

DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS

Amendment and Compilation of Chapters 12-50, 12-52.1,
12-56, 12-60, 12-110, 12-170, 12-180, 12-190,
and 12-208

Hawaii Administrative Rules

(Date of Adoption)

1. Chapter 12-50, Hawaii Administrative Rules,
entitled "General Provisions and Definitions", is
amended and compiled to read as follows:

"HAWAII ADMINISTRATIVE RULES

TITLE 12

DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS

SUBTITLE 8

HAWAII OCCUPATIONAL SAFETY AND HEALTH DIVISION

PART 1

GENERAL, LEGAL, AND ADMINISTRATIVE PROVISIONS
FOR OCCUPATIONAL SAFETY AND HEALTH

CHAPTER 50

GENERAL PROVISIONS AND DEFINITIONS

§12-50-1

§12-50-1	Application
§12-50-2	Definitions
§12-50-3	Use of existing equipment
§12-50-4	Sufficiency of safeguards
§12-50-5	Minimum standards
§12-50-6	Computation of time
§12-50-7	Repealed
§12-50-8	Repealed
§12-50-9	Repealed
§12-50-10	Personal protective equipment

Historical Note: Chapter 50 of title 12 is based upon chapter 101 of the Hawaii Occupational Safety and Health Standards, Rules and Regulations. [Eff 7/11/74; am 6/7/76; am 12/30/76; am 8/22/77; am 8/11/78; am 8/23/79; R 7/12/82]

§12-50-1 Application. This part contains Occupational Safety and Health Administrative rules, which apply to parts 1 through 8. Part 2 applies to all industries in all work environments, except that audiometric testing in 29 C.F.R. §1910.95 does not apply to construction work unless employees are exposed to an [~~8-hour~~] eight-hour time weighted average of ninety [~~90~~] (90) dBA and above. Part 3 applies only to construction. [Eff 7/12/82; am 8/15/87; am 11/16/96; am 2/14/00; am 5/21/04; am 2/13/12; am and comp] (Auth: HRS §396-4) (Imp: HRS §396-4)

§12-50-2 Definitions. As used in parts 1 to 8, chapters 50 through [~~209~~] 208:

"Accessory structure" means a structure not greater than 3,000 square feet (279m²) in floor area, and not over two stories in height, the use of which

is customarily accessory to and incidental to that of the dwelling(s) and which is located on the same lot.

"Administrator" means the administrator, division of occupational safety and health, department of labor and industrial relations, State of Hawaii.

"Affected employee" means an employee affected by the grant or denial of a variance, and includes any one of the employee's designated representatives.

"Appeals board" means the Hawaii labor [~~and industrial~~] relations [~~appeals~~] board, department of labor and industrial relations.

"Assistant secretary" means, for [~~the purpose of~~] title 12, subtitle 8, parts 1 to 8, the director of the department of labor and industrial relations or the [~~director's~~] director's designee.

"Attorney general" means the attorney general of the State of Hawaii.

"Authorized person" means a person approved or assigned by the employer to perform a specific type of duty or to be at a specific location at the jobsite.

"Citation" means any order of the department of labor and industrial relations to correct a violation of the law, of any standard, rule, or order promulgated pursuant to the law, or of any substantive rule published in [~~these chapters~~] this part.

"Competent person" means one who is capable of identifying existing or predicting development of hazards in the surroundings or working conditions which are unhealthy, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate the hazards.

"Compulsory process" means the institution of any action, including ex parte application for an inspection warrant or its equivalent.

"Construction" or "construction work" means work for construction, alteration, demolition, or repair including painting and decorating, erection of new electric transmission and distribution lines and equipment, and the alteration, conversion, and improvement of the existing transmission and distribution lines and equipment.

"Department" or "DLIR" means the department of labor and industrial relations, State of Hawaii.

"Designated representative" means any individual or organization to whom an employee gives written authorization to exercise that employee's rights under parts 1, 2, 3, and 8. A recognized or certified collective bargaining agent shall be treated automatically as a designated representative without regard to written employee authorization.

"Director" means the director of the department of labor and industrial relations or the director's designee.

"Division" [~~or "HIOSH"~~] means the occupational safety and health division, department of labor and industrial relations, State of Hawaii.

"Dwelling" means any building that contains one or two dwelling units used, intended, or designed to be built, used, rented, leased, let or hired out to be occupied, or that are occupied for living purposes.

"Dwelling unit" means a single unit providing complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation.

"Employee" means every natural person who is required, directed, permitted, or suffered by any employer to engage in any employment, to go to work, or be at any time in any place of employment. The term can mean a former [~~employ~~] employee in the case of potential exposures to toxic materials or harmful physical agents.

"Employee of the State" means officers and employees of the department of labor and industrial relations, and persons acting in behalf of the department in an official capacity, whether temporarily or with or without compensation.

"Employer" means the State and every [~~State~~] state agency; each county and all public and quasi-public corporations and public agencies; every person [~~which~~] that has any natural person in service; the legal representative of any deceased employer; or every person having direction, management, control, or custody of any employment, place of employment, or any

employee. Where potential exposures to toxic materials or harmful physical agents are, may have been present or are likely to be present in the future, the term applies to current employers, former employers, or successor employers.

"Employment" means the carrying on of any trade, business, occupation, or work, including all excavation, demolition, and construction work, or any process or operation in any way related thereto, in which any person is engaged to work for hire except domestic service in or about a private home.

"Establishment" means a single physical location where business is conducted or where services of industrial operations are performed; for example, a factory, mill, store, hotel, restaurant, movie theatre, farm, ranch, bank, sales office, warehouse, or central administrative office.

"First aid" means any one-time treatment, and any follow-up visit for the purpose of observation, of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care; one-time treatment and a follow-up visit for the purpose of observation are considered first aid even though provided by a physician or registered professional personnel.

"Gravity of violation" means the basis for calculating the basic penalty for violations. The assessments are made on the severity of the injury or illness which could result from the alleged violation and the probability that an injury or illness could occur [~~as a result~~] because of the alleged violation.

"Hawaii Revised Statutes" or "HRS" means laws enacted by the Hawaii State legislature.

"HIOSH" means the occupational safety and health division, department of labor and industrial relations, State of Hawaii.

"Infeasible" means that it is impossible to perform the work using all available means and methods or that it is technologically impossible to use safety equipment or safe practices.

"Inspection" means any inspection of an employer's factory, plant, establishment, construction

site, or other area, workplace, or environment where work is performed by an employee of an employer; this includes any inspection conducted pursuant to a complaint filed under section 12-51-11(a) and [~~section 12-51-11(e)~~] (c), any reinspection, follow-up inspection, accident investigation, or other inspection conducted under the law.

"Law" means chapter 396, HRS, the Hawaii Occupational Safety and Health Law.

"Lost time case" means a nonfatal traumatic injury that causes any loss of time from work beyond the day or shift it occurred, or a nonfatal [~~nontraumatic~~] non-traumatic [~~illness/disease~~] illness or disease that causes disability at any time.

"Lost workdays" means number of days (consecutive or not) after, but not including, the day of injury or illness during which the employee would have worked but could not do so; that is, could not perform all or any part of the normal assignment during all or any part of the workday or shift, because of the occupational injury or illness.

"Medical treatment" means treatment administered by a physician or by registered professional personnel under the standing orders of a physician but does not include first aid treatment even though provided by a physician or registered professional personnel.

"Nationally recognized testing laboratories" means those laboratories listed by the [~~U.S.~~] U.S. Department of Labor, Occupational Safety and Health Administration.

"Occupational Safety and Health standard" means a standard which requires conditions, or the adoption or use of one or more practices, means, methods, operations, or processes, reasonably necessary or appropriate to provide safe or healthful employment and places of employment.

"Order" means a command to perform a mandatory act issued by the department.

"OSHA" means, for [~~the purpose of~~] title 12, subtitle 8, Hawaii occupational safety and health division, department of labor and industrial relations, State of Hawaii.

"OSHA's designee" means, for [~~the purpose of~~] title 12, subtitle 8, the director of the department of labor and industrial relations or the director's designee.

"Party" means a person admitted to participate in a hearing conducted in accordance with subchapter 3 of chapter 12-53; an applicant for relief and any affected employee is entitled to be named parties; the department, represented by the attorney general, is a party without the necessity of being named.

"Person" means an individual, partnership, association, corporation, business trust, legal representative, an organized group of individuals, or an agency, authority, or instrumentality of the State or its political subdivisions.

"Personally identifiable employee medical information" means employee medical information accompanied by either direct identifiers (name, address, social security number, payroll number, etc.) or by information which could reasonably be used in the particular circumstances indirectly to identify specific employees, e.g., exact age, height, weight, race, sex, date of initial employment, job title, etc.

"Place of employment" means any place, and the premises appurtenant thereto, where employment is carried on.

"Qualified" means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated [~~his~~] the ability to solve or resolve problems relating to the subject matter, the work, or the project.

"Recordable occupational injuries or illnesses" means any occupational injuries or illnesses which result in:

- (1) Fatalities, regardless of the time between the injury and death, or the length of the illness; [~~or~~]
- (2) Lost workday cases, other than fatalities, that result in lost workdays; or
- (3) Nonfatal cases without lost workdays which result in transfer to another job or

termination of employment, medical treatment (other than first aid), loss of consciousness, or restriction of work or motion which includes any diagnosed occupational illnesses reported to the employer but are not classified as fatalities or lost workday cases.

"Residential construction" means construction work on detached one- and two-family dwellings and townhouses not more than three stories above grade plane in height with a separate means of egress and their accessory structures.

"Rule" means each section in the State of Hawaii Occupational Safety and Health rules and standards, adopted under chapter 396, HRS, and includes any "rule" and "occupational safety and health standard".

"Safe and safety" as applied to an employment or place of employment means such freedom from danger to employees as the nature of the employment reasonably permits.

"Safety and health compliance officers" means occupational safety and health officers and environmental health specialists assigned within the department to inspection and enforcement duties.

"Safety device" and "safeguard" means any practicable method of mitigating or preventing a specific danger.

"Severity assessment" means an assessment assigned to a hazard to be cited according to the serious injury or illness [~~which~~] that could reasonably be expected to result from an employee's exposure as follows:

- (1) High severity - death from injury or illness; injuries involving permanent disability; or chronic, irreversible illnesses[-];
- (2) Medium severity - injuries or temporary reversible illnesses resulting in hospitalization or a variable but limited period of disability[-];
- (3) Low severity - injuries or temporary, reversible illnesses not resulting in

hospitalization and requiring only minor supportive treatment[-]; and

- (4) Minimal severity - conditions which have a direct and immediate relationship to the safety and health of employees, the injury or illness most likely to result would probably not cause death or serious physical harm.

"Shall" means mandatory.

"Substantial" means constructed of such strength, material, design, and workmanship that the object referred to will withstand all normal wear, shock, and usage.

"Townhouse" means a single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from foundation to roof and with a yard or public way [~~in a~~] on at least two sides. [Eff 7/12/82; am 8/15/87; am 3/22/91; am 1/26/96; am 7/10/97; am 10/23/97; am 7/6/98; am 3/23/01; am 1/10/03; am 2/13/12; am and comp

] (Auth: HRS §396-4) (Imp: HRS §396-4)

§12-50-3 Use of existing equipment. Nothing in these rules shall prevent the use of existing equipment during its lifetime, if it is safeguarded properly, maintained in good condition, and conforms to factors of safety. [Eff 7/12/82; am 8/15/87; comp] (Auth: HRS §396-4) (Imp: HRS §396-4)

§12-50-4 Sufficiency of safeguards. The director may require safeguards not required in these standards if a sufficient hazard exists to warrant this action. The final determination of the sufficiency of any safeguard rests with the director. [Eff 7/12/82; am 8/15/87; comp] (Auth: HRS §396-4) (Imp: HRS §396-4)

§12-50-5

§12-50-5 Minimum standards. These rules establish minimum standards applying to all employment and places of employment in Hawaii as defined by chapter 396, HRS. [Eff 7/12/82; comp]
(Auth: HRS §396-4) (Imp: HRS §396-4).

§12-50-6 Computation of time. (a) The time in which any act required by these rules is computed by excluding the first day and including the last, except for the computation of the number of days a violation continued unabated. If the last day falls on a Saturday, Sunday, or legal holiday, it is also excluded.

(b) The number of days a violation continues to be unabated shall be computed from the day following the abatement date specified in the citation or the final order. It shall include all calendar days between that date and the date of reinspection, excluding the date of reinspection. [Eff 7/12/82; am 8/15/87; comp] (Auth: HRS §396-4)
(Imp: HRS §396-4)

§12-50-7 REPEALED. [R 3/29/99]

§12-50-8 REPEALED. [R 3/29/99]

§12-50-9 REPEALED. [R 2/13/12]

§12-50-10 [~~(a)~~] Personal protective equipment.
(a) Standards in this part requiring the employer to provide personal protective equipment (PPE), including respirators and other types of PPE, because of hazards

to employees impose a separate compliance duty with respect to each employee covered by the requirement. The employer must provide PPE to each employee required to use the PPE, and each failure to provide PPE to an employee may be considered a separate violation.

(b) Training. Standards in this part requiring training on hazards and related matters, such as standards requiring that employees receive training or that the employer train employees, provide training to employees, or institute or implement a training program, impose a separate compliance duty with respect to each employee covered by the requirement. The employer must train each affected employee in the manner required by the standard, and each failure to train an employee may be considered a separate violation." [Eff 7/12/09; am and comp
] (Auth: HRS §396-4) (Imp: HRS
§396-4)

2. Chapter 12-52.1, Hawaii Administrative Rules, entitled "Recording and Reporting Occupational Injuries and Illnesses", is amended and compiled to read as follows:

"HAWAII ADMINISTRATIVE RULES"

TITLE 12

DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS

SUBTITLE 8

HAWAII OCCUPATIONAL SAFETY AND HEALTH DIVISION

PART 1

GENERAL, LEGAL, AND ADMINISTRATIVE PROVISIONS
FOR OCCUPATIONAL SAFETY AND HEALTH

CHAPTER 52.1

RECORDING AND REPORTING OCCUPATIONAL INJURIES AND
ILLNESSES

§12-52.1-1 State amendments to 29 C.F.R. §1904
§12-52.1-2 Incorporation of federal standard

Historical Note: Chapter 12-52.1 is based substantially upon chapter 12-52. [Eff 7/12/82;

§12-52.1-1

am 5/28/83; am 8/15/87; am 9/30/94; am 2/8/97; am 7/10/97; am 7/6/99; R 12/29/01]

§12-52.1-1 State amendments to 29 C.F.R. §1904.

(a) 29 C.F.R. §1904.1(a)(1) is amended to read as follows:

Basic requirement. (1) If your company had ten (10) or fewer employees at all times during the last calendar year, you do not need to keep OSHA injury and illness records unless HIOSH, OSHA, or the Bureau of Labor and Statistics (BLS) informs you in writing that you must keep records under 29 C.F.R. §1904.37, §1904.41, or §1904.42. However, as required by 29 C.F.R. §1904.39 all employers covered by chapter 396, HRS, Hawaii Occupational Safety and Health Law, must report to HIOSH any workplace incident that results in an employee fatality or the inpatient hospitalization of an employee, employee's amputation, employee's loss of an eye, or property damage [~~in excess of~~] greater than \$25,000.

(b) 29 C.F.R. §1904.2(a)(1) is amended to read as follows:

(a) Basic requirement. (1) If your business establishment is classified in a specific low hazard retail, service, finance, insurance, or real estate industry listed in Appendix A, titled "Non-Mandatory Appendix A to Subpart B - Partially Exempt Industries", dated March 17, 2017, which is made part of this [~~chapter~~] section and located at the end of this [~~chapter,~~] section, you do not need to keep OSHA injury and illness records unless the government asks you to keep records under 29 C.F.R. §1904.37, §1904.41, or §1904.42. However, all employers must report to HIOSH any workplace incident that results in an employee fatality or the inpatient hospitalization of an employee, employee's amputation, employee's loss of an eye, or property

damage [~~in excess of~~] greater than \$25,000 (see 29 C.F.R. §1904.39(a)).

(c) 29 C.F.R. §1904.29(b)(2) is amended to read as follows:

(2) What do I need to do to complete an OSHA 301 Incident Report? You must complete an OSHA 301 Incident Report form, or an equivalent form that contains the same information required on the OSHA 301 Incident Report form, for each recordable injury or illness that is required to be entered on the OSHA 300 Log.

(d) 29 C.F.R. §1904.37(c) is added to read as follows:

(c) If you receive an OSHA occupational injury and illness data collection form or any other type of injury and illness survey authorized by HIOSH, you must respond to the survey or request, and return it to the designated recipient within the specified time limit.

(e) 29 C.F.R. §1904.39(a) is amended to read as follows:

(a) Basic requirement. Within eight (8) hours after the death of any employee from a work-related incident, and within twenty-four (24) hours of the inpatient hospitalization of an employee, employee's amputation, employee's loss of an eye as a result of a work-related incident, or property damage in excess of \$25,000 as a result of a work-related incident, you must orally report the fatality, inpatient hospitalization, amputation, loss of an eye, or property damage by telephone, (808) 586-9102, or in person at the HIOSH office in Honolulu.

(f) 29 C.F.R. §1904.39(b)(1) is amended to read as follows:

(b) Implementation. (1) If the HIOSH office is closed, may I report the incident by leaving a message on HIOSH's answering machine, faxing the area office, or sending an e-mail? When the HIOSH office is closed,

\$12-52.1-1

the (808) 586-9102 telephone number will allow you to leave a phone message. In order for the message to be considered officially reported, all of the information in [~~1904.39(b)(2)~~] 29 C.F.R. §1904.39(b)(2) must be provided on the answering machine message.

(g) 29 C.F.R. §1904.39(b)(11) is amended to read as follows:

(11) How does HIOSH define "amputation"? An amputation is the traumatic loss of a limb or other external body part. Amputations include a part, such as a limb or appendage, which has been severed, cut off, amputated (either completely or partially); fingertip amputations with or without bone loss; medical amputations resulting from irreparable damage; and amputations of body parts that have since been reattached.

(h) 29 C.F.R. §1904 Non-Mandatory Appendix A to Subpart B - Partially Exempt Industries is amended for the duration of the HIOSH Strategic Plan. The industries with NAICS codes 4812, 4879, and 4885 have been included in the HIOSH Strategic Plan and will continue to be required to maintain the injury and illness log for the duration of HIOSH's Strategic Plan unless the establishment has less than eleven (11) employees. 29 C.F.R. §1904 Non-Mandatory Appendix A to Subpart B - Partially Exempt Industries is amended to read as follows:

Employers are not required to keep OSHA injury and illness records for any establishment classified in the following North American Industry Classification System (NAICS) codes, unless they are asked in writing to do so by OSHA, the Bureau of Labor Statistics (BLS), or a state agency operating under the authority of OSHA or the BLS. All employers, including those partially exempted by [~~reason of~~] company size or industry classification, must report to OSHA any workplace incident that results in a fatality, the inpatient hospitalization, amputation, or loss of an eye of an employee (see 29 C.F.R. §1904.39).

Non-Mandatory Appendix A to Subpart B-

Partially Exempt Industries

March 17, 2017

NAICS CODE	INDUSTRY DESCRIPTION	NAICS CODE	INDUSTRY DESCRIPTION
4431..	Electronics and Appliance Stores	5259..	Other Investment Pools and Funds
4461..	Health and Personal Care Stores	5331..	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works).
4471..	Gasoline Stations	5411..	Legal Services
4481..	Clothing Stores	5412..	Accounting, Tax Preparation, Bookkeeping, and Payroll Services
4482..	Shoe Stores	5413..	Architectural, Engineering, and Related Services
4483..	Jewelry, Luggage, and Leather Goods Stores	5414..	Specialized Design Services
4511..	Sporting Goods, Hobby, and Musical Instrument Stores	5415..	Computer Systems Design and Related Services
4512..	Book, Periodical, and Music Stores	5416..	Management, Scientific, and Technical Consulting Services
4531..	Florists	5417..	Scientific Research and Development Services
4532..	Office Supplies, Stationary, and Gift Stores	5418..	Advertising and Related Services
5121..	Motion Picture and Video Industries	5511..	Advertising and Related Services
5122..	Sound Recording Industries		
5151..	Radio and Television Broadcasting		
5172..	Wireless Telecommunications Carriers (except Satellite).		
5179..	Other Telecommunications		
5182..	Data Processing, Hosting, and Related Services		
5191..	Other Information Services		

5221..	Depository Credit Intermediation	5615..	Management of Companies and Enterprises
5222..	Nondepository Credit Intermediation		Travel
5223..	Activities Related to Credit Intermediation	5616..	Arrangement and Reservation Services
5231..	Securities and Commodity Contracts Intermediation and Brokerage	6111..	Investigation and Security Services
5232..	Securities and Commodity Exchange	6112..	Elementary and Secondary Schools
5239..	Other Financial Investment Activities	6113..	Junior College Colleges, Universities, and
5241..	Insurance Carriers	6114..	Professional Schools
5242..	Agencies, Brokerages, and Other Insurance Related Activities	6115..	Business Schools and Computer and Management Training
5251..	Insurance and Employee Benefit Funds	6116..	Technical and Trade Schools
		6117..	Other Schools and Instructional Educational Support Services
		6211..	Offices of Physicians
		6212..	Offices of Dentists
		6213..	Offices of Other Health Practitioners
		6214..	Outpatient Care Centers
		6215..	Medical and Diagnostic Laboratories

[Eff 12/29/01; am 4/29/02; am 1/10/03; am 2/19/17; am
and comp] (Auth: HRS §396-4) (Imp:
HRS §396-4)

§12-52.1-2 Incorporation of federal standard.

Title 29, Part 1904 of the Code of Federal Regulations,
[2016] 2017 Edition published as of July 1, [~~2016,~~
2017, by the U.S. Government Printing Office, U.S.
Superintendent of Documents, Washington, DC 20402-0001,
is made part of this chapter, except as provided in
section 12-52.1-1." [Eff 12/29/01; am 1/10/03; am
5/21/04; am 5/5/05; am 2/13/12; am 2/19/17; am and
comp] (Auth: HRS §396-4) (Imp: HRS
§396-4)

3. Chapter 12-56, Hawaii Administrative Rules, entitled "Program Fees and Library Policies", is amended and compiled to read as follows:

"HAWAII ADMINISTRATIVE RULES

TITLE 12

DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS

SUBTITLE 8

HAWAII OCCUPATIONAL SAFETY AND HEALTH DIVISION

PART 1

GENERAL LEGAL AND ADMINISTRATIVE PROVISIONS
FOR OCCUPATIONAL SAFETY AND HEALTH

CHAPTER 56

PROGRAM FEES AND LIBRARY POLICIES

\$12-56-1	Purpose and scope
\$12-56-2	Safety and health professionals
\$12-56-3	Public notices for variances
\$12-56-4	Explosives
\$12-56-5	Training materials
\$12-56-6	Repealed

§12-56-1

§12-56-1 Purpose and scope. This chapter pertains to the assessment of fees by the director for services not normally considered part of an inspection. This chapter is intended to comply with section 396-5.1, HRS. [Eff 2/8/97; am and comp] (Auth: HRS §396-4) (Imp: HRS §§396-4, 396-5.1)

§12-56-2 Safety and health professionals. (a) Any individual submitting an application to the director to become a certified safety and health professional in accordance with section [~~12-50-7~~] 12-58-2 shall pay an application fee of [~~\$50~~] \$75, and upon acceptance, shall pay a certification fee of [~~\$300~~] \$460. Any certified individual may apply for renewal of the certificate by paying a fee of [~~\$100~~] \$150.

(b) All fees shall be nonrefundable. [Eff 2/8/97; am and comp] (Auth: HRS §396-4) (Imp: HRS §§396-4, 396-5.1)

§12-56-3 Public notices for variances. Any employer or class of employers who has been granted a variance by the director pursuant to chapter 12-53, shall be responsible for the publication cost of the variance notice for general circulation in the [~~state~~] State. [Eff 2/8/97; am 12/29/00; am and comp] (Auth: HRS §396-4) (Imp: §§396-4, 396-5.1)

§12-56-4 Explosives. (a) Certificate of fitness.

- (1) Individuals applying for a certificate of fitness shall pay an examination fee of [~~\$150~~] \$225.

- (2) The renewal fee for a certificate of fitness shall be [~~\$50~~] \$75 and shall be paid at the time of renewal.
- (b) All fees shall be nonrefundable.
[Eff 2/8/97; am 3/29/99; am and comp
] (Auth: HRS §396-4) (Imp:
HRS §§396-4, 396-5.1)

\$12-56-5 Training materials. Participants of HIOSH sponsored workshops shall pay a nonrefundable fee of [~~\$5~~] \$10 to cover the cost of the materials provided." [Eff 2/8/97; am and comp]
(Auth: HRS §396-4) (Imp: HRS §396-4, 396-5.1)

\$12-56-6 REPEALED. R 11/2/12

4. Chapter 12-60, Hawaii Administrative Rules, entitled "General Safety and Health Requirements", is amended and compiled to read as follows:

"HAWAII ADMINISTRATIVE RULES

TITLE 12

DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS

SUBTITLE 8

HAWAII OCCUPATIONAL SAFETY AND HEALTH DIVISION

PART 2

GENERAL LEGAL AND ADMINISTRATIVE PROVISIONS
FOR OCCUPATIONAL SAFETY AND HEALTH

CHAPTER 60

GENERAL SAFETY AND HEALTH REQUIREMENTS

- \$12-60-1 Application
- \$12-60-2 Safety and health programs
- \$12-60-3 Employee responsibilities
- \$12-60-4 Removal of safety devices
- \$12-60-5 Use of intoxicants or drugs
- \$12-60-6 Requirements of competence
- \$12-60-7 Requirement of quality

§12-60-50

§§12-60-8 to 12-60-49 (Reserved)
§12-60-50 Standards

Historical Note: Chapter 60 of title 12 is based upon chapter 201 of the Hawaii Occupational Safety and Health Standards, Rules and Regulations. [Eff 7/11/74; am 6/7/76; am 12/30/76; am 8/22/77; R 12/6/82]

§12-60-1 Application. The general provisions of [~~these~~] the standards in this chapter shall not [~~be used~~] apply when there are more specific provisions in other sections of the standards[~~-~~] in parts 3 - 11 of title 12, subtitle 8. [Eff 12/6/82; am 8/16/84; am and comp] (Auth: HRS §396-4) (Imp: HRS §396-4)

§12-60-2 Safety and health programs. (a) Scope and application. This [~~standard~~] section shall apply to all employers with employees doing business in the State.

- (1) Every employer shall comply with the state laws, standards, and rules regarding a safe place of employment and safe practices, and shall do everything reasonable and necessary to protect the life, safety, and health of the employees.
- (2) Employers involved with construction or related activities shall provide safe and healthful work places and practices that protect the employees and the affected general public as well.
- (3) Every employer shall provide safe work places and practices by elimination or reduction of existing or potential hazards. Elimination of existing or potential hazards

by design, process substitution, or other appropriate methods is preferred because it eliminates the need for further employee protection. When elimination is not feasible, reduction of existing or potential hazards to acceptable levels, using methods such as engineering or administrative controls, isolation, or guarding, shall be promptly used. When these methods are inadequate to reach acceptable levels, personal protective equipment shall be provided and used.

~~[Exception.]~~ Exception: Employers with less than ~~[25]~~ ten (10) employees need not comply with subsection (b)(1) ~~[below]~~.

(b) Employer duties and responsibilities. An employer subject to this standard shall meet the following requirements:

(1) Written safety and health program.

(A) The employer shall institute and maintain an effective safety and health program to identify, evaluate, and control workplace hazards. Employer safety and health programs which were developed prior to the promulgation of this ~~[standard]~~ section may be used to satisfy this requirement so long as they meet the criteria for an acceptable program set forth in subparagraph (B) ~~[below]~~.

(B) The program ~~[should]~~ shall at a minimum:

- (i) Set forth policies, procedures, and practices that recognize and protect employees from occupational safety and health hazards.
- (ii) Establish and communicate a clear goal for the safety and health program and the mechanisms ~~[which]~~ that will be utilized in meeting this goal.

- (iii) Provide for visible top management leadership in implementing the program and ensure that all workers at the site, including contract workers, are provided equally high quality safety and health protection, so that all workers will understand that management's commitment is serious.
- (iv) Provide for and encourage employee involvement in the structure and operation of the program and in decisions that affect their safety and health, so that they will commit their insight and energy to achieving the safety and health program's goal and objectives. Involvement shall be accomplished through employee collective bargaining units, where appropriate.
- (v) Assign and communicate responsibilities for all aspects of the safety and loss prevention program to managers, supervisors, and employees so that they all know and understand what is expected of them in the implementation of the program.
- (vi) Provide a system to hold managers, supervisors, and employees accountable for their responsibilities under the safety and health program.
- (vii) Provide a reliable system for employees to notify management personnel or safety and health committee members of conditions that appear hazardous or of [~~non-~~ compliance] noncompliance with the terms of the safety and health

- program without fear of reprisal and provide a mechanism to ensure timely and appropriate responses to correct these conditions.
- (ix) Provide a mechanism to investigate accidents and "near miss" incidents, so that the root cause and means for preventing a recurrence are identified. For the purposes of this [~~rule,~~] section, the term "accident" means any unexpected happening that interrupts the work sequence or process and that may result in injury, illness, or property damage.
 - (x) Provide a means to review injury and illness trends over time, so that patterns with common causes [~~can be~~] are identified and eliminated.
 - (xi) Establish a mechanism for the employer to conduct ongoing, periodic in-house safety and health inspections so that new or previously missed hazards or failures in controls are identified. Inspections shall be conducted with a frequency necessary to be effective.
 - (xii) Address the impact of emergency situations and develop written plans and procedures to insure employee safety during emergencies. For the purpose of this [~~standard,~~] section, the term "emergency situation" means an unforeseen single event or combination of events that calls for immediate action to prevent, control or contain injury or

- illness to person or damage to property.
- (xiii) Establish procedures for transmitting and enforcing safe work practices in the workplace through training, positive reinforcement, as a reward system, public recognition, etc., correction of unsafe performance, and, if necessary, reinforcement of work practices through a clearly defined and communicated disciplinary system.
- (C) The program shall be made available to the employees or their collective bargaining agent or both, upon request.
- (2) Safe work practices.
- (A) The employer shall eliminate or control all existing and potential hazards within the workplace in a timely manner, using one or more of the following:
 - (i) Engineering and work practice controls designed to control employee exposures to safety and health hazards by modifying the source to reduce exposure.
 - (ii) Administrative controls designed to control employee exposure to safety and health hazards.
 - (iii) Requirements for the distribution and proper use of personal protective equipment.
 - (iv) A program of medical examinations or evaluations conducted by a qualified physician or health practitioner when required by a standard.
 - (B) The employer shall ensure that practices are understood by all employees and are underscored through training, positive reinforcement,

- correction of unsafe performance, and, if necessary, through a clearly defined and communicated disciplinary system.
- (3) Periodic inspections. The employer shall conduct periodic in-house safety and health inspections so that new or previously missed hazards or failures in engineering, work practice, and administrative controls are identified. The in-house inspections will be conducted by individuals who are trained to recognize hazardous conditions, as members of the safety and health committee or a person designated and trained by the employer for the facility's safety and health program.
- (4) Safety and health training.
- (A) The employer shall develop and institute a safety and health training program for all employees so they have an understanding of the hazards to which they may be exposed, and the procedures or practices needed to protect them from these hazards.
 - (B) In addition, supervisors and managers shall be trained in the elements of the employer's safety and health program and in the specific responsibilities assigned to them under the program.
 - (C) The employer shall ensure that the supervisors and managers understand their responsibilities under the safety and health program and their importance to the safety and health of the workplace. In particular, the training for managers and supervisors shall enable them to:
 - (i) Recognize potential hazards;
 - (ii) Maintain safety and health protection in the work area; and
 - (iii) Reinforce employee training on the nature of the potential hazards and required protective measures.

§12-60-50

(c) The use of any machinery, tool, material, or equipment which is not in compliance with any applicable requirement of these standards is prohibited. The machine, tool, material, or equipment shall either be identified as unsafe by tagging or locking the controls to render them inoperable or shall be physically removed from its place of operation.

(d) The employer shall permit only those employees qualified by training or experience to operate equipment and machinery.

(e) For procedures in reporting accidents, consult [~~section 12-52-8.~~] chapter 12-52.1.

(f) All safety devices and safeguards in use shall be kept sound and operable.

(g) Any employee having knowledge of the existence of any unsafe device, practice, operation, safeguard, equipment, or condition shall promptly inform the supervisor or person in charge. A supervisor or person in charge to whose attention the existence of any unsafe device, practice, operation, safeguard, equipment, or condition is called shall take immediate steps to correct the unsafe condition or practice. [Eff 12/6/82; am 8/16/84; am 9/21/96; am and comp] (Auth: HRS §396-4) (Imp: HRS §396-4)

§12-60-3 Employee responsibilities. The employee shall not knowingly perform work in an unsafe manner or in an unsafe environment without the safeguards provided for in these standards. The employee shall not tamper with or render ineffective any safety device or safeguard and shall use the safety devices provided for personal protection. [Eff 12/6/82; comp] (Auth: HRS §396-4) (Imp: HRS §396-4)

\$12-60-4 Removal of safety devices. No person shall remove, displace, damage, destroy, or carry off any safety device, safeguard, notice, or warning furnished for use in any employment or place of employment. [Eff 12/6/82; comp]
(Auth: HRS §396-4) (Imp: HRS §396-4)

\$12-60-5 Use of intoxicants or drugs. The use of intoxicants or harmful drugs while on duty is prohibited. No person shall be permitted to work under the influence of liquor or drugs and shall be removed from the work premises if found under the influence of liquor or drugs. [Eff 12/6/82; comp] (Auth: HRS §396-4) (Imp: HRS §396-4)

\$12-60-6 Requirements of competence. When work is to be performed by or under the supervision of a designated person, that person shall have the degree of competence necessary to perform or direct the work in a safe manner. [Eff 12/6/82; comp]
(Auth: HRS §396-4) (Imp: HRS §396-4)

\$12-60-7 Requirement of quality. Materials, devices, structures, and methods and procedures of operation which are required by these standards, and which are described by general descriptive terms such as adequate, proper, sufficient, and the like, shall be of such kind and quality as a reasonable and prudent person experienced in the work would require in order to effect a safe operation. [Eff 12/6/82; am and comp] (Auth: HRS §396-4) (Imp: HRS §396-4)

~~§12-60-8 thru~~ §§12-60-8 to 12-60-49 RESERVED.

§12-60-50 Standards. (a) Incorporation of federal standard. Title 29, Part 1910 of the Code of Federal Regulations, [2012] 2017 Edition published as of July 1, [2012,] 2017, by the U.S. Government Printing Office, U.S. Superintendent of Documents, Washington, DC 20402-0001, is made a part of this chapter except as provided in [subsection] subsections (b) through (d).

(b) State specific definitions. The following definitions are in addition to those found in section 12-50-2 and subsection (a). Where a definition exists in both subsection (a) and this subsection, the definition contained in this subsection supersedes the definition in subsection (a). This State's adoption of [~~29 CFR Part 1910.2~~] 29 C.F.R. §1910.2, Definitions, is amended by adding the following definitions:

"Access" means the right and opportunity to examine and copy.

"Analysis using exposure or medical records" means any compilation of data, or any research, or statistical or other studies based at least in part on information collected from individual employee exposure or medical records or information collected from health insurance claims records, [~~provided that~~] if either the analysis has been reported to the employer or no further work is currently being done by the person responsible for preparing the analysis.

"ANSI Z9.2" means ANSI Z9.2-1979, Fundamentals Governing the Design and Operation of Local Exhaust Systems.

"ANSI Z88.2" means ANSI Z88.2-1984, Practices for Respiratory Protection.

"Coal tar pitch volatiles" [~~mean,~~] means, as used in Exhibit A, entitled "Limits for Air Contaminants", and dated July 1, 2017, which is made part of this chapter and located at the end of this chapter, the

fused polycyclic hydrocarbons which volatilize from the distillation residues of coal, petroleum (excluding asphalt, CAS 8052-42-4 and CAS 64742-93-4), wood, and other organic matter.

"Designated [~~representative,~~] representative" means any individual or organization to whom an employee gives written authorization to exercise a right of access. For [~~the purpose of~~] access to employee exposure records and analyses using exposure or medical records, a recognized or certified collective-bargaining agent shall be treated automatically as a designated representative without regard to written employee authorization.

"Employee exposure record" means a record containing any of the following kinds of information:

- (1) Environmental (workplace) monitoring or measuring of a toxic substance or a harmful physical agent, including personal, area, grab, or wipe sampling, or any other form of sampling, as well as related collection and analytical methodologies, calculations, and other background data relevant to interpretation of the results obtained;
- (2) Biological monitoring results which directly assess the absorption of a substance or agent by body systems (e.g., the level of a chemical in the blood, urine, breath, hair, fingernails, etc.) but not including results which assess the biological effect of a substance or agent or which assess an employee's use of alcohol or drugs;
- (3) Material safety-data sheets; and
- (4) A chemical inventory or any other record which reveals where and when used and the identity (e.g., chemical, common, or trade name) of a toxic substance or harmful physical agent.

"Employee medical record" means a record concerning the health status of an employee, which is made or maintained by a physician or nurse, or any other health care personnel or technician, including:

- (1) Medical and employment questionnaires or histories (including job description and occupational exposures);
- (2) The results of medical examinations (pre-employment, pre-assignment, periodic, or episodic) and laboratory tests (including chest and other X-ray examinations taken for the purposes of establishing a [~~base-line~~] baseline or detecting occupational illness, and all biological monitoring not defined as an "employee exposure record");
- (3) Medical opinions, diagnoses, progress notes, and recommendations;
- (4) Descriptions of treatments and prescriptions;
- (5) First-aid records; and
- (6) Employee medical complaints; but does not include medical information in the form of:
 - (A) Physical specimens (e.g., blood or urine samples) [~~which~~] that are routinely discarded as a part of normal medical practice; [~~or~~]
 - (B) Records concerning health insurance claims if maintained separately from the employer's medical program and its records, and not accessible to the employer by employee name or other direct personal identifier (e.g., social security number, payroll number, etc.); [~~or~~]
 - (C) Records created solely in preparation for litigation which are privileged from discovery under the applicable rules of procedure or evidence; or
 - (D) Records concerning voluntary employee assistance programs (alcohol, drug abuse, or personal counseling programs) if maintained separately from the employer's medical program and its records.

"Excursion factor" means the magnitude of the permissible excursion above the PEL-TWA for those substances not preceded by a "C" in Exhibit A entitled

"Limits for Air Contaminants", and dated July 1, 2017, which is made part of this chapter and located at the end of this chapter, and not found in Exhibit B entitled "More Limits for Air Contaminants", and dated July 1, 2017, which is made part of this chapter and located at the end of this chapter.

"Exposure" or "exposed" means that an employee is subjected to a toxic material or harmful physical agent [~~in the course of~~] during employment through any route of entry, such as inhalation, ingestion, skin contact, or absorption, and includes past exposure and potential exposure.

"Health professional" means a physician, occupational health nurse, industrial hygienist, toxicologist, or epidemiologist, providing medical or other occupational health services to exposed employees.

"Permissible Exposure Limit (PEL)" means the airborne concentrations of substances to which it is believed that nearly all workers may be exposed with no adverse effect.

"Permissible Exposure Limit-Ceiling (PEL-C)" means the concentration that shall not be exceeded even instantaneously. The PEL-C is the employee's exposure, which shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, then the ceiling shall be assessed as a 15-minute time weighted average exposure, which shall not be exceeded at any time over a working day.

"Permissible Exposure Limit-Short Term Exposure Level (PEL-STEL)" means the employee's [~~15-minute~~] fifteen (15) minute time weighted average exposure, which shall not be exceeded at any time during a workday unless another time limit is specified in a parenthetical notation below the limit. If another [~~time~~] period is specified, the time weighted average exposure over that time limit shall not be exceeded at any time during the workday.

"Permissible Exposure Limit-Time Weighted Average (PEL-TWA)" means the employee's average airborne exposure, which shall not be exceeded in any [~~7-~~]

seven (7) to [8-hour] eight (8) hour work shift of a
[40-hour] forty (40) hour workweek.

"Record" means any item, collection, or grouping of information regardless of the form or process by which it is maintained (e.g., paper document, microfiche, microfilm, X-ray film, or automated data processing).

"Specific chemical identity" means the chemical name, Chemical Abstracts Service (CAS) Registry Number, or any other information that reveals the precise chemical designation of the substance.

"Specific written consent" means a written authorization containing:

- (1) The name and signature of the employee authorizing the release of medical information;
- (2) The date of the written authorization;
- (3) The name of the individual or organization that is authorized to release the medical information;
- (4) The name of the designated representative (individual or organization) that is authorized to receive the released information;
- (5) A general description of the medical information that is authorized to be released;
- (6) A general description of the purpose for the release of the medical information; and
- (7) A date or condition upon which the written authorization will expire (if less than one year); but [A] a written authorization does not authorize the release of medical information not in existence on the date of written authorization, unless the release of future information is expressly authorized, and does not operate for more than one year from the date of written authorization. A written authorization may be revoked in writing prospectively at any time.

"Toxic material or harmful physical agent" means any chemical substance, biological agent (bacteria,

virus, fungus, etc.), or physical stress (noise, heat, cold, vibration, repetitive motion, ionizing and non-ionizing radiation, hypo- or hyperbaric pressure, etc.) which:

- (1) Is listed in the latest printed edition of the National Institute for Occupational Safety and Health (NIOSH) Registry of Toxic Effects of Chemical Substances (RTECS); ~~[ex]~~
- (2) Has yielded positive evidence of an acute or chronic health hazard in testing conducted by, or known to, the employer; or
- (3) Is the subject of a material safety-data sheet kept by or known to the employer indicating that the material may pose a hazard to human health.

"Trade secret" means any confidential formula, pattern, process, device, or information or compilation of information that is used in an employer's business and that gives the employer an opportunity to obtain an advantage over competitors who do not know or use it.

(c) State specific standards for Occupational Noise Exposure. The following standards are in effect in addition to those adopted ~~[by]~~ in subsection (a). Where standards on ~~[a particular]~~ an item exist in both subsection (a) and this subsection, the standards contained in this subsection supersede the standards in subsection (a).

- (1) 29 ~~[CFR 1910.95]~~ C.F.R. §1910.95 Table G-16 is amended to read as follows:
- (2)

[^u]TABLE G-16-PERMISSIBLE NOISE EXPOSURES¹

Duration per day, hours	Sound level dBA slow response
-------------------------	----------------------------------

8.....	90
6.....	92
4.....	95
3.....	97
2.....	100

1-1/2.....	102
1.....	105
1/2.....	110
1/4 or less.....	115

¹When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect shall be considered, rather than the individual effect of each. If the sum of the following fractions: $C1/T1+C2/T2+Cn/Tn$ exceeds unity, then~~[7]~~ the mixed exposure shall be considered to exceed the limit value. Cn indicates the total time of exposure at a specific noise level, ~~[an]~~ a Tn indicates the total time of exposure permitted at that level. Exposure to impulsive or impact noise shall not exceed 140 dB peak sound pressure level.~~[4]~~

(3) ~~[29 CFR 1910.95(e)(1)]~~ 29 C.F.R. §1910.95(c)(1) is amended to read as follows:

~~[(A)]~~ The employer shall administer a continuing, effective hearing conservation program, as described in paragraphs (c) through (o) of this section, whenever employee noise exposures equal or exceed an ~~[8-hour]~~ eight (8) hour time-weighted average sound level (TWA) of ~~[85]~~ eighty-five (85) decibels measured on the A scale (slow response) or a dose of 50 percent. For purposes of the hearing conservation program, employee noise exposures shall be computed in accordance with appendix (a) and table G-16a, and without regard to any attenuation provided by ~~[the use of]~~ using personal protective equipment.

(d) State specific standards for Toxic and Hazardous Substances. The following standards are in effect in addition to those adopted ~~[by]~~ in subsection (a). Where standards on ~~[a-particular]~~ an item exist in both subsection (a) and this subsection, the standards contained in this subsection supersede the standards in subsection (a).

(1) [~~29 CFR 1910.1000~~] 29 C.F.R. §1910.1000 is amended by adding the following:

- (A) All employers shall measure, monitor, and record employee exposure to toxic materials or harmful physical agents. The measurement shall determine if any employee may be exposed to concentrations of the toxic materials or harmful physical agents at or above the permissible exposure limit. The determination shall be made each time there is a change in production, process, or control measures which could result in an increase in concentrations of these materials or agents. A written record of the determination shall be made and shall contain at least:
 - (i) Any information, observations, or calculations that may indicate employee exposure to toxic or potentially toxic materials or harmful physical agents;
 - (ii) Any measurements taken;
 - (iii) Any employee complaints of symptoms that may be attributable to exposure to toxic or potentially toxic materials or harmful physical agents;
 - (iv) Date of determination, work being performed at the time, location within work site, name, and social security number of each employee considered; and
 - (v) Any other information that may be relevant to employee exposure.
- (B) When medical examinations are appropriate for adequate employee protection, the employer shall, at the employer's cost, provide examinations to best determine the effect of toxic

material or harmful physical agents on the health of employees.

(2) [~~29 CFR 1910.1000(a)~~] 29 C.F.R.

§1910.1000(a) is amended to read as follows:

- (A) Air Contaminants Limits Column. An employee's exposure to any substance listed in Exhibit A, entitled "Limits for Air Contaminants", and dated July 1, 2017, which is made part of this chapter and located at the end of this chapter, shall not exceed the PEL-TWA, PEL-STEL and PEL-Ceiling specified for that substance shown in Exhibit A.
- (i) Because many industrial exposures are not continuous, but instead are short-term, or intermittent, to which the PEL-TWAs cannot be applied, PEL-STELs for selected air contaminants are listed in Exhibit A, entitled "Limits for Air Contaminants", and dated July 1, 2017, which is made part of this chapter and located at the end of this chapter.
- (ii) The PEL-STELs listed in Exhibit A, entitled "Limits for Air Contaminants", and dated July 1, 2017, which is made part of this chapter and located at the end of this chapter, are [~~15-minute~~] fifteen (15) minute time-weighted average (TWA) exposures that shall not be exceeded at any time during a workday.
- (iii) Exposures at the PEL-STEL shall not be longer than [~~15-minutes~~] fifteen (15) minutes and shall not be repeated more than four times per day. There shall be at least [~~60~~] sixty (60) minutes between

successive exposures at the PEL-
STEL.

- (B) Skin Designation. To prevent or reduce skin absorption, an employee's skin exposure to substances listed in Exhibit A, entitled "Limits for Air Contaminants", and dated July 1, 2017, which is made part of this chapter and located at the end of this chapter, with an "X" in the Skin Designation columns shall be prevented or reduced to the extent necessary in the circumstances through the use of gloves, coveralls, goggles, or other appropriate personal protective equipment, engineering controls, or work practices.
- (3) [~~29 CFR 1910.1000(b)~~] 29 C.F.R. §1910.1000(b) is amended to read as follows:

~~[(A) Exhibit B.]~~

~~[(i)]~~ (A) PEL-TWA. An employee's exposure to any material listed in Exhibit A, entitled "Limits for Air Contaminants", and dated July 1, 2017, which is made part of this chapter and located at the end of this chapter, in any ~~[7 to 8 hour]~~ seven (7) to eight (8) hour work shift of a [40-hour] forty (40) hour workweek, shall not exceed the PEL-TWA given for that material in Exhibit B, Exhibit B entitled "More Limits for Air Contaminants", and dated July 1, 2017, which is made part of this chapter and located at the end of this chapter.

~~[(ii)]~~ (B) Acceptable ceiling concentration. An employee's exposure to a material listed in Exhibit B, entitled "More Limits for Air Contaminants", and dated July 1, 2017, which is made part of this chapter and

located at the end of this chapter,
shall not exceed at any time during a
~~[7- to 8-hour]~~ seven (7) to eight (8)
hour work shift the acceptable ceiling
concentration given for that material
in the table."

- ~~[(4) The incorporation of Exhibit A at the end of section 12-60-50 entitled ["] Limits for Air Contaminants " dated July 1, 2011, is made a part of this chapter.~~
- ~~(5) The incorporation of Exhibit B at the end of section 12-60-50 entitled " More Limits for Air Contaminants" dated July 1, 2011, is made a part of this chapter.] [Eff 2/13/12; am 11/2/12; am and comp]~~
(Auth: HRS: §396-4) (Imp: HRS §396-4)

Historical Note: §12-60-50 is based substantially upon Part 2. [Eff 6/8/82; 7/24/94; am 9/30/94; am 8/10/95; am 1/16/96; am 2/8/97; am 10/23/97; am 7/6/98; am 3/29/99; am 7/6/99; am 2/14/00; am 12/29/00; am 12/29/01; am 5/21/04; am 5/5/05; am 9/1/05; am 3/31/06; am 12/21/06; am 4/19/07; am 8/29/07; am 5/2/08; am 7/27/09; R 2/13/12 and Part 8 [Eff 7/12/82; am 5/28/83; am 6/16/84; am 8/5/88; am 3/22/91; am 6/8/92; am 2/26/93; am 7/25/94; am 8/10/95; am 1/26/96; am 9/21/96; am 11/16/96; am 2/8/97; am 5/2/97; am 7/10/97; am 4/11/98; am 7/6/98; am 3/29/99; am 12/29/00; am 8/9/01; am 12/29/01; am 5/21/04; am 3/31/06; am 12/21/06; 4/19/07; am 7/27/09; R 2/13/12]

Exhibit A (July 1, 2017)
Limits for Air Contaminants¹

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA ^a		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Acetaldehyde	75-07-0	100	180	150	270	-	-	-
Acetic acid	64-19-7	10	25	15	37	-	-	-
Acetic anhydride	108-24-7	-	-	-	-	5	20	-
Acetone	67-64-1	750	1,780	1,000	2,375	-	-	-
Acetonitrile	75-05-8	40	70	60	105	-	-	X
2-Acetylaminofluorene	53-96-3	See §1910.1003						
Acetylene dichloride		See 1,2-Dichloroethylene						
Acetylene tetrabromide	79-27-6	1	14	1.5	20	-	-	-
Acetylsalicylic acid (Aspirin)	50-78-2	-	5	-	-	-	-	-
Acrolein	107-02-8	0.1	0.25	0.3	0.8	-	-	-
Acrylamide	79-06-1	-	0.03	-	-	-	-	X
Acrylic acid	79-10-7	2	6	-	-	-	-	X
Acrylonitrile	107-13-1	See §1910.1045						
Aldrin	309-00-2	-	0.25	-	0.75	-	-	X
Allyl alcohol	107-18-6	2	5	4	10	-	-	X
Allyl chloride	107-05-1	1	3	2	6	-	-	-
Allyl glycidyl ether (AGE)	106-92-3	5	22	10	44	-	-	X
Allyl propyl disulfide	2179-59-1	2	12	3	18	-	-	-
∇- Alumina	1344-28-1							
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Aluminum (as Al)	7429-90-5							
Metal & oxide								
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Pyro powders		-	5	-	-	-	-	-
Welding fumes		-	5	-	-	-	-	-
Soluble salts		-	2	-	-	-	-	-
Alkyls		-	2	-	-	-	-	-
4-Aminodiphenyl	92-67-1	See §1910.1003						
2-Aminoethanol		See Ethanolamine						
2-Aminopyridine	504-29-0	0.5	2	2	4	-	-	-
Amitrole	61-82-5	-	0.2	-	-	-	-	-
Ammonia	7664-41-7	25	18	35	27	-	-	-
Ammonium chloride Fume	12125-02-9	-	10	-	20	-	-	-
Ammonium sulfamate	7773-06-0							
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
n-Amyl acetate	628-63-7	100	525	150	800	-	-	-
sec-Amyl acetate	626-38-0	125	650	150	800	-	-	-
Aniline and homologs	62-53-3	2	8	5	20	-	-	X

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA ^a		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Anisidine (o-, p-isomers)	29191-52-4	0.1	0.5	-	-	-	-	X
Antimony and compounds (as Sb)	7440-36-0	-	0.5	-	-	-	-	-
Antimony trioxide Handling and use, as Sb	1309-64-4	-	0.5	-	-	-	-	-
ANTU (Alpha Naphthylthiourea)	86-88-4	-	0.3	-	0.9	-	-	-
Arsenic, organic compounds (as As)	7440-38-2	-	0.2	-	-	-	-	-
Arsenic, inorganic compounds, (as As)	7440-38-2	See §1910.1018						-
Arsine	7784-42-1	0.05	0.2	-	-	-	-	-
Asbestos	Varies	See §1910.1001 and 1926.1101						-
Asphalt (petroleum) fumes	8052-42-4	-	5	-	10	-	-	-
Atrazine	1912-24-9	-	5	-	-	-	-	-
Azinphos-methyl	86-50-0	-	0.2	-	0.6	-	-	X
Barium, soluble compounds (as Ba)	7440-39-3	-	0.5	-	-	-	-	-
Barium sulfate	7727-43-7	-	-	-	-	-	-	-
Total dust		-	10	-	-	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Benomyl	17804-35-2	-	-	-	-	-	-	-
Total dust		0.8	10	1.3	15	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Benzene; see §1910.1028	71-43-2	See Exhibit B for operations excluded						-
Benzidine	92-87-5	See §1910.1003						-
p-Benzoquinone		See Quinone						-
Benzo(a)pyrene		See Coal tar pitch volatiles						-
Benzoyl peroxide	94-36-0	-	5	-	-	-	-	-
Benzyl chloride	100-44-7	1	5	-	-	-	-	-
Beryllium and beryllium compounds (as Be)	7440-41-7	0.0002		0.002		0.005		-
				(see Exhibit B)				
Biphenyl		See Diphenyl						-
Bismuth telluride, Undoped	1304-82-1	-	-	-	-	-	-	-
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Bismuth telluride, Se-doped		-	5	-	10	-	-	-
Borates, tetra, sodium salts		-	-	-	-	-	-	-

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA*		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Anhydrous	1330-43-4	-	1	-	-	-	-	-
Decahydrate	1303-96-4	-	5	-	-	-	-	-
Pentahydrate	12179-04-3	-	1	-	-	-	-	-
Boron oxide	1303-86-2	-	-	-	-	-	-	-
total dust		-	10	-	20	-	-	-
Respirable fraction		-	-	-	-	-	-	-
Boron tribromide	10294-33-4	-	-	-	-	1	10	-
Boron trifluoride	7637-07-2	-	-	-	-	1	3	-
Bromacil	314-40-9	1	10	2	20	-	-	-
Bromine	7726-95-6	0.1	0.7	0.3	2	-	-	-
Bromine pentafluoride	7789-30-2	0.1	0.7	0.3	2	-	-	-
Bromoform	75-25-2	0.5	5	-	-	-	-	X
Butadiene (1,3-Butadiene)	106-99-0	See §1910.1051						
Butane	106-97-8	800	1,900	-	-	-	-	-
Butanethiol		See Butyl mercaptan						
2-Butanone (Methyl ethyl ketone) (MEK)	78-93-3	200	590	300	885	-	-	-
2-Butoxyethanol	111-76-2	25	120	75	360	-	-	X
n-Butyl-acetate	123-86-4	150	710	200	950	-	-	-
sec-Butyl acetate	105-46-4	200	950	250	1,190	-	-	-
tert-Butyl acetate	540-88-5	200	950	250	1,190	-	-	-
Butyl acrylate	141-32-2	10	55	-	-	-	-	-
n-Butyl alcohol	71-36-3	-	-	-	-	50	150	X
sec-Butyl alcohol	78-92-2	100	305	150	455	-	-	-
tert-Butyl alcohol	75-65-0	100	300	150	450	-	-	-
Butylamine	109-73-9	-	-	-	-	5	15	X
tert-Butyl chromate (as CrO ₃)	1189-85-1	-	-	-	-	-	-	X
		See §1910.1026 and §1926.1126						
n-Butyl glycidyl ether (BGE)	2426-08-6	25	135	-	-	-	-	-
n-Butyl lactate	138-22-7	5	25	-	-	-	-	-
Butyl mercaptan	109-79-5	0.5	1.5	-	-	-	-	-
o-sec Butylphenol	89-72-5	5	30	-	-	-	-	X
p-tert-Butyltoluene	98-51-1	10	60	20	120	-	-	-
Cadmium fume (as Cd)	7440-43-9	-	-	-	-	-	0.05	-
Cadmium dust (as Cd)	7440-43-9	-	0.05	-	-	-	0.2	-
Calcium carbonate	1317-65-3	-	-	-	-	-	-	-
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Calcium cyanamide	156-62-7	-	0.5	-	1	-	-	-
Calcium hydroxide	1305-62-0	-	5	-	-	-	-	-
Calcium oxide	1305-78-8	-	2	-	-	-	-	-
Calcium silicate	1344-95-2	-	-	-	-	-	-	-
Total dust		-	10	-	-	-	-	-

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA*		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Respirable fraction		-	5	-	-	-	-	-
Calcium sulfate	7778-18-9	-	-	-	-	-	-	-
Total dust		-	10	-	-	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Camphor, synthetic	76-22-2	0.3	2	-	-	-	-	-
Caprolactam	105-60-2	-	-	-	-	-	-	-
Dust		-	1	-	3	-	-	-
Vapor & Aerosol		5	20	-	40	-	-	-
Captafol (DifolatanR)	2425-06-1	-	0.1	-	-	-	-	-
Captan	133-06-2	-	5	-	15	-	-	-
Carbaryl (Sevin ^R)	63-25-2	-	5	-	10	-	-	-
Carbofuran (Furadan ^R)	1563-66-2	-	0.1	-	-	-	-	-
Carbon black	1333-86-4	-	3.5	-	7	-	-	-
Carbon dioxide	124-38-9	5,000	9,000	15,000	27,000	-	-	-
Carbon disulfide	75-15-0	4	12	12	36	-	-	X
Carbon monoxide	630-08-0	35	40	-	-	200	229	-
Carbon tetrabromide	558-13-4	0.1	1.4	0.3	4	-	-	X
Carbon tetrachloride	56-23-5	2	12.6	-	-	-	-	-
Carbonyl fluoride	353-50-4	2	5	5	15	-	-	-
Catechol (Pyrocatechol)	120-80-9	5	20	-	-	-	-	X
Cellulose	9004-34-6	-	-	-	-	-	-	-
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Cesium hydroxide	21351-79-1	-	2	-	-	-	-	-
Chlordane	57-74-9	-	0.5	-	2	-	-	X
Chlorinated camphene	8001-35-2	-	0.5	-	1	-	-	X
Chlorinated diphenyl Oxide	55720-99-5	-	0.5	-	2	-	-	-
Chlorine	7782-50-5	0.5	1.5	1	3	-	-	-
Chlorine dioxide	10049-04-4	0.1	0.3	0.3	0.9	-	-	-
Chlorine trifluoride	7790-91-2	-	-	-	-	0.1	0.4	-
Chloroacetaldehyde	107-20-0	-	-	-	-	1	3	-
Chloroacetone	78-95-5	-	-	-	-	1	4	X
α-Chloroacetophenone (Phenacyl chloride)	532-27-4	0.05	0.3	-	-	-	-	-
Chloroacetyl chloride	79-04-9	0.05	0.2	-	-	-	-	-
Chlorobenzene	108-90-7	75	350	-	-	-	-	-
o-Chlorobenzylidene malonitrile	2698-41-1	-	-	-	-	0.05	0.4	X
Chlorobromomethane	74-97-5	200	1,050	250	1,300	-	-	-
2-Chloro-1,3-Butadiene		see β-Chloroprene						
Chlorodifluoromethane	75-45-6	1,000	3,500	1,250	4,375	-	-	-

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA ^a		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Chlorodiphenyl (42% chlorine) (PCB)	53469-21-9	-	1	-	2	-	-	X
Chlorodiphenyl (54% Chlorine) (PCB)	11097-69-1	-	0.5	-	1	-	-	X
1-Chloro, 2,3-epoxypropane		See Epichlorohydrin						
2-Chloroethanol		See Ethylene chlorohydrin						
Chloroethylene		See Vinyl chloride						
Chloroform (Trichloromethane)	67-66-3	2	9.78	-	-	-	-	-
bis(Chloromethyl) ether	542-88-1	see §1910.1003						
Chloromethyl methyl ether	107-30-2	see §1910.1003						
1-Chloro-1-nitropropane	600-25-9	2	10	-	-	-	-	-
Chloropentafluoroethane	76-15-3	1,000	6,320	-	-	-	-	-
Chloropicrin	76-06-2	0.1	0.7	0.3	2	-	-	-
β-Chloroprene	126-99-8	10	35	-	-	-	-	X
o-Chlorostyrene	2039-87-4	50	285	75	428	-	-	-
o-Chlorotoluene	95-49-8	50	250	75	375	-	-	X
2-Chloro-6-(trichloromethyl) pyridine	1929-82-4							
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Chlorpyrifos	2921-88-2	-	0.2	-	0.6	-	-	X
Chromic acid and chromates (as CrO ₃)	Varies with compound	-	-	-	-	-	0.1	-
Chromite ore processing (Chromate), (as Cr)		-	0.05	-	-	-	-	-
Chromium (II)	7440-47-3	-	0.5	-	-	-	-	-
Chromium (III) compounds (as Cr)	7440-47-3	-	0.5	-	-	-	-	-
Chromium (VI) Water soluble & insoluble		See §1910.1026 and §1926.1126						-
Chromium metal (as Cr)	7440-47-3	-	0.5	-	-	-	-	-
Chromyl chloride	14977-61-8	0.025	0.15	-	-	-	-	-
Chrysene		See Coal tar pitch volatiles						
Clodolol	2971-90-6							
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA*		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Coal dust (less than 5% SiO ₂), Respirable fraction		-	2	-	-	-	-	-
Coal dust (greater than or equal to 5% SiO ₂), Respirable quartz fraction		-	0.1	-	-	-	-	-
Coal tar pitch volatiles (benzene soluble fraction), anthracene, BaP, phenanthrene, acridine, chrysene, pyrene	65966-93-2	-	0.2f	-	-	-	-	-
Cobalt metal, dust, and fume (as Co)	7440-48-4	-	0.05	-	-	-	-	-
Cobalt carbonyl (as Co)	10210-68-1	-	0.1	-	-	-	-	-
Cobalt hydrocarbonyl (as Co)	16842-03-8	-	0.1	-	-	-	-	-
Coke oven emissions								
Copper	7440-50-8							
Fume (as Cu)		-	0.1	-	-	-	-	-
Dusts and mists (as Cu)		-	1	-	2	-	-	-
Cotton dust (raw)								
Crag herbicide (Sesone) (Sodium 2,4-dichlorophenoxyethyl sulfate)	136-78-7							
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Cresol, all isomers	1319-77-3	5	22	-	-	-	-	X
Crotonaldehyde	123-73-9	2	6	6	18	-	-	-
	4170-30-3							
Crufomate	299-86-5	-	5	-	20	-	-	-
Cumene	98-82-8	50	245	75	365	-	-	X
Cyanamide	420-04-2	-	2	-	-	-	-	-
Cyanides (as CN)	Varies with compound	-	5	-	-	-	-	X
Cyanogen	460-19-5	10	20	-	-	-	-	-
Cyanogen chloride	506-77-4	-	-	-	-	0.3	0.6	-
Cyclohexane	110-82-7	300	1,050	375	1,300	-	-	-
Cyclohexanol	108-93-0	50	200	-	-	-	-	X
Cyclohexanone	108-94-1	25	100	100	400	-	-	X
Cyclohexene	110-83-8	300	1,015	-	-	-	-	-

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA*		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Cyclohexylamine	108-91-8	10	40	-	-	-	-	-
Cyclonite	121-82-4	-	1.5	-	3	-	-	X
Cyclopentadiene	542-92-7	75	200	75	200	-	-	-
Cyclopentane	287-92-3	600	1,720	900	2,580	-	-	-
Cyhexatin	13121-70-5	-	5	-	10	-	-	-
2,4-D (Dichloryl-phenoxylacetic acid)	94-75-7	-	10	-	20	-	-	-
DDT (Dichlorodiphenyl-trichloroethane)	50-29-3	-	1	-	3	-	-	X
Decaborane	17702-41-9	0.05	0.3	0.15	0.9	-	-	X
Demeton (Systox ^R)	8065-48-3	-	0.1	0.03	0.3	-	-	X
Diacetone alcohol (4-hydroxy-4-methyl-2-pentanone)	123-42-2	50	240	75	360	-	-	-
1,2-Diaminoethane		See Ethylenediamine						
Diazinon	333-41-5	-	0.1	-	0.3	-	-	X
Diazomethane	334-88-3	0.2	0.4	-	-	-	-	-
Diborane	19287-45-7	0.1	0.1	-	-	-	-	-
1,2-Dibromo-3-chloropropane	96-12-8	See §1910.1044						
2-N-Dibutylaminoethanol	102-81-8	2	14	4	28	-	-	X
Dibutyl phosphate	107-66-4	1	5	2	10	-	-	-
Dibutyl phthalate	84-74-2	-	5	-	10	-	-	-
Dichloroacetylene	7572-29-4	-	-	-	-	0.1	0.4	-
o-Dichlorobenzene	95-50-1	-	-	-	-	50	300	-
p-Dichlorobenzene	106-46-7	75	450	110	675	-	-	-
3,3'-Dichlorobenzidine	91-94-1	See §1910.1003						
Dichlorodifluoromethane	75-71-8	1,000	4,950	1,250	6,200	-	-	-
1,3-Dichloro-5,5-dimethyl hydantoin	118-52-5	-	0.2	-	0.4	-	-	-
1,1-Dichloroethane	75-34-3	100	400	250	1,010	-	-	-
1,2-Dichloroethylene	540-59-0	200	790	250	1,000	-	-	-
Dichloroethyl ether	111-44-4	5	30	10	60	-	-	X
Dichloromethane		See Methylene chloride.						
Dichloromonofluoromethane	75-43-4	10	40	-	-	-	-	-
1,1-Dichloro-1-nitroethane	594-72-9	2	10	10	60	-	-	-
1,2-Dichloropropane		See Propylene dichloride						
1,3-Dichloropropene	542-75-6	1	5	-	-	-	-	X
2,2-Dichloropropionic acid	75-99-0	1	6	-	-	-	-	-

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA*		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Dichlorotetrafluoroethane	76-14-2	1,000	7,000	1,250	8,750	-	-	-
Dichlorvos (DDVP)	62-73-7	0.1	1	0.3	3	-	-	X
Dicrotophos	141-66-2	-	0.25	-	-	-	-	X
Dicyclopentadiene	77-73-6	5	30	-	-	-	-	-
Dicyclopentadienyl iron	102-54-5	-	-	-	-	-	-	-
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Dieldrin	60-57-1	-	0.25	-	0.75	-	-	X
Diethanolamine	111-42-2	3	15	-	-	-	-	-
Diethylamine	109-89-7	10	30	25	75	-	-	-
2-Diethylaminoethanol	100-37-8	10	50	-	-	-	-	X
Diethylene triamine	111-40-0	1	4	-	-	-	-	-
Diethyl ether		See Ethyl ether						
Diethyl ketone	96-22-0	200	705	-	-	-	-	-
Diethyl phthalate	84-66-2	-	5	-	10	-	-	-
Difluorodibromomethane	75-61-6	100	860	150	1,290	-	-	-
Diglycidyl ether (DGE)	2238-07-5	0.1	0.5	-	-	-	-	-
Dihydroxybenzene		See Hydroquinone						
Diisobutyl ketone	108-83-8	25	150	-	-	-	-	-
Diisopropylamine	108-18-9	5	20	-	-	-	-	X
4-Dimethylaminoazobenzene	60-11-7	See §1910.1003						
Dimethoxymethane	109-87-5							
Dimethyl acetamide	127-19-5	10	35	15	50	-	-	X
Dimethylamine	124-40-3	10	18	10	50	-	-	-
Dimethylaminobenzene		See Xylidine						
Dimethylaniline (N-Dimethylaniline)	121-69-7	5	25	10	50	-	-	X
Dimethylbenzene		See Xylene						
Dimethyl-1, 2-dibromo-2,2-dichloroethyl phosphate	300-76-5	-	3	-	-	-	-	X
Dimethylformamide	68-12-2	10	30	20	60	-	-	X
2,6-Dimethyl-4-heptanone		See Diisobutyl ketone						
1,1-Dimethylhydrazine	57-14-7	0.5	1	1	2	-	-	X
Dimethylphthalate	131-11-3	-	5	-	10	-	-	-
Dimethyl sulfate	77-78-1	0.1	0.5	-	-	-	-	X
Dinitolmide (3,5-Dinitro-o-toluamide)	148-01-6	-	5	-	10	-	-	-

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA*		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Dinitrobenzene (all isomers)	528-29-0	0.15	1	0.5	1	-	-	X
(alpha-)	99-65-0							
(meta-)	100-25-4							
(para-)								
Dinitro-o-cresol	534-52-1	-	0.2	-	0.6	-	-	X
Dinitrotoluene	25321-14-6	-	1.5	-	5	-	-	X
Dioxane (Diethylene dioxide)	123-91-1	25	90	-	-	-	-	X
Dioxathion (Delnav)	78-34-2	-	0.2	-	-	-	-	X
Diphenyl (Biphenyl)	92-52-4	0.2	1.5	0.6	4	-	-	-
Diphenylamine	122-39-4	-	10	-	20	-	-	-
Diphenylmethane diisocyanate		See Methylene bisphenyl isocyanate						
Dipropylene glycol methyl ether	34590-94-8	100	600	150	900	-	-	X
Dipropyl ketone	123-19-3	50	235	-	-	-	-	-
Diquat	85-00-7	-	0.5	-	1	-	-	-
Di-sec-octyl phthalate (Di-2-ethylhexyl-phthalate)	117-81-7	-	5	-	10	-	-	-
Disulfiram	97-77-8	-	2	-	5	-	-	-
Disulfoton	298-04-4	-	0.1	-	0.3	-	-	X
2,6-Di-tert-butyl-p-cresol	128-37-0	-	10	-	20	-	-	-
Diuron	330-54-1	-	10	-	-	-	-	-
Divinyl benzene	1321-74-0	10	50	-	-	-	-	-
Emery	112-62-9							
Total dust		-	10	-	-	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Endosulfan	115-29-7	-	0.1	-	0.3	-	-	X
Endrin	72-20-8	-	0.1	-	0.3	-	-	X
Epichlorohydrin	106-89-8	2	8	-	-	-	-	X
EPN	2104-64-5	-	0.5	-	2	-	-	X
1,2-Epoxypropane		See Propylene oxide						
2,3-Epoxy-1-propanol		See Glycidol						
Ethanethiol		See Ethyl mercaptan						
Ethanolamine	141-43-5	3	8	6	15	-	-	-
Ethion	563-12-2	-	0.4	-	-	-	-	X
2-Ethoxyethanol	110-80-5	5	19	-	-	-	-	X
2-Ethoxyethyl acetate (Cellosolve acetate)	111-15-9	5	27	-	-	-	-	X
Ethyl acetate	141-78-6	400	1,400	-	-	-	-	-
Ethyl acrylate	140-88-5	5	20	25	100	-	-	X
Ethyl alcohol (Ethanol)	64-17-5	1,000	1,900	-	-	-	-	-

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA*		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Ethylamine	75-04-7	10	18	-	-	-	-	-
Ethyl amyl ketone (5-Methyl-3-heptanone)	541-85-5	25	130	-	-	-	-	-
Ethyl benzene	100-41-4	100	435	125	545	-	-	-
Ethyl bromide	74-96-4	200	890	250	1,110	-	-	-
Ethyl butyl ketone (3-Heptanone)	106-35-4	50	230	75	345	-	-	-
Ethyl chloride	75-00-3	1,000	2,600	1,250	3,250	-	-	-
Ethyl ether	60-29-7	400	1,200	500	1,500	-	-	-
Ethyl formate	109-94-4	100	300	-	-	-	-	-
Ethyl mercaptan	75-08-1	0.5	1	-	-	-	-	-
Ethyl silicate	78-10-4	10	85	-	-	-	-	-
Ethylene chlorohydrin	107-07-3	-	-	-	-	1	3	X
Ethylenediamine	107-15-3	10	25	-	-	-	-	-
Ethylene dibromide	106-93-4	20	-	-	-	30	-	X
		See Exhibit B for operations excluded						
Ethylene dichloride	107-06-2	1	4	2	8	-	-	-
Ethylene glycol, vapor	107-21-1	-	-	-	-	50	125	-
Ethylene glycol dinitrate (EGDN) ¹	628-96-6	0.05	0.3	-	0.1	-	-	X
Ethylene glycol methyl acetate		See Methyl cellosolve acetate						
Ethylene imine	151-56-4	See §1910.1003						
Ethylene oxide	75-21-8	See §1910.1047						
Ethylidene chloride		See 1,1-Dichloroethane						
Ethylidene norbornene	16219-75-3	-	-	-	-	5	25	-
N-Ethylmorpholine	100-74-3	5	23	-	-	-	-	X
Fenamiphos	22224-92-6	-	0.1	-	-	-	-	X
Fensulfothion (Dasanit)	115-90-2	-	0.1	-	-	-	-	-
Fenthion	55-38-9	-	0.2	-	-	-	-	X
Ferbam	14484-64-1							
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	-	-	-	-	-	-
Ferrovandium dust	12604-58-9	-	1	-	3	-	-	-
Fibrous glass dust		-	10 ^h	-	-	-	-	-
Fluorides (as F)	Varies with compound	-	2.5	-	-	-	-	-
Fluorine	7782-41-4	0.1	0.2	-	-	-	-	-
Fluorotrichloromethane (Trichlorofluoromethane)	75-69-4	-	-	-	-	1,000	5,600	-
Fonofos	944-22-9	-	0.1	-	-	-	-	X
Formaldehyde	50-00-0	See §1910.1048						

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA*		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Formamide	75-12-7	10	15	-	-	-	-	-
Formic acid	64-18-6	5	9	10	18	-	-	-
Furfural	98-01-1	2	8	-	-	-	-	X
Furfuryl alcohol	98-00-0	10	40	15	60	-	-	X
Gasoline	8006-61-9	300	900	-	-	-	-	-
Germanium tetrahydride	7782-65-2	0.2	0.6	0.6	1.8	-	-	-
Glutaraldehyde	111-30-8	-	-	-	-	0.2	0.7	-
Glycerin (mist)	56-81-5	-	-	-	-	-	-	-
Total dust		-	10	-	-	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Glycidol	556-52-5	25	75	-	-	-	-	-
Glycol monoethyl ether		See 2-Ethoxyethanol						
Grain dust (oat, wheat, barley)	-	-	10	-	-	-	-	-
Graphite, natural respirable dust	7782-42-5	-	2.5	-	-	-	-	-
Graphite, synthetic	-	-	-	-	-	-	-	-
Total dust		-	10	-	-	-	-	-
Respirable fraction		-	5	-	-	-	-	-
GuthionR		See Azinphos methyl						
Gypsum	13397-24-5	-	-	-	-	-	-	-
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Hafnium	7440-58-6	-	-	0.5	-	1.5	-	-
Heptachlor	76-44-8	-	0.5	-	2	-	-	X
Heptane (n-Heptane)	142-82-5	400	1,600	500	2,000	-	-	-
Hexachlorobutadiene	87-68-3	0.02	0.24	-	-	-	-	-
Hexachlorocyclopentadiene	77-47-4	0.01	0.1	0.03	0.3	-	-	-
Hexachloroethane	67-72-1	1	10	-	-	-	-	X
Hexachloronaphthalene	1335-87-1	-	0.2	-	0.6	-	-	X
Hexafluoroacetone	684-16-2	0.1	0.7	0.3	2	-	-	X
n-Hexane	110-54-3	50	180	-	-	-	-	-
Hexane isomers	Varies with compound	500	1,800	-	-	-	-	-
2-Hexanone (Methyl n-butyl ketone)	591-78-6	5	20	-	-	-	-	-
Hexone (Methyl isobutyl ketone)	108-10-1	50	205	75	300	-	-	-
sec-Hexyl acetate	108-84-9	50	300	-	-	-	-	-
Hexylene glycol	107-41-5	-	-	-	-	25	125	-
Hydrazine	302-01-2	0.1	0.1	-	-	-	-	X
Hydrogenated Terphenyls	61788-32-7	0.5	5	-	-	-	-	-
Hydrogen bromide	10035-10-6	-	-	-	-	3	10	-

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA*		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Hydrogen chloride	7647-01-0	-	-	-	-	5	7	-
Hydrogen cyanide	74-90-8	-	-	4.7	5	-	-	X
Hydrogen fluoride (as F)	7664-39-3	3	-	6	-	-	-	-
Hydrogen peroxide	7722-84-1	1	1.4	2	3	-	-	-
Hydrogen selenide (as Se)	7783-07-5	0.05	0.2	-	-	-	-	-
Hydrogen sulfide	7783-06-4	10	14	15	21	-	-	-
Hydroquinone	123-31-9	-	2	-	4	-	-	-
2-Hydroxypropyl acrylate	999-61-1	0.5	3	-	-	-	-	X
Indene	95-13-6	10	45	15	70	-	-	-
Indium and compounds (as In)	7440-74-6	-	0.1	-	0.3	-	-	-
Iodine	7553-56-2	-	-	-	-	0.1	1	-
Iodoform	75-47-8	0.6	10	1	20	-	-	-
Iron oxide dust and fume (as Fe)	1309-37-1	-	-	-	-	-	-	-
Total particulate		-	5	-	10	-	-	-
Iron pentacarbonyl (as Fe)	13463-40-6	0.1	0.8	0.2	1.6	-	-	-
Iron salts (soluble) (as Fe)Varies with compound		-	1	-	2	-	-	-
Isoamyl acetate	123-92-2	100	525	125	655	-	-	-
Isoamyl alcohol (primary and secondary)	123-51-3	100	360	125	450	-	-	-
Isobutyl acetate	110-19-0	150	700	187	888	-	-	-
Isobutyl alcohol	78-83-1	50	150	75	225	-	-	-
Isooctyl alcohol	26952-21-6	50	270	-	-	-	-	X
Isophorone	78-59-1	4	23	-	-	5	28	-
Isophorone diiso- cyanate	4098-71-9	0.005	0.045	0.02	-	-	-	X
2-Isopropoxyethanol	109-59-1	25	105	75	320	-	-	-
Isopropyl acetate	108-21-4	250	950	310	1,185	-	-	-
Isopropyl alcohol	67-63-0	400	980	500	1,225	-	-	-
Isopropylamine	75-31-0	5	12	10	24	-	-	-
N-Isopropylaniline	768-52-5	2	10	-	-	-	-	X
Isopropyl ether	108-20-3	250	1,050	310	1,320	-	-	-
Isopropyl glycidyl ether (IGE)	4016-14-2	50	240	75	360	-	-	-
Kaolin	-	-	-	-	-	-	-	-
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA*		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Ketene	463-51-4	0.5	0.9	1.5	3	-	-	-
Lead chromate, as Cr	7758-97-6	-	0.05	-	-	-	-	-
Lead inorganic (as Pb)	7439-92-1	See §1910.1025 and 1926.62						-
Limestone	1317-65-3	-	-	-	-	-	-	-
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Lindane	58-89-9	-	0.5	-	1.5	-	-	X
Lithium hydride	7580-67-8	-	0.025	-	-	-	-	-
L.P.G. (Liquefied petroleum gas)	68476-85-7	1,000	1,800	1,250	2,250	-	-	-
Magnesite	546-93-0	-	-	-	-	-	-	-
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Magnesium oxide fume	1309-48-4	-	-	-	-	-	-	-
Total particulate		-	10	-	-	-	-	-
Malathion	121-75-5	-	-	-	-	-	-	-
Total dust		-	10	-	-	-	-	X
Maleic anhydride	108-31-6	0.25	1	-	-	-	-	-
Manganese compounds (as Mn)	7439-96-5	-	-	-	-	-	5	-
Manganese fume (as Mn)	7439-96-5	-	1	-	3	-	-	-
Manganese cyclopentadienyl tricarbonyl (as Mn)	12079-65-1	-	0.1	-	0.3	-	-	X
Manganese tetroxide (as Mn)	1317-35-7	-	1	-	-	-	-	-
Marble (Calcium carbonate)	1317-65-3	-	-	-	-	-	-	-
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Mercury (aryl and inorganic) (as Hg)	7439-97-6	-	-	-	-	-	0.1	X
Mercury (organo) alkyl compounds (as Hg)	7439-97-6	-	0.01	-	0.03	-	-	X
Mercury (vapor) (as Hg)	7439-97-6	-	0.05	-	-	-	-	X
Mesityl oxide	141-79-7	15	60	25	100	-	-	-
Methacrylic acid	79-41-4	20	70	-	-	-	-	X
Methanethiol		See Methyl mercaptan						-
Methomyl (Lannate)	16752-77-5	-	2.5	-	-	-	-	-
Methoxychlor	72-43-5	-	-	-	-	-	-	-
Total dust		-	10	-	-	-	-	-

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA*		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
2-Methoxyethanol	150-76-5	See Methyl cellosolve						
4-Methoxyphenol								
Methyl acetate	79-20-9	200	610	250	760	-	-	-
Methyl acetylene (Propyne)	74-99-7	1,000	1,650	1,250	2,040	-	-	-
Methyl acetylene- propadiene mixture (MAPP)	-	1,000	1,800	1,250	2,250	-	-	-
Methyl acrylate	96-33-3	10	35	-	-	-	-	X
Methylacrylonitrile	126-98-7	1	3	2	6	-	-	X
Methylal (Dimethoxy- methane)	109-87-5	1,000	3,100	1,250	3,875	-	-	-
Methyl alcohol (methanol)	67-56-1	200	260	250	325	-	-	X
Methylamine	74-89-5	10	12	-	-	-	-	-
Methyl amyl alcohol		See Methyl isobutyl carbinol						
Methyl n-amyl ketone	110-43-0	50	235	-	-	-	-	-
N-Methyl aniline	100-61-8	0.5	2	1	5	-	-	X
Methyl bromide	74-83-9	5	20	15	60	-	-	X
Methyl n-butyl ketone		See 2-Hexanone						
Methyl cellosolve (2-Methoxyethanol)	109-86-4	5	16	-	-	-	-	X
Methyl cellosolve acetate (2-Methoxyethyl acetate)	110-49-6	5	24	-	-	-	-	X
Methyl chloride	74-87-3	50	105	106	205	200	-	-
Methyl chloroform (1,1,1-Trichloro- ethane)	71-55-6	350	1,900	450	2,450	-	-	-
Methyl 2-cyanoacrylate	137-05-3	2	8	4	16	-	-	-
Methylcyclohexane	108-87-2	400	1,600	500	2,000	-	-	-
Methylcyclohexanol	25639-42-3	50	235	75	350	-	-	-
o-Methylcyclohexanone	538-60-8	50	230	75	345	-	-	X
2-Methylcyclo- pentadienyl manganese tricarbonyl (as Mn)	12108-13-3	-	0.2	-	0.6	-	-	X
Methyl demeton	8022-00-2	-	0.5	-	1.5	-	-	X
4,4'-Methylene bis (2-chloroaniline) (MBOCA)	101-14-4	0.02	0.22	-	-	-	-	X
Methylene bis (4- cyclohexyliso- cyanate)	5124-30-1	-	-	-	-	0.01	0.11	-

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**							
		PEL-TWA ^a		PEL-STEL ^a		PEL-CEILING		Skin Designation	
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}		
Methylene chloride	75-09-2	See §1910.1052							
4,4'-Methylene dianiline;	101-77-9	See §1910.1050 and 1926.60							
Methyl ethyl ketone (MEK)		See 2-Butanone							
Methyl ethyl ketone peroxide (MEKP)	1338-23-4	-	-	-	-	0.2	1.5	-	
Methyl formate	107-31-3	100	250	150	375	-	-	-	
Methyl hydrazine (Mono-methyl hydrazine)	60-34-4	-	-	-	-	0.2	0.35	X	
Methyl iodide	74-88-4	2	10	-	-	-	-	X	
Methyl isoamyl ketone	110-12-3	50	240	-	-	-	-	-	
Methyl isobutyl carbinol	108-11-2	25	100	-	-	-	-	X	
Methyl isobutyl ketone		See Hexone							
Methyl isocyanate	624-83-9	0.02	0.05	-	-	-	-	X	
Methyl isopropyl Ketone	563-80-4	200	705	-	-	-	-	-	
Methyl mercaptan	74-93-1	0.5	1	-	-	-	-	-	
Methyl methacrylate	80-62-6	100	410	-	-	-	-	-	
Methyl parathion	298-00-0	-	0.2	-	0.6	-	-	X	
Methyl propyl ketone		See 2-Pentanone							
Methyl silicate	681-84-5	1	6	-	-	-	-	-	
α-Methyl styrene	98-83-9	50	240	100	485	-	-	-	
Methylal	109-87-5								
Methylene bisphenyl isocyanate (MDI)	101-68-8	-	-	-	-	0.02	0.2	-	
Metribuzin	21087-64-9	-	5	-	-	-	-	-	
Mevinphos ^R		See Phosdrin							
Mica		See Silicates							
Molybdenum (as Mo)	7439-98-7								
Soluble compounds		-	5	-	10	-	-	-	
Insoluble compounds									
Total dust		-	10	-	20	-	-	-	
Monocrotophos (Azodrin ^R)	6923-22-4	-	0.25	-	-	-	-	-	
Monomethyl aniline (N-Methylaniline)	100-61-8	0.5	2	-	-	-	-	X	
Morpholine	110-91-8	20	70	30	105	-	-	X	
Naled	300-76-5		-	3	-	6	-	X	
Naphtha (Coal tar)	8030-30-6	100	400	-	-	-	-	-	
Naphthalene	91-20-3	10	50	15	75	-	-	-	
α-Naphthylamine	134-32-7	See §1910.1003							

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA*		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
β-naphthylamine	91-59-8	See §1910.1003						
Nickel carbonyl (as Ni)	13463-39-3	0.001	0.007	-	-	-	-	-
Nickel, metal and insoluble compounds (as Ni)	7440-02-0	-	1	-	-	-	-	-
Nickel, soluble compounds (as Ni)	7440-02-0	-	0.1	-	0.3	-	-	-
Nickel sulfide roasting, fume & dust, (as Ni)	-	-	1	-	-	-	-	-
Nicotine	54-11-5	-	0.5	-	1.5	-	-	X
Nitrapyrin	1929-82-4	-	10	-	20	-	-	-
Nitric acid	7697-37-2	2	5	4	10	-	-	-
Nitric oxide	10102-43-9	25	30	35	45	-	-	-
p-Nitroaniline	100-01-6	-	3	-	-	-	-	X
Nitrobenzene	98-95-3	1	5	2	10	-	-	X
p-Nitrochlorobenzene	100-00-5	0.1	0.6	-	-	-	-	X
4-Nitrodiphenyl	92-93-3	See §1910.1003						
Nitroethane	79-24-3	100	310	150	465	-	-	-
Nitrogen dioxide	10102-44-0	3	6	5	9.4	-	-	-
Nitrogen trifluoride	7783-54-2	10	29	15	45	-	-	-
Nitroglycerin (NG) ¹	55-63-0	-	-	-	0.1	-	-	X
Nitromethane	75-52-5	100	250	150	375	-	-	-
1-Nitropropane	108-03-2	25	90	35	135	-	-	-
2-Nitropropane	79-46-9	10	35	-	-	-	-	-
N-Nitrosodimethylamine	62-75-9	See §1910.1003						
Nitrotoluene o-isomer	88-72-2;	2	11	-	-	-	-	X
m-isomer	99-08-1;	2	11	-	-	-	-	X
p-isomer	99-99-0	2	11	-	-	-	-	X
Nitrotrichloromethane		See Chloropicrin						
Nitrous oxide	10024-97-2	50	91	-	-	-	-	-
Nonane	111-84-2	200	1,050	250	1,300	-	-	-
Octachloronaphthalene	2234-13-1	-	0.1	-	0.3	-	-	X
Octane	111-65-9	300	1,450	375	1,800	-	-	-
Oil mist, mineral	8012-95-1-	5 ⁱ	-	10 ⁱ	-	-	-	-
Osmium tetroxide (as Os)	20816-12-0	0.0002		0.002	0.0006	0.006	-	-
Oxalic acid	144-62-7	-	1	-	2	-	-	-
Oxygen difluoride	7783-41-7	-	-	-	-	0.05	0.11	-
Ozone	10028-15-6	0.1	0.2	0.3	0.6	-	-	-
Paraffin wax fume	8002-74-2	-	2	-	6	-	-	-

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA*		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Paraquat, respirable dust	1910-42-5 2074-50-2	-	0.1	-	-	-	-	X
	4685-14-7	-	0.1	-	-	-	-	X
Parathion	56-38-2	-	0.1	-	0.3	-	-	X
Particulates not otherwise regulated	-							
Total dust	-	-	10	-	-	-	-	-
Respirable fraction	-	-	5	-	-	-	-	-
Pentaborane	19624-22-7	0.005	0.01	0.015	0.03	-	-	-
Pentachloronaphthalene	1321-64-8	-	0.5	-	2	-	-	X
Pentachlorophenol	87-86-5	-	0.5	-	1.5	-	-	X
Pentaerythritol	115-77-5							
Total dust		-	10	-	20	-	-	-
Respirable fraction			5	-	-	-	-	-
Pentane	109-66-0	600	1,800	750	2,250	-	-	-
2-Pentanone (Methyl propyl ketone)	107-87-9	200	700	250	875	-	-	-
Perchloroethylene (Tetrachloroethylene)	127-18-4	25	170	200	1,340	-	-	-
Perchloromethyl mercaptan	594-42-3	0.1	0.8	-	-	-	-	-
Perchloryl fluoride	7616-94-6	3	14	6	28	-	-	-
Perlite	-							
Total dust		-	10	-	-	-	-	-
Respirable fraction			5	-	-	-	-	-
Petroleum distillates (Naphtha)	8002-05-9	400	1,600	-	-	-	-	-
Phenol	108-95-2	5	19	10	38	-	-	X
Phenothiazine	92-84-2	-	5	-	10	-	-	X
p-Phenylene diamine	106-50-3	-	0.1	-	-	-	-	X
Phenyl ether, vapor	101-84-8	1	7	2	14	-	-	-
Phenyl ether-biphenyl mixture, vapor	-	1	7	-	-	-	-	-
Phenylethylene			See Styrene					
Phenyl glycidyl ether (PGE)	122-60-1	1	6	-	-	-	-	-
Phenylhydrazine	100-63-0	5	20	10	45	-	-	X
Phenyl mercaptan	108-98-5	0.5	2	-	-	-	-	-
Phenylphosphine	638-21-1	-	-	-	-	0.05	0.25	-
Phorate	298-02-2	-	0.05	-	0.2	-	-	X
Phosdrin (Mevinphos ^R)	7786-34-7	0.01	0.1	0.03	0.3	-	-	X

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA*		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Phosgene (Carbonyl chloride)	75-44-5	0.1	0.4	-	-	-	-	-
Phosphine	7803-51-2	0.3	0.4	1	1.4	-	-	-
Phosphoric acid	7664-38-2	-	1	-	3	-	-	-
Phosphorus (yellow)	7723-14-0	-	0.1	-	0.3	-	-	-
Phosphorus oxychloride	10025-87-3	0.1	0.6	0.5	3	-	-	-
Phosphorus penta-Chloride	10026-13-8	-	1	-	3	-	-	-
Phosphorus penta-Sulfide	1314-80-3	-	1	-	3	-	-	-
Phosphorus trichloride	7719-12-2	0.2	1.5	0.5	3	-	-	-
Phthalic anhydride	85-44-9	1	6	-	-	-	-	-
m-Phthalodinitrile	626-17-5	-	5	-	-	-	-	-
Picloram	1918-02-1	-	-	-	-	-	-	-
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Picric acid	88-89-1	-	0.1	-	0.3	-	-	X
Pindone (2-Pivalyl-1,3-indandione)	83-26-1	-	0.1	-	0.3	-	-	-
Piperazine dihydrochloride	142-64-3	-	5	-	-	-	-	-
Plaster of Paris	26499-65-0	-	-	-	-	-	-	-
Total dust		-	10	-	-	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Platinum (as Pt) Metal	7440-06-4	-	1	-	-	-	-	-
Soluble salts		-	0.002	-	-	-	-	-
Portland cement	65997-15-1	-	-	-	-	-	-	-
Total dust		-	10	-	-	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Potassium hydroxide	1310-58-3	-	-	-	-	-	2	-
Propane	74-98-6	1,000	1,800	-	-	-	-	-
Propargyl alcohol	107-19-7	1	2	3	6	-	-	X
β-Propiolactone	57-57-8	See §1910.1003						-
Propionic acid	79-09-4	10	30	15	45	-	-	-
Propoxur (Baygon)	114-26-1	-	0.5	-	2	-	-	-
n-Propyl acetate	109-60-4	200	840	250	1,050	-	-	-
n-Propyl alcohol	71-23-8	200	500	250	625	-	-	X
n-Propyl Nitrate	627-13-4	25	105	40	170	-	-	-
Propylene dichloride	78-87-5	75	350	110	510	-	-	-
Propylene glycol dinitrate (PGDN)	6423-43-4	0.05	0.3	0.1	0.6	-	-	X
Propylene glycol mono-methyl ether	107-98-2	100	360	150	540	-	-	-
Propylene imine	75-55-8	2	5	-	-	-	-	X

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA ^a		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Propylene oxide	75-56-9	20	50	-	-	-	-	-
n-Propyl nitrate	627-13-4	25	105	40	170	-	-	-
Propyne		See Methyl acetylene						
Pyrethrum	8003-34-7	-	5	-	10	-	-	-
Pyridine	110-86-1	5	15	10	30	-	-	-
Quinone	106-51-4	0.1	0.4	0.3	1	-	-	-
Resorcinol	108-46-3	10	45	20	90	-	-	-
Rhodium (as Rh), metal fume and insoluble compounds	7440-16-6	-	0.1	-	-	-	-	-
Rhodium (as Rh), soluble compounds	7440-16-6	-	0.001	-	-	-	-	-
Ronnel	299-84-3	-	10	-	-	-	-	-
Rosin core solder pyrolysis products, as formaldehyde	-	-	0.1	-	0.3	-	-	-
Rotenone (commercial)	83-79-4	-	5	-	10	-	-	-
Rouge	-	-	-	-	-	-	-	-
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Rubber solvent (Naphtha)	-	400	1,600	-	-	-	-	-
Selenium compounds (as Se)	7782-49-2	0.2	-	-	-	-	-	-
Selenium hexafluoride (as Se)	7783-79-1	0.05	0.2	-	-	-	-	-
Sesone (Sodium 2,4- dichloro-phenoxy- ethyl sulfate)		See Crag herbicide						
Silane		See Silicone tetrahydride						
Silica, amorphous, precipitated and gel	-	-	6	-	-	-	-	-
Silica, amorphous, diatomaceous earth containing less than 1% crystalline silica	61790-53-2	6	-	-	-	-	-	-
Silica, crystalline cristobalite (as quartz), respirable dust	14464-46-1	See §1910.1053						
Silica, crystalline quartz (as quartz), respirable dust	14808-60-7	See §1910.1053						

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA*		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Silica, crystalline tripoli (as quartz), respirable dust	1317-95-9	See §1910.1053						
Silica, crystalline tridymite (as quartz), respirable dust	15468-32-3	See §1910.1053						
Silica, fused, respirable dust	60676-86-0	See §1910.1053						
Silicates (less than 1% crystalline silica)								
Mica (respirable dust)	12001-26-2	-	3	-	-	-	-	-
Soapstone, total dust	-	-	6	-	-	-	-	-
Soapstone, respirable dust	-	-	3	-	-	-	-	-
Talc (containing asbestos): use asbestos limit	-	See §1910.1001						
Talc (containing no asbestos), respirable dust	14807-96-6	-	2	-	-	-	-	-
Tremolite		See §1910.1001						
Silicon	7440-21-3							
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Silicon carbide	409-21-2							
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Silicon tetrahydride (Silane)	7803-62-5	5	7	-	-	-	-	-
Silver, metal and soluble compounds (as Ag)	7440-22-4	-	0.01	-	-	-	-	-
Soapstone		See Silicates						
Sodium azide (as HN ₃)	26628-22-8	-	-	-	-	0.1	-	X
(as NaN ₃)		-	-	-	-	-	0.3	X
Sodium bisulfite	7631-90-5	-	5	-	-	-	-	-
Sodium 2,4-dichlorophenoxyethyl sulfate		See Crag herbicide (see Sesone)						
Sodium fluoroacetate	62-74-8	-	0.05	-	0.15	-	-	X

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA*		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Sodium hydroxide	1310-73-2	-	-	-	-	-	2	-
Sodium metabisulfite	7681-57-4	-	5	-	-	-	-	-
Starch	9005-25-8	-	-	-	-	-	-	-
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Stibine	7803-52-3	0.1	0.5	0.3	1.5	-	-	-
Stoddard solvent	8052-41-3	100	525	-	-	-	-	-
Strychnine	57-24-9	-	0.15	-	0.45	-	-	-
Styrene, monomer	100-42-5	50	215	100	425	-	-	-
Subtilisins (Proteolytic enzymes)	9014-01-1	-	-	-	0.00006 (60 min) ^d	-	-	-
Sucrose	57-50-1	-	-	-	-	-	-	-
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Sulfotep;		See TEDP						
Sulfur dioxide	7446-09-5	2	5	5	10	-	-	-
Sulfur hexafluoride	2551-62-4	1,000	6,000	1,250	7,500	-	-	-
Sulfuric acid	7664-93-9	-	1	-	3	-	-	-
Sulfur monochloride	10025-67-9	-	-	3	18	1	6	-
Sulfur pentafluoride	5714-22-7	-	-	0.075	0.75	0.01	0.1	-
Sulfur tetrafluoride	7783-60-0	-	-	0.3	1	0.1	0.4	-
Sulfuryl fluoride	2699-79-8	5	20	10	40	-	-	-
Sulprofos	35400-43-2	-	1	-	-	-	-	-
Systox ^R		See Demeton 2,4,5-T						
Talc		See Silicates						
Tantalum, metal and oxide dust	7440-25-7	-	5	-	10	-	-	-
TEDP (Sulfotep)	3689-24-5	-	0.2	-	0.6	-	-	X
Tellurium and compounds (as Te)	13494-80-9	-	0.1	-	-	-	-	-
Tellurium hexafluoride (as Te)	7783-80-4	0.02	0.2	-	-	-	-	-
Temephos	3383-96-8	-	-	-	-	-	-	-
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
TEPP	107-49-3	0.004	0.05	0.01	0.2	-	-	X
Terphenyl	26140-60-3	-	-	-	-	0.5	5	-
1,1,1,2-Tetrachloro- 2,2-difluoroethane	76-11-9	500	4,170	625	5,210	-	-	-
1,1,2,2-Tetrachloro- 1,2-difluoroethane	76-12-0	500	4,170	625	5,210	-	-	-
1,1,2,2-Tetrachloro- ethane	79-34-5	1	7	-	-	-	-	X
Tetrachloroethylene		See Perchloroethylene						

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA*		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Tetrachloromethane		See Carbon tetrachloride						
Tetrachloronaphthalene	1335-88-2	-	2	-	4	-	-	X
Tetraethyl lead (as Pb)	78-00-2	-	0.075k	-	0.3k	-	-	X
Tetrahydrofuran	109-99-9	200	590	250	735	-	-	-
Tetramethyl lead, (as Pb)	75-74-1	-	0.075k	-	0.5k	-	-	X
Tetramethyl succino- nitrile	3333-52-6	0.5	3	2	9	-	-	X
Tetranitromethane	509-14-8	1	8	-	-	-	-	-
Tetrasodium pyro- phosphate	7722-88-5	-	5	-	-	-	-	-
Tetryl (2,4,6- Trinitrophenyl- methyl-nitramine)	479-45-8	-	1.5	-	-	-	-	X
Thallium, soluble compounds (as Tl)	7440-28-0	-	0.1	-	-	-	-	X
4,4'-Thiobis (6-tert, butyl-m-cresol)	96-69-5							
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Thioglycolic acid	68-11-1	1	4	-	-	-	-	X
Thionyl chloride	7719-09-7	-	-	-	-	1	5	-
Thiram	137-26-8	-	1	-	-	-	-	-
Tin, inorganic compounds (except oxides) (as Sn)	7440-31-5	-	2	-	4	-	-	-
Tin, organic compounds (as Sn)	7440-31-5	-	0.1	-	0.2	-	-	X
Tin oxide (as Sn)	21651-19-4	-	2	-	4	-	-	-
Titanium dioxide	13463-67-7							
Total dust		-	10	-	20	-	-	-
Toluene (Toluol)	108-88-3	100	375	150	560	-	-	X
Toluene di- isocyanate (TDI)	584-84-9	0.005	0.04	0.02	0.15	-	-	-
m-Toluidine	108-44-1	2	9	-	-	-	-	X
o-Toluidine	95-53-4	5	22	-	-	-	-	X
p-Toluidine	106-49-0	2	9	-	-	-	-	X
Toxaphene		See Chlorinated camphene						
Tremolite		See Silicates						
Tributyl phosphate	126-73-8	0.2	2.5	0.4	5	-	-	-
Trichloroacetic acid	76-03-9	1	5	-	-	-	-	-
1,2,4-Trichlorobenzene	120-82-1	-	-	-	-	5	40	-
1,1,1-Trichloroethane		See Methyl chloroform						

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA*		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
1,1,2-Trichloroethane	79-00-5	10	45	20	90	-	-	X
Trichloroethylene	79-01-6	50	270	200	1,080	-	-	-
Trichloromethane		See Chloroform						
Trichloronaphthalene	1321-65-9	-	5	-	10	-	-	X
1,2,3-Trichloropropane	96-18-4	10	60	75	450	-	-	X
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	1,000	7,600	1,250	9,500	-	-	-
Triethylamine	121-44-8	10	40	15	60	-	-	-
Trifluorobromomethane	75-63-8	1,000	6,100	1,200	7,300	-	-	-
Trimellitic anhydride	552-30-7	0.005	0.04	-	-	-	-	-
Trimethylamine	75-50-3	10	24	15	36	-	-	-
Trimethyl benzene	25551-13-7	25	125	35	170	-	-	-
Trimethyl phosphite	121-45-9	2	10	5	25	-	-	-
2,4,6-Trinitrophenyl		See Picric acid						
2,4,6-Trinitrophenylmethyl nitramine		See Tetryl						
2,4,6-Trinitrotoluene (TNT)	118-96-7	-	0.5	-	-	-	-	X
Triorthocresyl phosphate	78-30-8	-	0.1	-	-	-	-	X
Triphenyl amine	603-34-9	-	5	-	-	-	-	-
Triphenyl phosphate	115-86-6	-	3	-	6	-	-	X
Tungsten (as W)	7440-33-7							
Insoluble compounds		-	5	-	10	-	-	-
Soluble compounds		-	1	-	3	-	-	-
Turpentine	8006-64-2	100	560	150	840	-	-	-
Uranium (as U)	7440-61-1							
Soluble compounds		-	0.05	-	-	-	-	-
Insoluble compounds		-	0.2	-	0.6	-	-	-
n-Valeraldehyde	110-62-3	50	175	-	-	-	-	-
Vanadium	1314-62-1							
Respirable dust (as V ₂ O ₅)	-	0.05	-	-	-	-	-	-
Fume (as V ₂ O ₅)	-	0.05	-	-	-	-	-	-
Vegetable oil mist	-							
Total dust	-	10	-	-	-	-	-	-
Respirable fraction	-	5	-	-	-	-	-	-
Vinyl acetate	108-05-4	10	30	20	60	-	-	-
Vinyl benzene		See Styrene						
Vinyl bromide	593-60-2	5	20	-	-	-	-	-
Vinyl chloride	75-01-4	See §1910.1017						
Vinylcyanide		See Acrylonitrile						
Vinyl cyclohexene dioxide	106-87-6	10	60	-	-	-	-	X

Limits for Air Contaminants¹ (Continued)

Substance	CAS No. ^b	Air Contaminant Limits**						Skin Designation
		PEL-TWA*		PEL-STEL ^a		PEL-CEILING		
		ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	ppm ^c	mg/m ^{3d}	
Vinylidene chloride (1,1-Dichloro-ethylene)	75-35-4	1	4	-	-	-	-	-
Vinyl toluene	25013-15-4	50	240	100	485	-	-	-
VM & P Naphtha	8032-32-4	300	1,350	400	1,800	-	-	-
Warfarin	81-81-2	-	0.1	-	0.3	-	-	-
Welding fumes (total particulate)	-	-	5	-	-	-	-	-
Wood dust:								
Certain hardwoods as beech & oak	-	-	1	-	-	-	-	-
All soft woods, (except Western red cedar)	-	-	5	-	10	-	-	-
Wood dust, Western red cedar	-	-	2.5	-	-	-	-	-
Xylenes (o-, m-, p-isomers)	1330-20-7	100	435	150	655	-	-	X
m-Xylene α , α' -diamine	1477-55-0	-	-	-	-	-	0.1	X
Xylidine	1300-73-8	0.5	2.5	-	-	-	-	X
Yttrium	7440-65-5	-	1	-	3	-	-	-
Zinc chloride fume	7646-85-7	-	1	-	2	-	-	-
Zinc chromate (as CrO ₃)	Varies with Compound	-	0.01	-	-	-	0.1	-
Zinc oxide fume	1314-13-2	-	5	-	10	-	-	-
Zinc oxide	1314-13-2							
Total dust		-	10	-	-	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Zinc stearate	557-05-1							
Total dust		-	10	-	20	-	-	-
Respirable fraction		-	5	-	-	-	-	-
Zirconium compounds (as Zr)	7440-67-2	-	5	-	10	-	-	-

Footnotes to Exhibit A:

Air Contaminant Rule Limits are the most restrictive of the federal limits, ACGIH limits and existing HIOSH limits.

* The PEL-TWA's are 7- to 8-hour TWA's, unless otherwise noted.

** Unless otherwise noted, employers in General Industry (i.e., those covered by Part 2 of the HIOSH standards) may use any combination of controls to achieve these limits, until December 31, 1992.

- STEL duration is for 15 minutes, unless otherwise noted.
- The CAS number is for information only. Enforcement is based on the substance name. For an entry covering more than one metal compound measured as the metal, the CAS number for the metal is given--not the CAS numbers for the individual compounds.

- c. Ppm are in parts of vapor or gas per million parts of contaminated air by volume at 25°C and 760 torr.
- d. Mg/m³ are approximate milligrams of substance per cubic meter of air.
- e. The final benzene standard in section 1910.1028 applies to all occupational exposures to benzene except some sub segments of industry where exposures are consistently under the action level (e.g., distribution and sale of fuels, sealed containers and pipelines, coke production, oil and gas drilling and production, natural gas processing, and the percentage exclusion for liquid mixtures); for the excepted sub segments, the benzene limits in Exhibit B apply.
- f. Coal tar pitch volatiles mean the fused polycyclic hydrocarbons that volatilize from the distillation residues of coal, petroleum, (excluding asphalt, CAS 8052-42-4 and CAS 64742-93-4), wood, and other organic matter.
- g. Cotton dust refers to lint-free dust as measured by the vertical elutriator, cotton-dust sampler described in the Transactions of the National Conference on Dust, p. 33 by J.R. Lynch, (May 2, 1970). The PEL-TWA in the exhibit applies to respirable dust as measured by a vertical elutriator cotton dust sampler or equivalent instrument. The time-weighted average applies to the cotton waste processing operations of waste cycling (sorting, blending, cleaning, and willowing) and garreting. See also section 1910.1043.
- h. Fibrous glass dust means particles <7µm in diameter.
- i. Oil mist as sampled by a method that does not collect vapor.
- j. Compliance with the Subtilisins PEL-TWA is assessed by sampling with a high volume sampler (600-800 liters per minute) for at least 60 minutes.
- k. For control of tetraethyl lead and tetramethyl lead in general room air, biologic monitoring is essential for personnel monitoring.
- l. Most Occupational exposures to EGDN actually involve mixtures of EGDN and nitroglycerin (NG). This EGDN:NG mixture has a PEL-STEL of 0.1 mg/m³.
- m. See Exhibit B from the exposure limits for any operations or sectors where the exposure limits in 29 C.F.R. §1910.1026 are stayed or otherwise not in effect.
- n. If the exposure limit in 29 C.F.R. §1910.1026 is stayed or is otherwise not in effect, the exposure limit is ceiling of 0.1 mg/m³.

EXHIBIT B (July 1, 2017)
 MORE LIMITS FOR AIR CONTAMINANTS

Material	Industry Segments	Skin Designation	8-hour time-weighted average	Ceiling concentration
Benzene	(Z37.40-1969) ¹	-	10 ppm	25 ppm
Beryllium and Beryllium Compounds	(Z37.29-1970)	-	0.002 ppm	0.005 ppm
Chromic acid and Chromates (as CrO ₃) ²	(Z37.7-1971)			1mg/10m ³
Ethylene Dibromide	(Z37.31-1970)	X	20 ppm	30 ppm
Methyl chloride	(Z37.18-1969)	-	100 ppm	200 ppm

¹This standard applies to the industry segments exempt from the 1 ppm 8-hour TWA and 5 ppm STEL of the benzene standard at 29 C.F.R §1910.1028 This standard also applies to any industry for which 29 C.F.R §1910.1028 is stayed or otherwise not in effect.

²This standard applies to any operations or sectors for which the Hexavalent Chromium standard, 29 C.F.R §1910.1026 is stayed or otherwise is not in effect."

5. Chapter 12-110, Hawaii Administrative Rules, entitled "General Safety and Health Requirements", is amended and compiled to read as follows:

"HAWAII ADMINISTRATIVE RULES

TITLE 12

DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS

SUBTITLE 8

HAWAII OCCUPATIONAL SAFETY AND HEALTH DIVISION

PART 3

CONSTRUCTION STANDARDS

CHAPTER 110

GENERAL SAFETY AND HEALTH REQUIREMENTS

\$12-110-1	Application
\$12-110-2	Safety and health programs
\$12-110-3	Safety and health inspections
\$12-110-4	Employee responsibilities
\$12-110-5	Removal of safety devices
\$12-110-6	Use of intoxicants or drugs
\$12-110-7	Requirements of competence
\$12-110-8	Requirement of quality

§12-110-1

§§12-110-9 to 12-110-49 (Reserved)
§12-110-50 Standards

Historical Note: Chapter 110 of title 12 is based upon chapter 201 of the Hawaii Occupational Safety and Health Standards, Rules and Regulations. [Eff 7/11/74; am 6/7/76; am 12/30/76]

§12-110-1 Application. The general requirements of any chapter in part 3 shall not be used when there are more specific requirements in any other chapter in part 3. For the purposes of this part, construction work means work for construction, alteration, demolition, or repair including painting and decorating, erection of new electric transmission and distribution lines and equipment, and the alteration, conversion, and improvement of the existing transmission and distribution lines and equipment. [Eff 7/12/82; am 8/5/88; am 11/2/12; comp] (Auth: HRS §396-4) (Imp: HRS §396-4)

§12-110-2 Safety and health programs. (a) Scope and application. This [~~standard~~] section shall apply to all employers with employees doing business in the State.

- (1) Every employer shall comply with the [~~State~~] state laws and standards regarding a safe place of employment and safe practices, and shall do everything reasonable and necessary to protect the life, safety, and health of the employees.
- (2) Employers involved with construction or related activities shall provide safe and healthful work places and practices that

protect the employees and the affected general public as well.

- (3) Every employer shall effect safe work places and practices by eliminating, mitigating, or protecting against existing or potential hazards. Elimination by design, process substitution, or other appropriate methods is preferred because it obviates the need for further employee protection.

Modification, using such methods as engineering or administrative controls, isolation, and guarding, shall be used to reduce existing hazards. When this mitigation is feasible, it shall be effected expeditiously, with personal protective equipment required until an acceptable reduction of the hazard in the situation or condition is reached. Whenever it is not feasible to eliminate or reduce hazards to acceptable levels or where hazards continue to exist, personal protective equipment shall be provided and used.

~~[Exception:]~~ Exception: Employers with less than ~~[25]~~ ten (10) employees and not doing contract work with the State ~~[of Hawaii]~~ worth in excess of \$100,000 need not comply with subsection (b) (1) ~~[below]~~.

(b) Employer duties and responsibilities. An employer subject to this ~~[standard]~~ chapter shall meet the following requirements:

- (1) Written safety and health program.

(A) The employer shall institute and maintain an effective safety and health program to identify, evaluate and control workplace hazards. Employer safety and health programs that were developed prior to the promulgation of this standard may be used to satisfy this requirement so long as they meet the criteria for an acceptable program set forth in subparagraph (B) ~~[below]~~.

(B) The program shall at a minimum:

- (i) Set forth policies, procedures, and practices that recognize and protect employees from Occupational Safety and Health hazards.
- (ii) Establish and communicate a clear goal for the safety and health program and the mechanisms which will be utilized in meeting this goal.
- (iii) Provide for visible top management leadership in implementing the program and ensure that all workers at the site, including contract workers, are provided equally high quality safety and health protection, so that all will understand that management's commitment is serious.
- (iv) Provide for and encourage employee involvement in the structure and operation of the program and in decisions that affect their safety and health, so that they will commit their insight and energy to achieving the safety and health program's goal and objectives. Involvement shall be accomplished through employee collective bargaining units, where appropriate.
- (v) Assign and communicate responsibilities for all aspects of the safety and loss prevention program to managers, supervisors, and employees so that they all know and understand what is expected of them in the implementation of the program.
- (vi) Provide a system to hold managers, supervisors, and employees accountable for their

- (vii) responsibilities under the safety and health program.
- (viii) Provide a reliable system for employees to notify management personnel or safety and health committee members of conditions that appear hazardous or of [~~non-compliance~~] noncompliance with the terms of the safety and health program without fear of reprisal and provide a mechanism to ensure timely and appropriate responses to correct these conditions.
- (ix) Provide a mechanism to investigate accidents and "near miss" incidents, so that the root cause and means for preventing a recurrence are identified. For the purposes of this [~~rule,~~] chapter, the term "accident" means any unexpected happening that interrupts the work sequence or process and that may result in injury, illness, or property damage.
- (x) Provide a means to review injury and illness trends over time, so that patterns with common causes can be identified and eliminated.
- (xi) Establish a mechanism for the employer to conduct ongoing, periodic in-house safety and health inspections so that new or previously missed hazards or failures in controls are identified. Inspections shall be conducted with a frequency necessary to be effective but in no event with less frequency than that established in section 12-110-3.

- (xii) Address the impact of emergency situations and develop written plans and procedures to insure employee safety during emergencies. For the purpose of this standard, the term "emergency situation" means an unforeseen single event or combination of events that calls for immediate action to prevent, control, or contain injury or illness to person or damage to property.
 - (xiii) Establish procedures for transmitting and enforcing safe work practices in the workplace through training, positive reinforcement, such as a reward system, public recognition, etc., correction of unsafe performance, and, if necessary, reinforcement of work practices through a clearly defined and communicated disciplinary system.
- (C) The program shall be made available to the employees or their collective bargaining agent or both, upon request.
- (2) Safe work practices.
- (A) The employer shall eliminate or control all existing and potential hazards within the workplace in a timely manner, using one or more of the following:
 - (i) Engineering and work practice controls designed to control employee exposures to safety and health hazards by modifying the source to reduce exposure.
 - (ii) Administrative controls designed to control employee exposure to safety and health hazards.

- (iii) Requirements for the distribution and proper use of personal protective equipment.
 - (iv) A program of medical examinations or evaluations conducted by a qualified physician or health practitioner when required by a standard.
- (B) The employer shall ensure that practices are understood by all employees and are underscored through training, positive reinforcement, correction of unsafe performance, and, if necessary, through a clearly defined and communicated disciplinary system.
- (3) Periodic inspections. The employer shall conduct periodic in-house safety and health inspections so that new or previously missed hazards or failures in engineering, work practice, and administrative controls are identified. The in-house inspections will be conducted by individuals who are trained to recognize hazardous conditions, as members of the safety and health committee or a person designated and trained by the employer for the facility's safety and health program.
- (4) Safety and health training.
- (A) The employer shall develop and institute a safety and health-training program for all employees so they have an understanding of the hazards to which they may be exposed, and the procedures or practices needed to protect them from these hazards.
 - (B) In addition, supervisors and managers shall be trained in the elements of the employer's safety and health program and in the specific responsibilities assigned to them under the program.
 - (C) The employer shall ensure that the supervisors and managers understand

their responsibilities under the safety and health program and their importance to the safety and health of the workplace. In particular, the training for managers and supervisors shall enable them to:

- (i) Recognize potential hazards;
- (ii) Maintain safety and health protection in the work area; and
- (iii) Reinforce employee training on the nature of the potential hazards and required protective measures.

(c) The use of any machinery, tool, material, or equipment that is not in compliance with any applicable requirement of the standards of part 3 of this [~~title~~] subtitle is prohibited. The machine, tool, material, or equipment shall either be:

- (1) Identified as unsafe by tagging or locking the controls to render it inoperable; or
- (2) Removed from its place of operation.

(d) The employer shall permit only those employees qualified by training or experience to operate equipment and machinery.

(e) Accidents shall be reported in accordance with [~~S12-52-8.~~] chapter 12-52.1.

(f) Prime contractor and [~~sub-contractor~~] subcontractor responsibilities.

(1) By contracting for full performance of a contract, the prime contractor assumes all obligations prescribed as employer responsibilities under the law, whether or not any part of the work is subcontracted.

- (A) Where one contractor is selected to execute the work of a project, that contractor shall ensure compliance with the requirements of the standards of part 3 of this [~~title~~] subtitle from the contractor's own employees as well as from all [~~sub-contractor~~] subcontractor employees on the project.
- (B) Where the owner-builder, acting as the general contractor, selects another

person or persons to perform the work of a project, the owner-builder shall be responsible, or shall designate one ~~[particular]~~ person to be responsible, for providing the general safeguarding as well as gaining compliance with the requirements of the standards of part 3 of this ~~[title]~~ subtitle from all other persons engaged in the operation of the project.

- (2) Independent of any prime contractor's responsibilities, the ~~[sub-contractor]~~ subcontractor has responsibility for occupational safety and health for the ~~[sub-contractor's]~~ subcontractor's operation. That is, the ~~[sub-contractor]~~ subcontractor accepts responsibility for the ~~[sub-contractor's]~~ subcontractor's portion of the work while the prime contractor assumes the entire responsibility for the project.
- (3) Where joint responsibility exists, both the prime and ~~[sub-contractors]~~ subcontractors are subject to the enforcement provisions of the law; therefore, because of possible overlapping responsibilities, both may be cited for violations.

(g) All safety devices and safeguards in use shall be kept sound and operable.

(h) Any employee having knowledge of the existence of any unsafe device, practice, operation, safeguard, equipment, or condition shall promptly report it to the supervisor or person in charge. A supervisor or person in charge to whose attention the existence of any unsafe device, practice, operation, safeguard, equipment, or condition is called shall take immediate steps to correct the unsafe condition or practice. [Eff 7/12/82; am 9/27/84; am 8/5/88; am 9/21/96; am and comp] (Auth: HRS §396-4) (Imp: HRS §396-4)

§12-110-3 Safety and health inspections. (a)

The general contractor of every construction or demolition project on which employees are engaged shall arrange to have inspections made during the period of the project for the purpose of assuring compliance with the Hawaii Occupational Safety and Health Law. Where there is no general contractor, the owner shall be responsible or shall designate one particular contractor to be responsible to perform the necessary safety inspections.

(b) Inspections shall be conducted with sufficient quality, frequency, and scope to identify recognized hazards and ensure their correction in order to prevent workplace injuries, illnesses and fatalities. At minimum, inspections shall be in accordance with this schedule:

- (1) Projects employing [~~1~~] one (1) to [~~99~~] ninety-nine (99) persons, at any single moment in the work day, shall have an employee assigned to make at least one inspection each workday;
- (2) Projects employing [~~100~~] one hundred (100) to [~~199~~] one hundred ninety-nine (199) persons shall have two employees assigned, each to make at least one inspection each work day; and
- (3) Projects employing [~~200~~] two hundred (200) or more persons shall have one additional designated employee for each [~~300~~] three hundred (300) persons above [~~199~~] one hundred ninety-nine (199) each to make at least one inspection each workday.

Exception: Projects employing less than three (3) persons, need not comply with subsection (c).

(c) Written records of the daily safety and health inspections shall be kept on the project site for review by the director for the duration of the project. Inspection records shall include, at minimum, the following:

- (1) The date and start time of the inspection;
- (2) The name of the employee conducting the inspection;

§12-110-3

- (3) The scope (project areas) of the inspection, including the names of all contractors and subcontractors covered by the scope of the inspection;
 - (4) A brief description of all potential and actual hazards noted during the inspection;
 - (5) Name and title of the person responsible for correcting the identified hazards noted during the inspection;
 - (6) Information regarding how the hazard was eliminated, corrected, or abated including the inspector's recommendations for preventing the recurrence of the hazards.
- (d) Warning signs shall be posted prohibiting unauthorized persons from operating potentially hazardous machines or equipment. [Eff 7/12/82; am 9/27/84; am 11/2/12; am and comp]
(Auth: HRS §396-4) (Imp: HRS §396-4)

§12-110-4 Employee responsibilities. The employee shall not knowingly perform work in an unsafe manner or in an unsafe environment without the safeguards prescribed by the standards in part 3 of this [~~title.~~] subtitle. The employee shall not tamper with or render ineffective any safety device or safeguard and shall use the safety devices provided for personal protection. [Eff 7/12/82; am 9/27/84; am and comp] (Auth: HRS §396-4)
(Imp: HRS §396-4)

§12-110-5 Removal of safety devices. No person shall remove, displace, damage, destroy, or carry off any safety device, safeguard, notice, or warning furnished for use in any employment or place of employment. [Eff 7/12/82; am 9/27/84; comp] (Auth: HRS §396-4) (Imp: HRS §396-4)

§12-110-6

§12-110-6 Use of intoxicants or drugs. No person shall be permitted to work under the influence of intoxicants or drugs and shall be removed from the work premises if found under the influence of intoxicants or drugs. [Eff 7/12/82; am 9/27/84; comp] (Auth: HRS §396-4) (Imp: HRS §396-4)

§12-110-7 Requirements of competence. When work is to be performed by or under the supervision of a designated person, that person shall have the degree of competence necessary to perform or direct the work in a safe manner. [Eff 7/12/82; comp] (Auth: HRS §396-4) (Imp: HRS §396-4)

§12-110-8 Requirement of quality. Materials, devices, structures, and methods and procedures of operation which are required in part 3 of this [title] subtitle and which are described by general descriptive terms such as adequate, proper, and sufficient, shall be of such kind and quality as a reasonable and prudent person experienced in the work, as appropriate, would require in order to effect a safe operation. [Eff 7/12/82; am 9/27/84; am and comp] (Auth: HRS §396-4) (Imp: HRS §396-4)

[~~§12-110-9~~] §§12-110-9 to 12-110-49 Reserved.

§12-110-50 Standards. (a) Incorporation of federal standard. Title 29, Part 1926 of the Code of

Federal Regulations, [2012] 2017 Edition published as of July 1, [2012,] 2017, by the U.S. Government Printing Office, U.S. Superintendent of Documents, Washington, DC 20402-0001, is made a part of this chapter except as provided in ~~[subsection]~~ subsections (b) through (e).

(b) State specific standards. The following standards are in effect in addition to subsection (a). Where standards on a particular item exist for both subsection (a) and this subsection, the standards contained in this subsection supersede the standards in subsection (a).

- (1) ~~[29 C.F.R. 1926.32]~~ 29 C.F.R. §1926.32 is amended by adding the following definitions:

"Barricades" means an obstruction to deter the passage of persons or vehicles.

"Dwelling" means any building that contains one or two dwelling units used, intended, or designed to be built, used, rented, leased, let or hired out to be occupied, or that are occupied for living purposes.

"Dwelling unit" means a single unit providing complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation.

"Infeasible" means that it is impossible to perform the work using all available means and methods or that it is technologically impossible to use safety equipment or safe practices.

"Residential construction" means construction work on detached one- and two-family dwellings and townhouses not more than three stories above grade plane in height.

~~["Signs" are the warnings of hazard, temporarily or permanently affixed or placed, at locations where hazards exist.]~~

"Signals" are moving signs, provided by workers, such as flaggers, or by devices, such as flashing lights, to warn of possible or existing hazards.

"Signs" are the warnings of hazard, temporarily or permanently affixed or placed, at locations where hazards exist.

"Tags" are temporary signs, usually attached to a piece of equipment or part of a structure, to warn of existing or immediate hazards.

"Townhouse" means a single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from foundation to roof.

- (2) [~~29 CFR 1926.200(g)(2)~~] 29 C.F.R. §1926.200(g)(2) is amended to read as follows:

~~[(A)]~~ All traffic control signs or devices used for protection of construction workers shall conform to Part VI of the Manual of Uniform Traffic Control Devices (AMUTCD), Part VI of the Manual on Uniform Traffic Control Devices, Millennium Edition, December 2000, FHWA, which is incorporated by reference. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and [~~1 CFR part 51.~~] 1 C.F.R. part 51. You may obtain a copy of the Millennium Edition from the following organizations: American Traffic Safety Services Association, 15 Riverside Parkway, Suite 100, Fredericksburg, VA 22406-1022; Telephone: 1-800-231-3475; FAX: (540) 368-1722; www.atssa.com; Institute of Transportation Engineers, 1099 14th Street, NW., Suite 300 West, Washington, DC 20005-3438; FAX: (202) 289-7722; www.ite.org; and American Association of State Highway and Transportation Officials; www.aashto.org; Telephone: 1-800-231-3475; FAX: 1-800-525-5562. Electronic copies of the MUTCD 2000 are available for downloading at <http://mutcd.fhwa.dot.gov/knomillennium>. The document is available for inspection at the OSHA Docket Office, Room N2625, U.S. Department of Labor, 200 Constitution Avenue, NW., Washington, DC 20210 or at the Office of the Federal Register, 800 North

Capitol Street, NW., Suite 700, Washington, DC.

- (3) The following requirements [~~have been~~] are added to [~~29 CFR,~~] 29 C.F.R., Part 1926, Subpart R:
- (A) Personnel employed in steel erection shall always wear hard hats [~~at all times~~] while on the job site.
 - (B) Protective footwear as defined in ANSI Z41-1999, shall always be worn [~~at all times~~] while on the job site.
 - (C) Gloves, special protective clothing, respirators, and any other personal protective equipment shall be worn as necessary.
 - (D) There shall be maintained at the site a record of the identity of the Structural Engineer of Record (SER), all qualified persons and their area of expertise, and all competent persons for the steel erection activity.
 - (E) All approvals, certifications, authorizations, drawings, and plans required by this chapter shall be maintained onsite until all steel erection activity is completed.
- (4) The following definitions in [~~29 CFR 1926.751~~] 29 C.F.R. §1926.751 [~~have been~~] are amended to read as follows:

"Hole" means a gap or void more than [~~2~~] two (2) inches (5.1 cm) in its least dimension in a floor, roof, or other walking/working surface. Pre-engineered holes in cellular decking (for wires, cables, etc.) are not included in this definition. "Opening" means a gap or void [~~5~~] five (5) inches (12.7 cm) or more in its least dimension in a floor, roof, or other walking/working

- surface. For the purposes of this subpart, skylights and smoke domes that do not meet the strength requirements of [~~section 1926.754(e)(3)~~] 29 C.F.R. §1926.754(e)(3) shall be regarded as openings.
- (5) [~~29 CFR 1926.752(a)~~] 29 C.F.R. §1926.752(a) is amended to read as follows:

Approval to begin steel erection. Before authorizing the commencement of steel erection, the controlling contractor shall ensure that there are steel erection drawings that are structure specific and a site-specific erection plan as required. In addition, the steel erector is to be provided with the following written notifications, including the documentation supporting the determinations:

- (A) The concrete in the footings, piers, and walls and the mortar in the masonry piers and walls has attained, on the basis of an appropriate ASTM standard test method of field-cured samples, either [~~75 percent~~] seventy-five (75) per cent of the intended minimum compressive design strength or sufficient strength to support the loads imposed during steel erection.
- (B) Any repairs, replacements, and modifications to the anchor bolts were conducted in accordance with [~~section 1926.755(b)~~] 29 C.F.R. §1926.755(b).
- (6) [~~29 CFR 1926.752(b)~~] 29 C.F.R. §1926.752(b) is amended to read as follows:

Commencement of steel erection. A steel erection contractor shall not erect steel unless it has received written notification and documentation supporting the determination that the concrete in the footings, piers, and walls or the mortar in the masonry piers and walls has attained,

~~[on the basis of]~~ based on an appropriate ASTM standard test method of field-cured samples, either ~~[75]~~ seventy-five (75) percent of the intended minimum compressive design strength or sufficient strength to support the loads imposed during steel erection.

- (7) ~~[29 CFR 1926.752(d)]~~ 29 C.F.R. §1926.752(d) is amended to read as follows:

Pre-planning of overhead hoisting operations. All hoisting operations in steel erection shall be pre-planned by the controlling contractor to ensure that the requirements of ~~[section 1926.753(d)]~~ 29 C.F.R. §1926.753(d) are met.

- (8) ~~[29 CFR 1926.752(e)]~~ 29 C.F.R. §1926.752(e) is amended to read as follows:

~~[Site-specific]~~ Site specific erection plan. Where employers elect, due to conditions specific to the site, to develop alternate means and methods that provide employee protection in accordance with ~~[sections]~~ [1926.753(e)(5), 1926.754(b)(1) & (2), 1926.756(a)(1), 1926.756(b), 1926.757(a)(2), 1926.757(a)(4), 1926.757(e)(4), or 12-110-50(e),] 29 C.F.R. §1926.753(c)(5), §1926.754(b)(1) and (2), §1926.756(a)(1), §1926.756(b), §1926.757(a)(2), §1926.757(a)(4), §1926.757(e)(4), or 12-110-50(c), a ~~[site-specific]~~ site specific erection plan ~~[which]~~ that includes structure specific erection plans and drawings where applicable shall be developed by a qualified person and be available at the work site until all steel erection activity is completed. Guidelines for establishing a ~~[site-specific]~~ site specific erection plan are contained in 29 C.F.R. 1926 Subpart R Appendix A ~~[to this section.]~~.

- (9) [~~29 CFR 1926.753(c)(1)(i)~~] 29 C.F.R. §1926.753(c)(1)(i) is amended to read as follows:

Cranes being used in steel erection activities shall be visually inspected prior to each shift by a competent person; the inspection shall include observation for potential deficiencies that may occur during operation. At a minimum this inspection shall include the following:

- (A) All control mechanisms for maladjustments;
- (B) Control and drive mechanism for excessive wear of components and contamination by lubricants, water, or other foreign matter;
- (C) Safety devices, including but not limited to boom angle indicators, boom stops, boom kick out devices, anti-two block devices, and load moment indicators where required;
- (D) Air, hydraulic, and other pressurized lines for deterioration or leakage, particularly those [~~which~~] that flex in normal operation;
- (E) Hooks and latches for deformation, chemical damage, cracks, or wear;
- (F) Wire rope reeving for compliance with hoisting equipment manufacturer's specifications;
- (G) Electrical apparatus for malfunctioning, signs of excessive deterioration, dirt, or moisture accumulation;
- (H) Hydraulic system for proper fluid level;
- (I) Tires for proper inflation and condition;

- (J) Ground conditions around the hoisting equipment for proper support, including ground settling under and around outriggers, ground water accumulation, or similar conditions;
 - (K) The hoisting equipment for level position; and
 - (L) The hoisting equipment for level position after each move and setup.
- (10) [~~29 CFR 1926.753(e)(1)(iv)~~] 29 C.F.R. §1926.753(c)(1)(iv) is amended to read as follows:

The operator shall be responsible for those operations under the operator's direct control. Whenever there is any doubt as to safety, the operator shall have the authority to stop and refuse to handle loads, in accordance with section 12-57-7(b), until safety has been assured.

- (11) [~~29 CFR 1926.753(e)(5)(i)~~] 29 C.F.R. §1926.753(c)(5)(i) is amended to read as follows:

During the hoisting and placing of purlins and single joists when the rigger, who shall be a qualified rigger, has determined that safety latched on hooks are a greater hazard, or

- (12) [~~29 CFR 1926.753(d)(1)~~] 29 C.F.R. §1926.753(d)(1) is amended to read as follows:

Routes for suspended loads shall be pre-planned by the controlling contractor to ensure that no employee is required to work directly below a suspended load except for:

- (A) Employees engaged in the initial connection of the steel; or
- (B) Employees necessary for the hooking or unhooking of the load.

- (13) [~~29 CFR 1926.753(e)(2)~~] 29 C.F.R. §1926.753(e)(2) is amended to read as follows:

Components of the multiple lift rigging assembly shall be specifically designed and assembled with a maximum capacity for total assembly and for each individual attachment point. This capacity, certified by the manufacturer or a qualified rigger, shall be based on the manufacturer's specifications with a [~~5 to 1~~] five (5) to one (1) safety factor for all components. The written certification of the components of the multiple rigging assembly by the manufacturer or qualified rigger along with the documentation supporting the certification shall be made available at the site.

- (14) [~~29 CFR 1926.753(e)(4)(i)~~] 29 C.F.R. §1926.753(e)(4)(i) is amended to read as follows:

The multiple lift rigging assembly shall be rigged with members:
Attached at their center of gravity and maintained level such as by the use of tag lines[+].

- (15) [~~29 CFR 1926.754(b)~~] 29 C.F.R. §1926.754(b) is amended to read as follows:

The following additional requirements shall apply for [~~multi-story~~] multistory structures:

- (A) The permanent floors shall be installed as the erection of structural members progresses, and there shall be not more than eight stories between the erection floor and the upper-most permanent floor, except where the structural integrity is maintained as a result of

the design and is included in the site-specific erection plan.

(B) At no time shall there be more than four (4) floors or [~~48~~] forty-eight (48) feet (14.6 m), whichever is less, of unfinished bolting or welding above the foundation or uppermost permanently secured floor, except where the structural integrity is maintained as a result of the design and is included in the site-specific erection plan.

(C) A fully planked or decked floor or nets shall be maintained within two stories or [~~30~~] thirty (30) feet (9.1 m), whichever is less, directly under any erection work being performed.

(16) [~~29 CFR 1926.756(a)(1)~~] 29 C.F.R. §1926.756(a)(1) is amended to read as follows:

During the final placing of solid web structural members, the load shall not be released from the hoisting line until the members are secured with at least two (2) bolts per connection, of the same size and strength as shown in the erection drawings, drawn up wrench-tight or the equivalent as specified by the project structural engineer of record and contained in the [~~site-specific~~] site specific erection plan, except as specified in 29 C.F.R. §1926.756(b).

(17) [~~29 CFR 1926.756(b)~~] 29 C.F.R. §1926.756(b) is amended to read as follows:

Diagonal bracing. Solid web structural members used as diagonal bracing shall be secured by at least one (1) bolt per connection drawn up wrench-tight or the equivalent as specified by the project structural engineer of record and contained

- in the [~~site-specific~~] site specific erection plan.
- (18) The following requirement [~~has been~~] is added to [~~29 CFR 1926.756(e)~~] 29 C.F.R. §1926.756(c):

If a seat or equivalent device is used, its use and the connection method shall be specified in the site-specific erection plan.

- (19) [~~29 CFR 1926.757(a)(2)(i)(D)~~] 29 C.F.R. §1926.757(a)(2)(i)(D) is amended to read as follows:

Be included in the structure specific erection drawings and site-specific erection plans.

- (20) [~~29 CFR 1926.757(a)(7)~~] 29 C.F.R. §1926.757(a)(7) is amended to read as follows:

No modification that affects the strength of a steel joist or steel joist girder shall be made without the written approval of the project structural engineer of record.

- (21) [~~29 CFR 1926.757(d)(6)(i)~~] 29 C.F.R. §1926.757(d)(6)(i) is amended to read as follows:

The bridging shall be indicated on the structure specific erection drawing;

- (22) [~~29 CFR 1926.760~~] 29 C.F.R. §1926.760 is amended to read as follows:

(A) General requirements.

- (i) Each employee including connectors, engaged in a steel erection activity who is on a walking/working surface with an unprotected side or edge [~~10~~] ten (10) feet (3.1 m) or more above a lower level shall be protected

- from fall hazards by guardrail systems, safety net systems, personal fall arrest systems, positioning device systems or fall restraint systems.
- (ii) Perimeter safety cables. On multi-story structures, perimeter safety cables shall be installed at the final interior and exterior perimeters of the floors as soon as the metal decking has been installed. Perimeter safety cables shall meet the criteria for guardrail systems in 29 C.F.R. 1926 Subpart R Appendix G.
 - (iii) Employees performing leading edge work in controlled decking zones shall be protected from fall hazards as provided in subparagraph (B).
- (B) Controlled Decking Zone (CDZ). A controlled decking zone may be established where fall protection systems as described in subparagraph ~~[(A)(1)]~~ (A)(i) have been determined to be infeasible. The burden of proving infeasibility is that of the employer. For each CDZ, the following shall apply:
- (i) Leading edge work is being performed at heights of ~~[10]~~ ten (10) feet (3.1 m) or more and up to ~~[30]~~ thirty (30) feet (9 m) above the next lower level.
 - (ii) The boundaries of a CDZ shall be designated and clearly marked by control lines or the equivalent.
 - (iii) Control lines provide a visible, tangible reference and constant reminder to employees working in a CDZ.
 - (iv) A control line for a CDZ shall be

- erected not less than [~~6~~] six (6) feet (1.8 m) nor more than [~~90~~] ninety (90) feet (27.4 m) from the leading edge.
- (v) A control line for a CDZ shall not be more than [~~90~~] ninety (90) feet (37.4 m) wide.
 - (vi) Control lines shall extend along the entire length on the unprotected or leading edge and are approximately parallel to the unprotected or leading edge.
 - (vii) Control lines consist of ropes, wires, tapes, or equivalent materials, and supporting structures such as guardrail system, wall, stanchion, or other suitable anchorage.
 - (viii) Each line shall have a minimum breaking strength of [~~200~~] two hundred (200) pounds [(90.0 kg)] ninety (90).
 - (ix) Each line shall be rigged and supported in such a way that its lowest point (including sag) is not less than [~~39~~] thirty-nine (39) inches (1.0 m) from the walking/working surface and its highest point is not more than [~~45~~] forty-five (45) inches (1.3 m) from the walking/working surface.
 - (x) A painted line on the walking/working surface is not equivalent to control lines and may not be used to demonstrate, define, or mark the boundary of a CDZ.
 - (xi) A sign or other warning indicator positioned at the entrance to a CDZ is not an equivalent to

- control lines and may not be used in lieu of control lines or its equivalent.
- (xii) Each employee working in a CDZ shall have completed CDZ training in accordance with [~~section 1926.761~~] 29 C.F.R. §1926.761.
 - (xiii) Each employee working in a CDZ shall have completed CDZ training in accordance with [~~section 1926.761~~] 29 C.F.R. §1926.761.
 - (xiv) Unsecured decking in a CDZ shall not exceed 3,000 square feet (914.4 m²).
 - (xv) Safety deck attachments (see definitions) shall be performed in the CDZ from the leading edge back to the control line and shall have at least two attachments for each metal decking panel.
 - (xvi) Final deck attachments and installation of shear connectors shall not be performed in the CDZ.
 - (xvii) A current and accurate list of employees who are authorized to work in the CDZ shall be maintained at the site. Authorized employees shall further be separately identified such that non-authorized access to the CDZ can be immediately noted and promptly addressed. Employees not authorized to work in the CDZ shall not be permitted to enter the CDZ.
- (C) Criteria for fall protection equipment.
- (i) Guardrail systems, safety net systems, personal fall arrest systems, positioning device systems, and their components shall conform to the criteria in 29

C.F.R. §1926.502 (see 29 C.F.R. 1926 Subpart R Appendix G [~~to this chapter~~]).

- (ii) Fall arrest system components shall be used in fall restraint systems and shall conform to the criteria in 29 C.F.R. §1926.502 (see 29 C.F.R. 1926 Subpart R Appendix G [~~to this chapter~~]), except that the anchorages for a fall restraint system shall be capable of supporting at least 3,000 lbs (4.5 kN) per employee attached. Either body belts or body harnesses shall be used in fall restraint systems.
 - (iii) Perimeter safety cables shall meet the criteria for guardrail systems in 29 C.F.R. §1926.502 (see 29 C.F.R. 1926 Subpart R Appendix G [~~to this chapter~~]).
- (D) Custody of fall protection. Fall protection and fall protection components provided by the steel erector shall not remain in the area where steel erection activity has been completed, unless responsibility has been assumed by the controlling contractor or its authorized representative:
- (i) Has directed the steel erector to leave the fall protection in place; and
 - (ii) Has inspected and accepted control and responsibility of the fall protection prior to authorizing persons other than steel erectors to work in the area.
- (23) [~~29 CFR 1926.761~~] 29 C.F.R. §1926.761 is amended to read as follows:

The following provisions are supplemental to the requirements regarding the hazards addressed in this chapter.

- (A) Training personnel. Training required by this section shall be provided by a qualified person(s).
- (B) Fall hazard training. The employer shall train each employee exposed to a fall hazard in accordance with the requirements of this section. The employer shall institute a training program and ensure employee participation in the program.
 - (i) The recognition and identification of fall hazards in the work area;
 - (ii) The use and operation of the fall protection systems to be used by the employer and in the systems that may be encountered on the jobsite; e.g., guardrail systems (including perimeter safety cable systems), personal fall arrest systems, positioning device systems, fall restraint systems, safety net systems, and other protection to be used;
 - (iii) The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used;
 - (iv) The procedures to be followed to prevent falls to lower levels and through or into holes and openings in walking/working surfaces and walls; and
 - (v) The fall protection requirements of this chapter.
- (C) Falling object or [falling/flying] falling or flying load hazard training. The employer shall provide a training program for all employees exposed to

- falling object [~~and/or~~] or
~~[falling/flying]~~ falling or flying load
hazards[-] or both. The program shall
include training and instruction in the
following areas:
- (i) How to recognize falling/flying
objects hazards in the work area;
 - (ii) The consequences, including the
likely injuries, from being hit or
struck by falling/flying objects
or loads;
 - (iii) What means, methods, [~~and/or~~] or
protective systems or combination
will be used to provide protection
from falling/flying objects or
loads;
 - (iv) The employees' specific
responsibilities with respect to
identifying hazards, identifying
when protective systems have been
compromised, and what actions to
take to assist in their own and
other employees' safety.
- (D) Reliance on a third party provider of
training. The employer may not rely on
a third party or former employer of
current employees unless the employer
has determined through testing and
evaluation of employees that the past
training has met the requirements of
this chapter. Generic training must be
supplemented with site-specific
information and an opportunity to
practice using the equipment that is
specific to the jobsite.
- (E) Retraining. When the employer has
reason to believe that any affected
employee has already been trained does
not have the understanding and skill
required by this chapter, the employer
shall retrain or provide [~~re-training~~]
retraining or additional training.

Circumstances where retraining or additional training is required include, but ~~is~~ are not limited to, situations where:

- (i) Changes in the workplace render previous training obsolete; ~~or~~
 - (ii) Changes in the types of fall protection systems or equipment to be used render previous training obsolete; or
 - (iii) Inadequacies in an affected employees knowledge or use of fall protection systems, hazard controls, or equipment to be used indicate that the employee had not retained the requisite understanding or skill.
- (F) Special training programs. In addition to the training required in paragraphs (1) and (2), the employer shall provide special training to employees engaged in the following activities.
- (i) Multiple lift rigging procedure. The employer shall ensure that each employee who performs multiple lift rigging has been provided training in the ~~following areas:~~
 - ~~(a) The nature of the hazards associated with multiple lifts; and~~
 - ~~(b) The proper procedures and equipment to perform multiple lifts required by section 1926.753(e).]~~

nature of the hazards associated with multiple lifts, and the proper procedures and equipment to perform multiple lifts required by 29 C.F.R. §1926.753(c).
 - (ii) Connector procedures. The

employer shall ensure that each connector has been provided training in the [~~following areas:~~

- ~~(a) The nature of the hazards associated with connecting; and~~
- ~~(b) The establishment, access, proper connecting techniques and work practices required by sections~~

~~1926.756(e) and 12-110-50(p).]~~

nature of hazards associated with connecting as well as the

establishment, access, proper connecting techniques, and work

practices required by 29 C.F.R.

§1926.756(c) and 12-110-50(p).

(iii)

Controlled Decking Zone

Procedures. Where CDZs are being

used, the employer shall assure

that each employee has been

provided training in the

~~[following areas:~~

- ~~(a) The nature of the hazards associated with work within a controlled decking zone; and~~

- ~~(b) The establishment, access, proper installation techniques, and work practices required by sections 1926.760 and~~

~~1926.754(e).]~~

nature of the hazards of working

within a controlled decking zone

as well as the establishment,

access, proper installation

techniques, and work practices

required by 29 C.F.R.

§1926.754(c) and §1926.760.

(G) Certification of training.

- [±] (i) The employer shall certify that each affected employee has been trained or evaluated and determined to be trained as required by this section.

[2] (ii) The written certification record shall contain the name or other unique identity of the employee trained, the date(s) of the training or the evaluation of prior training, and the signature of the person who conducted the training or the signature of the employer.

[3] (iii) The latest training certification shall be maintained and made readily available to employees, employee representatives and the director. [“]

(24) [~~29 CFR 1926,~~] 29 C.F.R. §1926, Subpart R Appendix A, subsection (a) is amended to read as follows:

[~~(A)~~] General. This appendix serves as a guideline to assist employers who elect to develop a [~~site-specific~~] site specific erection plan in accordance with [~~section 1926.752(e)~~] 29 C.F.R. §1926.752(c) with alternate means and methods to provide employee protection in accordance with [~~CFR sections 1926.752(e), 1926.753(c)(5), 1926.754(b)(1)&(2), 1926.756(a)(1), 1926.756(b), [12-110-50(b)(16),~~] 1926.757(a)(2), 1926.757(a)(4), [and] 1926.757(e)(4)] 29 C.F.R. §1926.752(e), §1926.753(c)(5), §1926.754(b)(1)&(2), §1926.756(a)(1), §1926.756(b), §1926.757(a)(2), §1926.757(a)(4), §1926.757(e)(4) and 12-110-50(b)(16).

(25) [~~29 CFR 1926.1427(a)(4)~~] 29 C.F.R. §1926.1427(a)(4) is amended to read as follows:

[~~(A)~~] Whenever operator qualification or certification is required under 29 C.F.R. §1926.1427, the employer must provide the

qualification or certification at no cost to operators who are employed by the employer on November 8, 2011.

- (26) [~~29 CFR 1926.1427~~] 29 C.F.R. §1926.1427 is amended by the deletion of paragraphs (b), (c), and (d). Operators in Hawaii are required to be certified under the requirements of chapter 12-48, Hawaii Administrative Rules.
- (27) [~~29 CFR 1926.1427(f)~~] 29 C.F.R. §1926.1427(f) is amended to read as follows with [~~29 CFR 1926.1427(f)(4)(i), (ii), and (iii)~~] 29 C.F.R. §1926.1427(f)(4)(i), (ii), and (iii) deleted:

[~~(A)~~] Continuous monitoring. The operator-in-training must be monitored by the operator's trainer at all times.

- (28) [~~29 CFR 1926.1427(k)(1)~~] 29 C.F.R. §1926.1427(k)(1) is amended to read as follows:

[~~(A)~~] The provisions of this section are applicable November 8, 2011. [~~operators~~] Operators who were not required to be certified under [~~Chapter 45~~] chapter 48, Hawaii Administrative Rules, as of May 18, 2011 must comply with [~~paragraph~~] subsection (f) beginning November 9, 2012.

- (29) [~~29 CFR 1926.1427(k)~~] 29 C.F.R. §1926.1427(k) is amended by the deletion of subparagraph (k)(2).
- (30) [~~29 CFR 1926.1430(e)(2)~~] 29 C.F.R. §1926.1430(c)(2) is amended to read as follows:

[~~(A)~~] Transitional Period. During the [~~one-year phase-in~~] one year phase in period for operator certification or qualification, as provided in 29 C.F.R. §1926.1427(k), employers must train each operator which has not yet been certified or qualified in the

§12-110-50

areas addressed in 29 C.F.R. §1926.1427(j)."
[Eff 2/13/12; am 11/2/12; am and
comp) (Auth HRS §396-4)
(Imp: HRS §396-4)

Historical Note: Section §12-110-50 is based
substantially upon Part 3. [Eff 2/26/93, am 11/5/93,
am 7/25/94, am 8/10/95, am 1/26/96, am 9/21/96, am
11/16/96, am 2/8/97, am 10/23/97, am 7/6/98, am
3/29/99, am 12/29/00, am 1/10/03, am 5/21/04, am
5/5/05, am 9/1/05, am 3/31/06, am 12/21/06, am
4/19/07, am 8/26/07, am 5/2/08, am 7/27/09; R 2/13/12]

6. Chapter 12-170, Hawaii Administrative Rules, entitled "Shipyards", is amended and compiled to read as follows:

"HAWAII ADMINSTRATIVE RULES

TITLE 12

DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS

SUBTITLE 8

HAWAII OCCUPATIONAL SAFETY AND HEALTH DIVISION

PART 5

OCCUPATIONAL SAFETY AND HEALTH STANDARDS
FOR SHIPYARD EMPLOYMENT

CHAPTER 170

SHIPYARDS

§12-170-1 Incorporation ~~by reference~~ [of federal standard]

§12-170-1 Incorporation of federal standard. Title 29, Part 1915 of the Code of Federal Regulations, [~~2012~~] 2017 Edition published as of July 1, [~~2012~~,] 2017, by the U.S. Government Printing Office, U.S. Superintendent of Documents, Washington, DC 20402-0001, is made a part of this chapter." [Eff 3/23/01; am 1/10/03; am 9/01/05; am 3/31/06; am 12/21/06; am 4/19/07; am 8/26/07; am 5/02/08; am 7/27/09; am 2/13/12; am 11/2/12; am and Comp] (Auth: HRS §396-4) (Imp: HRS §396-4)

7. Chapter 12-180, Hawaii Administrative Rules, entitled "Marine Terminals", is amended and compiled to read as follows:

"HAWAII ADMINSTRATIVE RULES

TITLE 12

DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS

SUBTITLE 8

HAWAII OCCUPATIONAL SAFETY AND HEALTH DIVISION

PART 6

MARINE TERMINALS

CHAPTER 180

MARINE TERMINALS

~~§12-180-1 Incorporation by reference [of federal standard]~~

§12-180-1 Incorporation of federal standard.
Title 29, Part 1917 of the Code of Federal

Regulations, [~~2012~~] 2017 Edition published as of July 1, [~~2012,~~] 2017, by the U.S. Government Printing Office, U.S. Superintendent of Documents, Washington, DC 20402-0001, is made a part of this chapter." [Eff 3/23/01; am 12/21/06; am 5/02/08; am 7/27/09; am 2/13/12; am 11/2/12; am and comp]
(Auth: HRS §396-4) (Imp: HRS §396-4)

8. Chapter 12-190, Hawaii Administrative Rules, entitled "Safety and Health Regulations for Longshoring", is amended and compiled to read as follows:

"HAWAII ADMINSTRATIVE RULES

TITLE 12

DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS

SUBTITLE 8

HAWAII OCCUPATIONAL SAFETY AND HEALTH DIVISION

PART 7

SAFETY AND HEALTH REGULATIONS FOR LONGSHORING

CHAPTER 190

LONGSHORING

§12-190-1 ~~Incorporation by reference~~ [of federal standard]

§12-190-1 Incorporation of federal standard.
Title 29, Part 1917 of the Code of Federal Regulations, [2012] 2017 Edition published as of July

§12-190-1

1, [~~2012,~~] 2017, by the U.S. Government Printing Office, U.S. Superintendent of Documents, Washington, DC 20402-0001, is made a part of this chapter." [Eff 3/23/01; am 12/21/06; am 5/02/08; am 7/27/09; am 2/13/12; am 11/2/12; am and comp]
(Auth: HRS §396-4) (Imp: HRS §396-4)

9. Chapter 12-208, Hawaii Administrative Rules, entitled "Other Safety and Health Standards", is amended and compiled to read as follows:

"HAWAII ADMINSTRATIVE RULES

TITLE 12

DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS

SUBTITLE 8

HAWAII OCCUPATIONAL SAFETY AND HEALTH DIVISION

PART 8

OTHER SAFETY AND HEALTH STANDARDS

CHAPTER 208

OCCUPATIONAL SAFETY AND HEALTH STANDARDS FOR AGRICULTURE

§12-208-1 Incorporation of federal standard

Historical note: Chapter 12-208 is based substantially upon section 12-67.2-1 [Eff 12/29/01; R 2/13/12], section 12-73.1-1 [Eff 12/29/01; am 4/29/02; am 12/21/06; am 4/19/07; R 2/13/12], and section 12-80.1-1 [Eff 12/29/01; R 2/13/12]

§12-208-1

§12-208-1 Incorporation of federal standard.

Title 29, Part 1928 of the Code of Federal Regulations, [~~2011~~] 2017 Edition published as of July 1, [~~2011,~~] 2017, by the U.S. Government Printing Office, U.S. Superintendent of Documents, Washington, DC 20402-0001, is made a part of this chapter." [Eff 2/13/12; am and comp] (Auth: HRS §396-4) (Imp: HRS §396-4)

10. Material, except source notes, to be repealed is bracketed and stricken. New material is underscored.

11. Additions to update source notes to reflect these amendments are not underscored.

12. These amendments to and compilation of chapters 12-50, 12-52.1, 12-56, 12-60, 12-110, 12-170, 12-180, and 12-190, Hawaii Administrative Rules, shall take effect ten days after filing with the Office of the Lieutenant Governor.

I certify that the foregoing are copies of the rules, drafted in the Ramseyer format pursuant to the requirements of section 91-4.1, Hawaii Revised Statutes, which were adopted on _____, and filed with the Office of the Lieutenant Governor.

LEONARD HOSHIJO
Director of Labor and
Industrial Relations

APPROVED AS TO FORM:

Deputy Attorney General