

**History:** 12 SR 634; 23 SR 2060

## PERSONAL PROTECTIVE EQUIPMENT

## 5205.0020 HEAD PROTECTION.

Employees working in areas where there is danger of scalp injury if the employee's hair should become entangled in moving machinery parts shall be protected by having their hair contained or secured in a shop cap, snood, or similar device.

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

## 5205.0030 HIGH VISIBILITY PERSONAL PROTECTIVE EQUIPMENT.

Subpart 1. **General requirement.** Employees, other than police and fire protection personnel covered by subpart 3, exposed to vehicular traffic when the work area is on the driving lanes or on the shoulders or berms, or on the median adjacent to streets, highways, or roadways shall be provided with and required to wear warning vests or other high visibility garments. For work during the hours of darkness this protective equipment must be made of or marked with reflectorized material.

Subp. 2. **Exception.** Where employees are continually protected from vehicular traffic by permanent or semipermanent barricades, high visibility vests, or other high visibility equipment are not required.

Subp. 3. **Law enforcement, fire protection personnel.** Law enforcement and fire protection personnel shall be provided with, and be required to wear, high visibility, reflectorized outer garments at any time such personnel are engaged in vehicular traffic control.

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

## 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.

Subpart 1. **Requirement.** Employers shall replace fixed and portable ladders with ships ladders whenever possible.

The angle of rise of ships ladders shall be between 50 and 60 degrees measured from the horizontal.

Subp. 2. **Soffits.** Where ladders are located one above the other, soffits shall be enclosed except where solid treads and risers are provided.

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.

Subp. 4. **Handrails.** Handrails shall be provided on both sides of ladders and shall be placed to run parallel with stringers and be positioned 12 to 14 inches measured vertically, from the stringers. Handrail diameters shall be 1-1/4 to 1-5/8 inches o.d. When ships ladders serve door entrances, handrails shall continue to the door.

Subp. 5. **Stringers.** Ladder stringers shall be at least six inches in depth and permanently attached at terminations.

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

**History:** *12 SR 634*

**5205.0060 SHIPS LADDERS, SPECIAL REQUIREMENTS.**

Ships ladders shall be provided in all buildings where mechanical equipment is located on the roof in order to make all equipment accessible to maintenance and inspection personnel. Ships ladders shall be placed at an angle between 50 and 60 degrees measured from the horizontal. The opening in ceilings and building roofs shall have a minimum area of nine square feet and a minimum width of two feet. No ships ladders shall be located in or pass through elevator shafts, elevator penthouses, or elevator machine rooms.

Inside a penthouse handrails shall continue through ceiling and roof openings to a distance of 36 inches. A guardrail and intermediate rail shall be provided on all open sides with a substantial chain guard on the entrance side.

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

**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 thrustouts.** 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 1926.450(d) 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; 22 SR 1162

**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 air contaminant limits.

**Statutory Authority:** *MS s 182.655; 182.657*

**History:** *12 SR 634; 21 SR 1897*

## 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 systems, 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 INDOOR WORKROOM VENTILATION AND TEMPERATURE.

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

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

Air circulated in any indoor 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. [Repealed, 21 SR 1897]

Subp. 2a. **Heat stress.** The requirements of this subpart cover employee exposure to environmental heat conditions indoors.

A. The following definitions apply when assessing and controlling health hazards associated with extremes in temperature and humidity indoors.

(1) "Wet bulb globe temperature index" or "WBGT" means a measure of the combined effect of air temperature, air speed, humidity, and radiation.  $WBGT = 0.7 T_{nwb} + 0.3 T_g$ .

(2) "Natural wet-bulb temperature" or " $T_{nwb}$ " means temperature measured by a thermometer which has its sensor covered by a wetted cotton wick, exposed to natural air movement.

(3) "Globe temperature" or " $T_g$ " means temperature measured by a thermometer with its sensor inside a matte black globe, exposed to radiant heat, Vernon Globe or equivalent.

(4) "Heavy work" means 350 to 500 kcal/hr (kilocalories per hour), for example: heavy lifting and pushing, shovel work.

(5) "Moderate work" means 200 to 350 kcal/hr, for example: walking about with moderate lifting and pushing.

(6) "Light work" means up to 200 kcal/hr, for example: sitting or standing performing light hand or arm work.

B. Employees shall not be exposed to indoor environmental heat conditions in excess of the values listed in Table 1. The values in Table 1 apply to fully clothed acclimatized workers.

TABLE 1. Two-hour time-weighted average permissible heat exposure limits.

Work Activity	WBGT, °F
Heavy work	77
Moderate work	80
Light work	86

C. Employees with exposure to heat shall be provided training according to part 5206.0700, subparts 1 and 3.

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

A. The minimum air temperature of 60 degrees Fahrenheit shall be maintained in all indoor workrooms 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 indoor 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, part 1910, subpart Z, shall not be recirculated without written permission from the Department of Labor and Industry.

**Statutory Authority:** *MS s 182.655; 182.657*

**History:** *12 SR 634; 21 SR 1897*

#### **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-A. 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; 21 SR 1897*

### **ILLUMINATION**

#### **5205.0120 MINIMUM LEVELS OF ILLUMINATION.**

Subpart 1. **For traversed spaces.** Illumination by daylight or artificial light shall be supplied for traversed spaces, such as hallways, roadways, etc., during working hours, and for work when attended by operators. Minimum levels of illumination, as listed in the following table, are required in all places of employment in Minnesota. Values greater than these minima shall be used when ordered by the Occupational Safety and Health Division.

## Illumination on Traversed Spaces

	Recommended Minimum Footcandles
Roadways, yard thoroughfares	2-1
Storage spaces, aisles and passageways in workrooms, excepting exits and passageways leading thereto	3-2
Spaces such as stairways, hallways, exits and passages leading thereto	5-3
Spaces such as locker rooms, wash rooms, toilet rooms, and passageways where there are exposed moving machines, hot pipes, or live electric parts	6-4

Subp. 2. **At the working place.**

## Illumination at the Work

	Recommended Minimum Footcandles
Where discrimination of detail is not essential: Work such as handling material of a coarse nature, grinding clay products, rough sorting, coal and ash handling, foundry charging	5-3
Where slight discrimination of detail is essential: Work such as rough machining, rough assembling, rough bench work, rough forging, grain milling	10-5
Where moderate discrimination of detail is essential: Work such as machining, assembly work, bench work, fine core making in foundries	30
Where close discrimination of detail is essential: Work such as fine lathe work, pattern making, tool making, weaving or sewing light-colored silk or woolen textiles, office work, accounting, typewriting	50
Where discrimination of minute detail is essential: Work such as drafting, weaving or sewing dark colored material, very fine inspection or inspection of very dark goods	100-25

The preceding table gives the range of minimum illumination values that are considered desirable for different classes of work. These values are based upon practice established through years of experience. Elderly persons or persons with defective eyesight require more light than do those having perfect vision. A range of footcandle values is given for each group of operations. In modern practice it will usually be found desirable to select values in or even beyond the upper portion of the range.

It is recognized that any specific process when carried on in different factories is performed with different degrees of fineness and with other variations, so that one factory may need more illumination than another for the same class of work. In the table, ranges of footcandle values are given to correspond to the variations actually existing in practice. Attention is called to the fact that the values in the table are operating values, that is, they apply to measurements of the lighting system in ordinary use, not simply when the lamps and reflectors are new and clean.

**Statutory Authority:** *MS s 182.657*

#### **5205.0130 DIFFUSION AND DISTRIBUTION OF LIGHT.**

Subpart 1. **Requirement.** Lighting, whether natural or artificial, shall be such as to provide good distribution of light and to avoid glare and objectional shadows and extreme contrasts. In artificial lighting, lamps shall be so installed in regard to their height, location, and spacing and shall be so equipped with reflectors, shades, or other suitable accessories as to accomplish these objects.

Subp. 2. **Glare.** Bare light sources, such as exposed lamp filaments, located within the ordinary field of the worker's vision are presumptive evidence of glare. The principal causes of glare are:

A. the light source may be too bright; that is, it may have too high a candlepower per square inch of area;

B. the light source may be too powerful for comfort; that is, it may have too great a total candlepower in the direction of the eye;

C. a given light source may be located at too short a distance from the eye or it may lie too near the center of the field of vision for comfort; that is, within too small an angle from the ordinary line of sight;

D. the contrast between the light source and its darker surroundings may be too great;

E. the time of exposure may be too great; that is, the eye may be subjected to the strain caused by a light source of given strength within the field of vision for too long a time.

Glare from natural lighting may frequently be reduced by the use of refracting or diffusing glass in windows and skylights, and by the rearrangement of machines and benches so that operators are not required to face windows.

**Statutory Authority:** *MS s 182.657*

#### **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; 182.657*

**History:** *12 SR 634*

#### **5205.0150 MAINTAINING THE LEVEL OF ILLUMINATION.**

Subpart 1. **Regular maintenance system.** The proper maintenance of equipment for both natural and artificial lighting is essential. Systems which are adequate when

first installed will soon deteriorate unless properly maintained. For continued effectiveness and economy in lighting, the factory owner shall establish a regular definite system of maintenance so that skylights, side windows, lamps, and accessories are at all times kept clean, in proper adjustment, and in good repair. Means for easy access to all lighting units shall be provided for employees in charge of their maintenance. Walls and ceilings shall be repainted at regular intervals and preferably in light tones. This is especially true where systems of indirect lighting are used.

**Subp. 2. Measuring equipment.** Especially in connection with the maintenance of lighting systems, attention is called to the desirability of having available in the factory an instrument with which the footcandles of illumination received at any point can be measured. One instrument, the footcandle meter, while not designed for precise measurement, has a wide field of usefulness because, with a little practice, determinations are easily made and are accurate enough for most practical purposes. The footcandle meter is small, light in weight, and entirely self-contained. Illumination is read directly from the scale without computation or manipulation.

By measuring light actually delivered to the work, the footcandle meter automatically reveals the combined effect of all possible causes of deterioration. Ignorance of the magnitude of deterioration has often been the cause of inadequate maintenance.

**Statutory Authority:** *MS s 182.657*

**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; 182.657*

**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]

## STEAM BOILERS

### 5205.0330 STEAM BOILERS.

Subpart 1. **Scope.** The requirements of this item shall not apply to heating plants in buildings occupied solely for residence purposes, with accommodations therein not to exceed four families; to railroad locomotives; nor to railroad locomotive engineers employed by railroad companies.

Subp. 2. **Definition.** Any steam boiler with a safety valve set to permit a pressure exceeding 15 pounds shall be considered a high-pressure steam boiler.

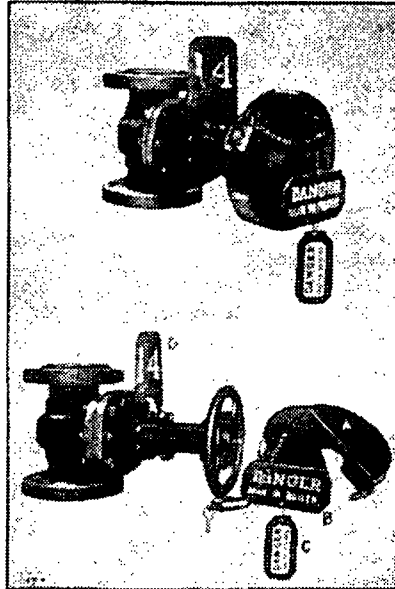
Subp. 3. **Safety valves.** Safety valves shall not discharge within seven feet of floor, platform, ground, or boiler top, across a passageway or foot-walk or in such a way as to endanger persons operating stop valves. The arrangement of piping must not be such as to create a back pressure on the safety valve.

Subp. 4. **Boiler blowoffs.** Open blowoffs shall not discharge within seven feet of floor, platform, or ground, across a passageway.

Subp. 5. **Exits from boiler room.** Safe exit from all parts of boiler room shall be provided by at least two stairways, ladders permanently fastened in place, or other means of exit.

Subp. 6. **Boiler valve locks.** An effective valve locking device is one which will prevent any motion of the valve stem, and which is so attached to the valve that it cannot be removed. When two or more boilers are connected to a common steam, feedwater, or blowoff line, at least one controlling valve in the connection from each boiler to each such common steam, feed-water, or blowoff line shall be equipped with

an effective valve locking device; and whenever a person is working in any boiler of a battery, the steam, feed-water and blowoff valves shall be closed and locked.



Boiler Valve Lock

Subp. 7. **Nonreturn valves.** A nonreturn valve is one which will automatically close and prevent steam from the main line from flowing back into the boiler if the pressure in the latter should fall below that in the steam line. Where two or more boilers are connected to one steam line, a nonreturn valve shall be provided in the main steam connection of each boiler, either in addition to or combined with the regular stop valve.

**Statutory Authority:** *MS s 182.657*

**5205.0400** [Repealed, 23 SR 2051]

**5205.0401** [Repealed, 23 SR 2051]

**5205.0410** [Repealed, 23 SR 2051]

**5205.0420** [Repealed, 23 SR 2051]

**5205.0430** [Repealed, 23 SR 2051]

**5205.0440** [Repealed, 23 SR 2051]

**5205.0450** [Repealed, 23 SR 2051]

**5205.0460** Subpart 1. [Repealed, 23 SR 2051]

Subp. 2. [Repealed, 23 SR 2051]

Subp. 3. [Repealed, 23 SR 2051]

Subp. 4. [Repealed, 23 SR 2051]

Subp. 5. [Repealed, 23 SR 2051]

Subp. 6. [Repealed, 23 SR 2051]

Subp. 7. [Repealed, 23 SR 2051]

Subp. 8. [Repealed, 23 SR 2051]

- Subp. 9. [Repealed, 23 SR 2051]
- Subp. 10. [Repealed, 23 SR 2051]
- Subp. 11. [Repealed, 23 SR 2051]
- Subp. 12. [Repealed, 23 SR 2051]
- Subp. 13. [Repealed, 23 SR 2051]
- Subp. 14. [Repealed, 23 SR 2051]
- Subp. 15. [Repealed, 12 SR 634]
- Subp. 16. [Repealed, 23 SR 2051]
- Subp. 17. [Repealed, 23 SR 2051]
- Subp. 18. [Repealed, 23 SR 2051]
- Subp. 19. [Repealed, 12 SR 634]
- Subp. 20. [Repealed, 23 SR 2051]
- Subp. 21. [Repealed, 23 SR 2051]
- Subp. 22. [Repealed, 23 SR 2051]
- Subp. 23. [Repealed, 23 SR 2051]
- Subp. 24. [Repealed, 23 SR 2051]
- Subp. 25. [Repealed, 23 SR 2051]
- Subp. 26. [Repealed, 23 SR 2051]

**5205.0470** [Repealed, 23 SR 2051]

**5205.0480** [Repealed, 23 SR 2051]

**5205.0490** [Repealed, 23 SR 2051]

## PLATFORM MANLIFTS

### **5205.0550 INSTALLATION LIMITATIONS.**

Subject to the approval of the Department of Labor and Industry, manlifts may be installed in buildings where such manlifts are not accessible to the public and where their installation and use are safe. Such manlifts shall comply with the safety requirements set out in this part:

A. The use of manlifts shall be restricted to employees and authorized persons who are trained in their use. New employees shall be individually and properly instructed in the use of manlifts.

B. The area adjoining the floor opening shall be kept clear and adequately lighted at all times.

C. Signs shall be posted at a conspicuous position on each landing, at approximately eye level, indicating "Authorized Personnel Only."

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

### **5205.0560 INSPECTION.**

Before final approval, an inspection of each new or relocated manlift shall be made by the Department of Labor and Industry.

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

### **5205.0570 TYPES OF MANLIFTS.**

Manlifts may be of the following types: hand-powered platform passenger type manlifts or special purpose personnel elevators.

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

**5205.0580 HAND-POWERED PLATFORM PASSENGER TYPE MANLIFTS.**

Subpart 1. **Requirement.** Hand-powered platform passenger type manlifts shall conform to the following requirements.

Subp. 2. **Sill clearance.** The clearance between the platform and the landing shall be not more than 1-1/2 inches nor less than three-fourths inch.

Subp. 3. **Guarding of access openings.** Access openings shall be guarded by semiautomatic vertical sliding gates or by self-closing swing gates. Such gates shall be equipped with a top crossmember not less than 42 inches above the floor, a bottom crossmember not more than one-half inch above the floor, and with at least one intermediate crossmember. The gates shall be placed within four inches horizontally from the landing sill.

Subp. 4. **Shaftway enclosures.** All unused sides of the shaftway shall be enclosed to a height of at least eight feet above the floor.

Subp. 5. **Ladders.** A fixed ladder shall be installed in the shaftway accessible from the manlift at any point within its travel to provide a means of exit from the elevator hatchway.

Subp. 6. **Car sides.** The car shall be enclosed to a height of at least 42 inches on all sides not used for entrances.

Subp. 7. **Car construction.** Car frames and platforms shall be of metal or sound seasoned wood designed with a safety factor of not less than four for metal construction and six for wood construction based on the rated load uniformly distributed. Connections between frame members of the car frame and platform shall be riveted, bolted, or welded.

Glass shall not be used on any part of the frame or enclosure.

Subp. 8. **Counterbalancing of cars.** Cars counterbalancing each other shall not be permitted.

Subp. 9. **Car safety device.** All cars shall be provided with a car safety device attached to the top or bottom of each car frame capable of stopping and sustaining the car and its rated load. The car safety device is not required to be operated by a speed governor and may be of the instantaneous type operated as a result of the breaking or slackening of the suspension members.

Subp. 10. **Compensating cable.** Where the travel exceeds 40 feet, compensating cables or chains properly guided shall be provided.

Subp. 11. **Load capacity.** The rated load capacity shall not exceed 300 pounds. Only one person shall be permitted to ride elevator at a time. The movement of freight or materials on elevator is prohibited.

Subp. 12. **Load tests.** A rated load test and a test of the car safety device with rated load in the car shall be made on each new or relocated installation before it is placed in service.

Subp. 13. **Guide rails.** Cars and counterweights shall be provided with steel guide rails or straight grained seasoned wood free from knots, shakes, dry rot, or other imperfections.

Subp. 14. **Guide rail fastenings.** Guide rails shall be securely fastened with throughbolts or clips of such strength, design, and spacing that:

A. the guide rails and their fastenings shall not deflect more than one-quarter inch under normal operation;

B. the guide rails and their fastenings shall withstand the application of the safety when stopping the car with rated load under free-fall conditions;

C. car and counterweight guide rails shall rest on suitable supports and extend at the top of the hoistway sufficiently to prevent the guide shoes from running off the guide rails in the case of the car on counterweight traveling beyond the terminal landings.

Subp. 15. **Car counterweights.** When counterweight sections are used, they shall be secured by at least two tie rods passing through holes in each section. The rods shall have lock nuts at each end secured by cotter pins.

Subp. 16. **Factors of safety.** The factor of safety, based on static loads, to be used in the design of driving machines and sheaves shall not be less than eight for wrought iron or rod steel and ten for cast iron or other materials.

Subp. 17. **Car brake.** Each car shall be equipped with a manual dead-man type brake which operates in either direction of travel and is capable of stopping and holding the car with its rated load at any point in its limit of travel.

Subp. 18. **Overhead beams.** Overhead beams and their supports shall be designed to withstand the static load plus twice the suspended load without deflection exceeding the stress of the materials used.

Subp. 19. **Machine access.** Adequate and permanent means of access shall be provided to all equipment for maintenance and inspection.

Subp. 20. **Power driving mechanism.** Power driving mechanisms shall not be attached to or made part of any hand powered elevator.

Subp. 21. **Suspension cables.** Suspension means shall consist of not less than two wire ropes of not less than one-half inch diameter each.

Subp. 22. **Sheaves.** All hoisting and counterweight sheaves shall have a diameter of at least 40 times the diameter of the cable passing over them.

Subp. 23. **Cable fastenings.** Car and counterweight cable ends, except such fastenings as are required for compensating cables or chains, shall be fastened by passing through tapered and babbitted sockets with the same requirements of those for power elevators or secured by approved clamp or special fastening devices conforming to the following:

A. clamps shall not be of the U-bolt type;

B. both members of the clamps shall be provided with seats conforming with the lay of the rope;

C. clamps shall be drop forgings; and

D. ropes shall be passed around metal thimbles.

Subp. 24. **Operating rope.** The operating rope may pass through the car crossheads if a guard to prevent entry of the hand is provided.

Subp. 25. **Car locking devices.** A separate locking device, independent of the manual brake, that will hold the car and its rated load at each landing shall be provided. This device may be either manual or automatic.

Subp. 26. **Counterweight guarding.** The counterweight shall be fully enclosed for the full length of its travel, except for an inspection section at the lower limit of travel. The inspection section shall be large enough only to inspect the fastenings and be covered with a screen or mesh which will reject a two-inch ball.

Subp. 27. **Shaftway illumination.** Shaftway illumination shall be adequate to enable the operator to have full view of all obstructions and hazards which might possibly cause injury.

Subp. 28. **Bumper springs.** Bumper springs shall be provided either on the top of the car or on the bottom of the sheave supports and shall be of sufficient strength to absorb the impact of the car and its load.

Subp. 29. **Car counterbalance weights.** If weights are to be used to properly counterbalance car, a suitable box or container shall be mounted firmly in the elevator car to contain such weights while in use.

Subp. 30. **Car gate.** A car gate or guardrail 42 inches from car floor capable of withstanding a lateral pressure of 250 pounds without causing structural failure shall be provided.

Subp. 31. **Pit buffers.** Spring buffers of such a design and construction as to absorb the energy of the car with a capacity load shall be provided at the lowest limit of travel.

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

**5205.0590** [Repealed, 23 SR 2051]

## 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, but not limited to, 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 1926.1101.

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

**History:** *12 SR 634; 21 SR 1897*

### 5205.0665 ELECTRICAL REQUIREMENTS.

Exposed noncurrent 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*

### 5205.0670 BLOCKING AND CRIBBING MACHINERY.

Heavy machinery, equipment, or parts thereof which are suspended or held aloft by slings, cables, chains, jacks, or hoists shall be blocked or cribbed to prevent falling or shifting before employees are permitted to work under or between the members of the equipment.

Elevated bulldozer and scraper blades, power crane booms, end loader buckets, dump truck boxes, and similar equipment shall be fully lowered or adequately blocked or cribbed before being serviced or repaired.

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

### 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.

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

**History:** *12 SR 1754; 21 SR 1897*

**5205.0680** [Repealed, 14 SR 2130]

**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  
1 -1/2

7  
7

8 -1/4  
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.

Subpart 1. **Scope.** This section applies to:

- A. all motorized, self-propelled vehicles used off the highway including industrial type trucks, crawler equipment, and rubber-tired vehicles;
- B. emergency vehicles including trucks, snow plows, road maintenance vehicles, and related equipment; and
- C. service trucks including garbage compactors.

These parts shall not apply to vehicles with less than a 20 HP motor.

Subp. 2. **General requirements.** Motorized, self-propelled vehicles shall meet the requirements of Code of Federal Regulations, title 29, sections 1926.600, 1926.601, and 1926.602.

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.

Subp. 4. **Vehicle inspection.** The Code of Federal Regulations, title 29, section 1926.601 (b) (14) shall apply to all vehicles covered in Code of Federal Regulations, title 29, section 1926.602.

**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**

#### **5205.0850 PNEUMATIC POWER TOOLS.**

All pneumatically driven nailers, staplers, and other fastening equipment provided with automatic fastener feed shall have a safety device on the muzzle which is designed to prevent the tool from ejecting fasteners unless the muzzle is in contact with the work surface.

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

#### **5205.0860 MACHINES WITH REVOLVING PARTS.**

Subpart 1. **Scope.** The provisions of this part shall apply to extractors, mixers, mullers, and centrifuges.

Nothing in this part shall apply to equipment used in research laboratories or equipment with less than one-quarter HP driving motors.

Nothing in this part shall apply to any machine which must be hand-fed where the feed opening is protected either by a guarded hopper or automatic feed system which prevents the operator from reaching into the point of operation.

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]

**5205.1000** [Repealed, 23 SR 2132]

**5205.1010** [Repealed, 23 SR 2132]

**5205.1020** [Repealed, 23 SR 2132]

**5205.1030** [Repealed, 23 SR 2132]

**5205.1040** [Repealed, 23 SR 2132]

## 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. 4a. Rope inspection.**

A. A thorough inspection of all ropes shall be made at least once a month and a certification record which includes the date of inspection, the signature of the person who performed the inspection, and an identifier for the ropes which were inspected shall be kept on file where readily available to appointed personnel. Any deterioration, resulting in appreciable loss of original strength, shall be carefully observed and a determination made as to whether further use of the rope would constitute a safety hazard. Some of the conditions that could result in an appreciable loss of strength are the following:

(1) reduction of rope diameter below nominal diameter due to loss of core support, internal or external corrosion, or wear of outside wires;

(2) a number of broken outside wires and the degree of distribution or concentration of such broken wires;

(3) worn outside wires;

(4) corroded or broken wires at end connections;

(5) corroded, cracked, bent, worn, or improperly applied end connections; or

(6) severe kinking, crushing, cutting, or unstranding.

B. All rope which has been idle for a period of a month or more due to shutdown or storage of a crane on which it is installed shall be given a thorough inspection before it is used. This inspection shall be for all types of deterioration and shall be performed by an appointed person whose approval shall be required for further use of the rope. A certification record shall be available for inspection which includes the date of inspection, the signature of the person who performed the inspection, and an identifier for the rope which is inspected.

**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;

# MINNESOTA RULES 1999

315

SAFETY AND HEALTH STANDARDS 5205.1400

(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; 23 SR 2132*

## **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 PERSONNEL PLATFORMS SUSPENDED FROM CRANES AND DERRICKS.**

The design, construction, testing, use, and maintenance of personnel platforms and the hoisting of personnel platforms on the load lines of cranes or derricks shall meet the requirements of Code of Federal Regulations, title 29, section 1926.550, paragraph (g).

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

**History:** *12 SR 634; 17 SR 1273*

**5205.1240** [Repealed, 17 SR 1273]

**5205.1250** [Repealed, 17 SR 1273]

**5205.1260** [Repealed, 17 SR 1273]

**5205.1270** [Repealed, 17 SR 1273]

**5205.1280** [Repealed, 17 SR 1273]

**5205.1290** [Repealed, 17 SR 1273]

**5205.1300** [Repealed, 17 SR 1273]

## **HOPPERS**

### **5205.1400 INSPECTION OF HOPPERS.**

Subpart 1. **Definitions.** The terms used in this part have the meanings given them in this subpart.

A. "Aggregate" means the natural sands, gravels, and crushed stones used for mixing with cementing material in making mortars and cements.

B. "Corrosive agent or substance" means any agent or substance with a pH factor of ten or greater or four or less.

C. "Hopper" means a metal structure designed for storing and dispensing materials, with a capacity of one ton or greater, that is shaped to allow stored materials to flow from it.

D. "Nondestructive testing" means a testing method that does not damage or destroy the test sample. Nondestructive testing includes, but is not limited to, the use of X-rays, ultrasonics, radiography, and magnetic flux.

E. "Visual inspection" means a thorough physical examination of all interior and exterior surface areas, and support members and their component parts.

Subp. 2. **Inspection.** Hoppers used to hold aggregate shall be inspected according to the schedule in subpart 3 if employees have access to the area beneath the hopper or the area surrounding the hopper, equal to the height of the hopper measured from the ground or floor to the hopper's highest point. The inspection shall be conducted by a person qualified to conduct the inspection under subpart 7.

Subp. 3. **Inspection schedule.**

A. Hoppers that must be inspected under subpart 2 shall be visually inspected every 12 months.

B. Hoppers that must be inspected under subpart 2, that have had corrosive agents or substances used within the system, shall be nondestructively tested every five years.

C. Hoppers that must be inspected under subpart 2, that have not had any corrosive agents or substances used within the system, shall be nondestructively tested every ten years.

D. Hoppers that have been modified, altered, or repaired shall be inspected under subpart 2 before returning the hopper to service when the modifications, alterations, or repairs affect the designed load capacity of the hopper. This includes, but is not limited to, relining of the hopper.

Subp. 4. **Documentation.** Inspections required by this part shall be documented and the required documentation shall be retained for the life of the hopper at the facility where the hopper is located. The documentation shall be made available upon request to representatives of the Occupational Safety and Health Division. The documentation of the inspections shall include:

A. the dates on which inspections were conducted;

B. the names, addresses, and employers of persons conducting the inspections;

C. the means used to inspect the hoppers;

D. the findings of the inspections;

E. the deficiencies noted as a result of the inspections; and

F. the dates on which recommended repairs were completed.

Subp. 5. **Repairs.** If deficiencies found during an inspection do not compromise the designed load capacity of the hopper, all repairs shall be made within the minimum amount of time necessary to complete repairs. If deficiencies found during an inspection do compromise the designed load capacity, the hopper shall be emptied and removed from service until all repairs are completed.

Subp. 6. **Means of inspection.** All inspections conducted under this part shall include visual inspections and nondestructive testing that is capable of determining that erosion, corrosion, stress, fatigue, damage, repairs, or alterations have not compromised the designed load capacity.

Subp. 7. **Qualified person.** A person is qualified to conduct inspections under this part if, through education, training, or experience, the person is capable of determining through visual inspections and nondestructive testing that erosion, corrosion, stress, fatigue, damage, repairs, or alterations have not compromised the designed load capacity.

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

**History:** *16 SR 542*

**5205.1500** [Repealed, 23 SR 2060]