

Job Hazard Analysis



University of Washington – Seattle Campus
 Facilities Services – Campus Energy, Utilities & Operations
 Seattle, WA 98195

Working Job Title: Plumber/Pipe/Steamfitter & Lead (Shop 43)

JHA Completed by Shop 43 Manager

Date: Nov 2019

The Job Hazard Analysis form is designed to help supervisors assess and address health and safety hazards that have the potential to cause serious injury or illness (e.g. power tools, electrical repairs). Supervisors can use this document to train staff on safe work procedures.

The information below is a good faith effort to identify hazards encountered by Plumber/Pipe/Steamfitter & Lead (Shop 43). If a specific job task is not listed below, contact your supervisor to determine if a specific job hazard analysis or work plan is required.

The baseline training requirements for this position are:

- Asbestos Awareness
- Driver Safety and Awareness Online
- Fire Extinguisher Hands On
- First aid & CPR
- Hepatitis B Vaccination (must be offered)
- Monthly shop safety meetings on PPE, shop safety standard operating procedures and SDS
- Bloodborne Pathogens for Non-Lab Online
- Ergonomic Online training (optional)
- Fire Extinguisher Online
- HazCom/GHS
- Lead Awareness Online
- Covid-19 Safety Training: Back to the Workplace

This document will serve as the certification of hazard assessment for personal protective equipment for the above working job title position.

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
Driving vehicles	<ul style="list-style-type: none"> Bodily injury 	<ul style="list-style-type: none"> Daily pre-trip vehicle inspection Follow all traffic rules Maintain current driver's license Report problems with state vehicles 	Task Specific Training <ul style="list-style-type: none"> Driver Safety and Awareness Monthly shop safety meetings on PPE Seatbelt use policy PPE <ul style="list-style-type: none"> Seatbelt
Computer work	<ul style="list-style-type: none"> Eye strain Ergonomic problems such as carpal tunnel and back problems 	<ul style="list-style-type: none"> Adequate lighting Request on Ergonomic evaluation from EH&S Review ergonomic info on EH&S website Take frequent breaks/stretch/move 	Task Specific Training <ul style="list-style-type: none"> Ergonomic Online training (optional) PPE <ul style="list-style-type: none"> None
General use of hand and power tools such as screwdrivers, wrenches, hammers, drills, reciprocating saw	<ul style="list-style-type: none"> Bodily injury 	<ul style="list-style-type: none"> Follow industry safety standards for operating power/hand tools Location of exits Location of fire extinguisher Location of first aid kit Safety Data Sheets (SDS) for chemical and products 	Task Specific Training <ul style="list-style-type: none"> Monthly shop safety meetings on PPE and SDS PPE <ul style="list-style-type: none"> Gloves (as needed) Hearing protection (as needed) Impact glasses (as needed) Substantial footwear
Maintain inventory supplies	<ul style="list-style-type: none"> Ergonomic problems such as carpal tunnel and back problems Work off ladders 	<ul style="list-style-type: none"> Get help or use lifting tools for items exceeding 50 pounds or is an awkward shape Request an ergonomic evaluation from EH&S Set-up work station using ergonomic principles Take frequent breaks/stretch Use hand cart 	Task Specific Training <ul style="list-style-type: none"> Back protection & Lifting Safety Online Ergonomic Online training (optional) Ladder Safety Hands On Ladder Safety Online Monthly shop safety meetings on PPE PPE <ul style="list-style-type: none"> Dusk mask (as needed) Safety glasses (as needed) Substantial footwear
Cell phone usage	<ul style="list-style-type: none"> Inattention leading to bodily injury 	<ul style="list-style-type: none"> Be aware of your surroundings Don't drive and talk unless utilizing a 'hands-free' device 	Task Specific Training <ul style="list-style-type: none"> Driver Safety and Awareness PPE <ul style="list-style-type: none"> None

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<p>Maintain, troubleshoot and repair piping for steam, chilled water, hot water, heating, condensate and compressed air systems</p>	<ul style="list-style-type: none"> • Airborne contaminants (such as odors, mold, fume, refrigerant leak) • Biological hazards (such as blood, needles, vials) • Compressed gasses (such as welding gasses) • Confined spaces (such as crawl space, ceiling plenums) • Ergonomic problems such as lifting, repetitive motion, awkward posture • Fall hazard • Hazardous chemicals (such as solvents) • Hazardous energy (mechanical, heat, pressure (gas or liquid lines)) • Heat stress • Insufficient lighting • Material Handling (ie, forklift, hoisting/rigging) • Noise • Pedestrian traffic • Power/Hand tools • Regulated materials such as asbestos, lead, silica • Slip/trip/fall • Scaffolding • UW light (radiant energy – radio frequency) • Vermin feces (such as rodent) • Work off/use of ladders 	<ul style="list-style-type: none"> • Avoid energized electrical work when possible • Barricades/signs/spotter (if applicable) • Building system shutdown • Check-in with the department / building coordinator / control room prior to work • Confined space permit (if applicable) • Ensure work area is clear from spills and trip hazards • Fall protection work plan (if applicable) • 4-gas monitor (ie Bacharach) • Get help or use lifting tools for items exceeding 50 pounds, or is an awkward shape • Hot Work Permit (such as soldering, cutting, grinding) if applicable • If hot, drink water and take necessary rest breaks • Lift (MEWP: scissor, boom, bucket) • Lockout procedure, LOTO locks & tags • Location of exits • Location of fire extinguisher • Location of first aid kit • Pest Contractor – as needed • Refrigerant leak SOP (if applicable) • Safety Data Sheets (SDS) for chemical and products • Shop safety standard operating procedures • This job position does not typically perform work on regulated building materials • Tool tethering and toe boards • Understand and implement industry safety standards for operating power/hand tools • Understand and implement regulatory practices / standards for operating a forklift • Understand and implement regulatory practices / standards for operating a hoist • Use temporary lighting (such as flashlights, head lamps) 	<p>Task Specific Training</p> <ul style="list-style-type: none"> • Audiometric Hearing Test • Back protection & Lifting Safety Online • Compressed Gas Safety Online • Confined Space Entry /Hands On • Department specific training • Fall Protection • Forklift Operator Safety • Hoisting and Rigging • Hearing Protection/Conservation Online • Ladder Safety Hands On • Ladder Safety Online • Lockout/Tagout Safety • MEWP training with scissor & aerial evaluation • Radio-Frequency Radiation Safety Awareness • Refrigerant Monitoring • Scaffold Safety • Supv LOTO Field Evaluation <p>PPE (as required unless noted as needed)</p> <ul style="list-style-type: none"> • Dust mask -as needed • Gloves - as needed • Hard hat • Head light / Flashlight / temporary lighting • Hearing protection - as needed • Impact glasses/goggles – as needed • Personal fall restraint/arrest equipment • Steel toe footwear • Substantial footwear • Shop coveralls – as needed

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
<p>Assist construction contractors (on contractor managed construction sites) with connection of new buildings and renovated buildings to the campus piping distribution systems.</p> <p>Activities include, but are not limited to, isolate systems, shutdown systems, inspect contractor's work and start up systems when completed.</p> <p>Construction activities include, but are not limited to, hazardous chemicals, pressure testing, materials management, etc.</p>	<ul style="list-style-type: none"> • Airborne contaminants (such as odors, mold, fume, refrigerant leak) • Biological hazards (such as blood) • Confined spaces (such as crawl space, ceiling plenums) • Construction activities • Ergonomic problems such as lifting, repetitive motion, awkward posture • Fall hazard • Hazardous energy (mechanical, heat, pressure (gas or liquid lines)) • Heat stress • Insufficient lighting • Noise • Overhead equipment/hazards • Power/Hand tools • Regulated materials such as asbestos, lead, silica • Slip/trip/fall • Scaffolding • Vehicle traffic • Vermin feces • Work off/use of ladders 	<ul style="list-style-type: none"> • Avoid energized electrical work when possible • Building system shutdown • Check-in with the construction contact person • Confined space permit (if applicable) • Ensure work area is clear from spills and trip hazards • Fall protection work plan (if applicable) • Get help or use lifting tools for items exceeding 50 pounds, or is an awkward shape • If hot, drink water and take necessary rest breaks • Lift (MEWP: scissor, boom, bucket) • Lockout procedure and LOTO locks & tags • Location of exits • Location of fire extinguisher • Location of first aid kit • Report vermin to contractor • Refrigerant leak SOP (if applicable) • Shop safety standard operating procedures • This job position does not typically perform work on regulated building materials • Tool tethering and toe boards • Understand and implement industry safety standards for operating power/hand tools • Use temporary lighting (such as flashlights, head lamps) 	<p>Task Specific Training</p> <ul style="list-style-type: none"> • Audiometric Hearing Test • Back protection & Lifting Safety Online • Confined Space Awareness Online or Confined Space Entry /Hands On • Construction site specific training • Fall Protection • Hearing Protection/Conservation Online • Ladder Safety Hands On • Ladder Safety Online • Lockout/Tagout Safety • MEWP training with boom, scissor & aerial evaluation • Refrigerant Monitoring • Scaffold Safety • Supv LOTO Field Evaluation <p>PPE (as required unless noted as needed)</p> <ul style="list-style-type: none"> • Construction – hard hat, impact glasses/goggles, safety vest, gloves, substantial footwear • Dust mask -as needed • Head light / Flashlight / temporary lighting • Hearing protection - as needed • Steel toe footwear • Any other PPE as specified by the construction site

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
Repair campus utility distribution tunnel systems as required.	<ul style="list-style-type: none"> • Airborne contaminants (such odors, mold, fume) • Biological hazards (such as blood, needles, vials) • Confined spaces (specific areas) • Ergonomic problems such as lifting, repetitive motion, awkward posture • Hazardous chemicals (such as solvents, degreasers) • Hazardous energy (mechanical, heat, pressure (gas or liquid lines)) • Heat stress • Insufficient lighting • Material Handling (ie, hoisting/rigging) • Noise • Overhead equipment/hazards • Power/Hand tools • Regulated materials such as asbestos, lead, silica • Slip/trip/fall • Vermin feces • Work off/use of ladders 	<ul style="list-style-type: none"> • Avoid energized electrical work when possible • Barricades/signs/spotter (if applicable) • Building system shutdown • Check-in with the department control room prior to work • Confined space permit (if applicable) • Ensure work area is clear from spills and trip hazards • Get help or use lifting tools for items exceeding 50 pounds, or is an awkward shape • If hot, drink water and take necessary rest breaks • Lockout procedure and LOTO locks & tags • Location of exits • Location of fire extinguisher • Location of first aid kit • Safety Data Sheets (SDS) for chemical and products • Pest Controller • Shop safety standard operating procedures • This job position does not typically perform work on regulated building materials • Understand and implement industry safety standards for operating power/hand tools • Understand and implement regulatory practices / standards for operating a hoist • Understand and implement the Utility Tunnel Access Program • Use temporary lighting (such as flashlights, head lamps) 	<p>Task Specific Training</p> <ul style="list-style-type: none"> • Audiometric Hearing Test • Back protection & Lifting Safety Online • Confined Space Entry /Hands On • Hoisting and Rigging • Hearing Protection/Conservation Online • Ladder Safety Hands On • Ladder Safety Online • Lockout/Tagout Safety • Supv LOTO Field Evaluation <p>PPE (as required unless noted as needed)</p> <ul style="list-style-type: none"> • Bump cap – as needed • Dust mask -as needed • Gloves - as needed • Hard hat • Head light / Flashlight / temporary lighting • Hearing protection - as needed • Ice vest – as needed • Impact glasses/goggles – as needed • Steel toe footwear • Substantial footwear • Shop coveralls – as needed

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
Cutting and welding (stainless steel, ferrous, non-ferrous materials)	<ul style="list-style-type: none"> • Airborne contaminants (such as fume, gases, vapors, odors) • Compressed gasses (such as welding gasses) • Confined spaces (such as mechanical rooms, tunnels) • Electrical hazard (electrical arc welding) • Ergonomic problems such as lifting, repetitive motion, awkward posture • Fall hazard • Hazardous chemicals (such as welding rods, solvents, degreasers) • Hazardous energy (such as heat, pressure (gas or liquid lines)) • Heat stress • Insufficient lighting • Material Handling (ie, forklift, hoisting/rigging) • Noise • Overhead equipment/hazards • Pedestrian traffic • Power/Hand tools • Regulated materials such as asbestos, lead, silica • Slip/trip/fall • UV light (radiant energy – radio frequency) • Work off /use of ladders 	<ul style="list-style-type: none"> • Asbestos work plan (call Regulated Materials Office) • Avoid energized electrical work when possible • Barricades/signs (if applicable) • Building system shutdown • Check-in with control room prior to work in Power Plant • Confined space permit (if applicable) • Ensure work area is clear from spills and trip hazards • Fall protection work plan (if applicable) • Get help or use lifting tools for items exceeding 50 pounds, or is an awkward shape • Hot Work Permit – outside Power Plant • If hot, drink water and take necessary rest breaks • Lead work plan (call Regulated Materials Office) • Lift (MEWP: scissor, boom, bucket) • Lockout procedure, LOTO locks & tags • Location of exits • Location of fire extinguisher • Location of first aid kit • Safety Data Sheets (SDS) for chemical and products • Shop safety standard operating procedures • This job position does not typically perform work on regulated building materials • Tool tethering and toe boards • Understand and implement industry safety standards for operating power/hand tools (including electrical arc welding apparatus) • Understand and implement regulatory practices / standards for operating a forklift • Understand and implement regulatory practices / standards for operating a hoist • 4-gas monitor (ie Bacharach) • Use temporary lighting (such as flashlights, head lamps) • Ventilation – smoke eater, shop fume hood, fans • Welding screens 	<p>Task Specific Training</p> <ul style="list-style-type: none"> • Audiometric Hearing Test • Back protection & Lifting Safety Online • Compressed Gas Safety Online • Confined Space Entry /Hands On • Crystalline Silica Safety Training Online • Fall Protection • Forklift Operator Safety • Hoisting and Rigging • Hearing Protection/Conservation Online • Hexavalent Chromium Online • Ladder Safety Hands On • Ladder Safety Online • Lockout/Tagout Safety – shop specific • MEWP training with scissor & aerial evaluation • Radio Frequency Radiation Safety Awareness • Scaffold Safety • Supv LOTO Field Evaluation <p>PPE (as required unless noted as needed)</p> <ul style="list-style-type: none"> • Cooling vest – as needed • Coveralls – required for stainless • Dust mask -as needed • Hard hat –as required • Head light / Flashlight / temporary lighting • Hearing protection - as needed • Impact glasses/goggles • Personal fall restraint/arrest equipment • Safety vest – as needed • Steel toe footwear • Substantial footwear • Welding: jacket, hood/shield, gloves