



# Bock Consulting

## Job Analysis

Job Title	Sheet Metal Worker – Marine Maintenance Worker	Claim Number	_____
DOT Number	804.281-010	Employer Phone #	(206) 787-3350
Employer	Port of Seattle	Date of Analysis	August 8, 2007; June 21, 2011
Employer Contact	Skip Himes		

Job of Injury     Previous Job     New Job     8 Hours Per Day     5 Days Per Week

### Job Description, Essential Functions, Tasks and Skills:



The Port of Seattle is a municipal corporation created on September 5, 1911 by the voters of King County. The Port of Seattle is divided into operating divisions, plus other departments that support the divisions and the broad mission of the Port: 1) Aviation Division, 2) Capital Development Division, 3) Real Estate Division (which is the home division of Marine Maintenance), and 4) Seaport Division.

The Seaport and Real Estate Divisions own and operate approximately 1,200 acres of moorage, cargo-related, and cruise ship facilities. In addition, terminals operated by the Seaport and Real Estate Divisions are home to the North Pacific fishing fleet. The Real Estate Division employs a maintenance staff, which is responsible for tasks such as facility upkeep, pier and moorage system repair, utility maintenance, parks maintenance, and snow and ice removal.

This job analysis is for an individual working as a Sheet Metal Worker for Marine Maintenance. Workers in this position perform all sheet metal-related tasks required by the Seaport and Real Estate Divisions.

#### Essential Functions:

Sheet Metal Workers have the skills and abilities to work with aluminum, mild steel, stainless steel, and other types of metals. They may also work with materials such as Lexan and PVC pipe on certain projects.



The Sheet Metal Shop has limited staff; therefore, workers need to have a broad range of technical and operational skills and abilities to complete all of the assigned tasks.

#### Examples of Tasks assigned to the Sheet Metal Workers:

- Meet/connect with Crew Chief on a daily basis.



***Job Analysis: Sheet Metal Worker (Marine Maintenance) – Port of Seattle  
DOT # 804.281-010***

- Receive and or review written or oral instructions about assigned work tasks.
- Request parts, supplies, and or materials needed for project(s).
- Prepare and or review job hazard analysis for each project. Review job plan. Ensure work is performed in a safe manner
- Replace metal siding on buildings that are damaged by vehicles or the weather (i.e., wind storms have torn siding off of buildings in the past).
- Replace or update roofing surfaces. Strip old coatings and caulking. Apply new coatings and caulking.
- Repair and/or replace gutter systems on buildings.
- Address leaks in buildings caused by the migration of water through and around the exterior surfaces of a building. Identify issue(s) causing the problem. Develop a plan to address the issue(s). Scrape/strip caulking from metal panel connections, remove paneling, apply water-proofing materials to connections where leaks occur. Install weather seals as needed.
- Fabricate needed parts by studying plans and specifications, or creating designs to address specific issues. Measure, cut, bend, hammer, shape, and fasten pieces of sheet metal as required using saws, presses, power breaks, rotary, hand, or squaring shears, and/or hacksaws. Fasten seams and joints with welds, bolts, cement, rivets, solder, clips, or other connecting devices.
- Sand and polish metal surfaces. May be asked to remove graffiti painted on or scratched into metal surfaces.
- Installing step treads over existing and worn stair treads.
- Installing corner protectors on interior walls covered by drywall/Sheetrock.
- Place bird netting and spike wire in locations where birds are causing health and safety issues.
- Enter time by work order on a daily basis into job tracking system (Maximo).
- Enter description of work completed in work log.
- Send and respond to electronic mails.
- Attend periodic meetings during which training is provided and important safety issues are discussed.





***Job Analysis: Sheet Metal Worker (Marine Maintenance) – Port of Seattle  
DOT # 804.281-010***

- Assist other crafts as requested.
- Potentially supervise apprentices or mentor students.
- Complete all required forms and documents.
- May be involved with scheduling work and making determinations of work priorities.
- May interface with Purchasing to ensure sheet stock, parts, equipment, consumables, and other items are available to use on projects.

Necessary skills and abilities include:

- Knowledge of technical sheet metal fabrication techniques.
- Knowledge and skills necessary to complete assigned tasks and use tools in a safe and efficient manner.
- Ability to identify and trouble-shoot an issue quickly, and identify the best method(s) to address the issue correctly.
- Ability to follow directions closely, and be detailed oriented.
- Having the physical abilities to perform the assigned tasks.
- Ability to work from technical drawings.
- Ability to work at heights, over water, and in confined spaces.
- Ability to work independently, but also within a team environment. The worker must be able to work with other Sheet Metal Workers and workers of other trades.
- Ability to work in various temperatures and potentially work exposed to various kinds of weather.
- Working knowledge of Windows-based computers, related accessories, time tracking software, keyboarding, data input skills, and electronic mail software.



Machinery, Tools, Equipment, Personal Protective Equipment:

Sheet Metal Workers use a variety of tools and equipment to accomplish their assigned tasks:

- Hand tools, including hammers, screwdrivers, wrenches, crowbars, clamps, vice grips, tape measures, razor knives, hook knives, utility knives, and sandpaper.
- Power tools, including drills, drill presses, chop saws, grinders, reciprocating saws, metal saws, presses, power breaks (and dies), punches, bench grinders/buffers, deburring machine, and other shop tools.
- Welding equipment (MIG and TIG).
- Ladders: step, self-supporting, and extension (up to 28 feet in length).
- Scissor lifts and boom lifts.
- Forklifts. Hand trucks. Wheeled carts.





***Job Analysis: Sheet Metal Worker (Marine Maintenance) – Port of Seattle  
DOT # 804.281-010***

- Tool boxes or buckets.
- Portable generators. Extension cords.
- Work trucks.
- Overhead hoists. Comealongs. Chains, straps, and ropes.
- Rolling work tables (in shop).
- Caulking and caulking guns.
- Paint and other coatings. Rollers and brushes.
- Vacuums.
- Rags.
- Fasteners, including screws, rivets, clips, and other items.
- Computer, computer accessories, and project management software (Maximo).



Workers are required to wear safety vests when working in the field. When working in a construction zone, workers are required to wear a hardhat and eye protection. Ear protection is also used as needed (particularly in the shop). Sheet Metal Workers also wear gloves, kneepads, and fall arrest harnesses, as required.

When working within 6 feet of an edge of the water (for example when working on a boat or dock), Sheet Metal Workers must wear a personal floatation device (“PFD”).





Bock Consulting

Claimant:

Claim #:

August 8, 2007 (Rev. June 21, 2011)

Page 5 of 12

***Job Analysis: Sheet Metal Worker (Marine Maintenance) – Port of Seattle  
DOT # 804.281-010***

Education / Training:

The Marine Maintenance group generally seeks Journeyman level employees (journey-level status as obtained by completion of an approved apprenticeship program or equivalent experience). Sheet Metal Workers must be members of the Sheet Metal Workers Union (Local #66), or join within 30 days of employment.

Additional training includes forklift, power truck, and fall arrest certifications.

A valid Washington State Driver's License is required in this position.

Training and or enough hands-on experience with computers to have a working knowledge of Windows-based computers, related accessories, time tracking software, keyboarding, data entry, and electronic mail software.

**Per the Dictionary of Occupational Titles (DOT): 804.281-010 Sheet-Metal Worker, Maintenance**

Specific Vocational Preparation (SVP): 7 (From two to four years)



**Job Analysis: Sheet Metal Worker (Marine Maintenance) – Port of Seattle  
DOT # 804.281-010**

**COGNITIVE AND BEHAVIORAL ELEMENTS/DEMANDS**

Frequency Definitions:	
<b>Continuously</b> = Occurs 66-100% of the time.	<b>Occasionally</b> = Occurs 1-33% of the time
<b>Frequently</b> = Occurs 33-66% of the time.	<b>Rarely</b> = May occur less than 1% of the time.
<b>Never</b> = Does not ever occur.	
<b>Comprehension</b>	
Articulating and comprehending information in conversations.	Continuously
Reading, comprehending, and using written materials.	Occasionally
Understanding and solving problems involving math and using the results.	Occasionally
Using technology/instruments/tools & information systems.	Continuously
Working with two and three dimensional formats.	Continuously
<b>Remembering</b>	
Remembering spoken instructions.	Continuously
Remembering written instructions.	Frequently
Remembering visual information.	Continuously
Recalling information incidental to task at hand.	Continuously
Memorizing facts or sequences.	Frequently
Remembering simple instructions.	Continuously
Remembering detailed instructions.	Continuously
<b>Learning &amp; Processing</b>	
Effectively learning and mastering information from classroom training.	Rarely
Effectively learning and mastering information from on-the-job training.	Continuously
Learning from past directions, observations, and/or mistakes.	Continuously
Using common sense in routine decision making.	Continuously
Recognizing and anticipating potential hazards and taking precautions.	Continuously
Thinking critically and making sound decisions.	Occasionally
Integrating ideas and data for complex decisions.	Occasionally
Determining and following precise sequences.	Frequently
Coordinating and compiling data and information.	Occasionally
Analyzing, synthesizing data and information.	Occasionally
<b>Tasking and Planning</b>	
Performing repetitive or short-cycle work.	Continuously
Working under specific instructions.	Continuously
Completing complex tasks.	Occasionally
Directing, controlling, or planning for others as necessary for basic tasks.	Occasionally
Directing, controlling, or planning for others as necessary for complex tasks.	Rarely
Multi-tasking.	Continuously
Planning, prioritizing, and structuring daily activities.	Continuously



Bock Consulting

Claimant:

Claim #:

August 8, 2007 (Rev. June 21, 2011)

Page 7 of 12

***Job Analysis: Sheet Metal Worker (Marine Maintenance) – Port of Seattle  
DOT # 804.281-010***

<b>Use Appropriate Behavior for Professional Work Environment</b>	
Receiving criticism and accepting limits appropriately.	Frequently
Maintaining emotional control and organization under increased stress.	Continuously
Maintaining socially appropriate affect, temperament, and behavior.	Continuously
Monitoring own quality of performance and altering behaviors to correct mistakes or improve outcome.	Continuously
Working independently and/or unsupervised.	Continuously
Adapting to frequent interruptions, changes in priorities, or changes in work location.	Frequently
Responding effectively to emergency situations.	Occasionally

Frequency Designations: <b>Required Beneficial Not Necessary</b>	
<b>Maintaining Attendance and An Assigned Work Schedule</b>	
Maintaining predictable and reliable attendance each work shift.	Beneficial
Being punctual.	Beneficial
Taking rest periods at set times or only at times determined by breaks in job responsibilities.	Not Necessary
Adjusting to a flexible schedule of work days and or shifts.	Beneficial



***Job Analysis: Sheet Metal Worker (Marine Maintenance) – Port of Seattle  
DOT # 804.281-010***

**NOTE:** Due to the wide variety of tasks assigned to a Sheet Metal Worker, and limited staff, a Sheet Metal Worker will encounter a broad range of physical demands on the job, depending on the type of work they are doing.

**PHYSICAL DEMANDS**

**N/A:** Not Applicable

**S:** Seldom (1-10% of the time)

**O:** Occasional (10-33% of the time)

**STRENGTH:**  Sedentary  Light

**F:** Frequent (33%-66% of the time)

**C:** Constant (Over 66% of the time)

**WNL:** Within Normal Limits (talking, hearing, etc.)

Medium  Heavy  Very Heavy

Frequency

Comments

Sitting	<b>O</b>	Depends on assigned tasks and assigned work areas. While driving a work truck/van to work location, driving a forklift, sitting at a shop table, attending meetings, or working on a computer. Also while on break.
Standing	<b>F-C</b>	Work is generally accomplished alternating between standing and walking, although there may be times when a majority of a shift is spent standing on a ladder. Standing may be on uneven or sloped surfaces. Surfaces may also be wet or slippery.
Walking	<b>F</b>	Work is generally accomplished alternating between standing and walking. Walking may be on uneven or sloped surfaces. Surfaces may also be wet or slippery.
Lifting (up to 20 pounds)	<b>F</b>	While lifting individual tools, extension cords, and other smaller items. Lifting smaller pieces of metal sheet stock. Lifting canvas bucket with tools and supplies. Lifting shorter sections of gutters and smaller pieces of siding. Lifting 1-gallon cans of paint/coatings (weigh approx. 10-12 lbs. each). Lifting bottles/cans of chemicals. Lifting shorter ladders (from 2 feet to 4 feet ranging from est. 10 to 20 lbs.). Boxes of spike wire (used to deter birds from perching on surfaces). Lifting paperwork. Lifting small dies for a press break (used to bend metal).
Lifting (20 to 50 pounds)	<b>O</b>	Lifting medium size pieces of metal sheet stock or sheets of expanded metal. Lifting longer sections of gutters (may be up to 50' long) and pieces of siding (may be up to 30' long). Lifting longer ladders (from 4 feet to 24 feet ranging from est. 20 to 30 lbs.); plastic bucket full of tools/toolbox; lifting 5 gallon buckets of paint/coatings (up to 50 lbs. - less for partially full buckets); lifting boxes of bird netting. Lifting medium dies for a press break (used to bend metal).
Lifting (50 to 100 pounds)	<b>S</b>	Lifting full sheets of metal sheet stock (generally comes in 4' x 8' sheets, and is lifted by two people). A piece of 12 gauge steel 42"x48" weighs approx. 70 lbs. Lifting large dies for press break (may need two individuals to move the larger dies). <b>NOTE:</b> When lifting heavy objects, assistance is generally available. Workers can also use forklifts and hoists to limit lifting.





***Job Analysis: Sheet Metal Worker (Marine Maintenance) – Port of Seattle  
DOT # 804.281-010***

Carrying (up to 20 pounds)	<b>F</b>	While carrying tools, shorter ladders, and other items to and from a work truck, in the shop, or on a job site. Carrying sections of gutters, pieces of siding, and boxes of spike wire (used to deter birds from perching on surfaces). Carrying paperwork.
Carrying (20 to 50 pounds)	<b>O</b>	Carrying longer ladders, tool buckets or tool boxes, 5 gallon buckets of paint/coatings, and boxes of bird netting. Carrying small to medium dies for press break (used for bending metal).
Carrying (50 to 100 pounds)	<b>S</b>	Workers can use wheeled carts, wheeled tables, hand trucks, or forklifts to move materials and equipment in the shop, in the storage area, or on a job site to limit the need to carry heavy objects. <b>NOTE:</b> If a heavy object has to be transported, assistance is available, or a worker can use a forklift, hand truck, wheeled table, wheeled cart, or hoist to move the object.
Pushing/Pulling (Force up to 40 lbs.)	<b>O-F</b>	Pushing a wheeled cart or table in the shop, or maneuvering a wheeled cart at a job site. Holding items on bench grinder/buffer. Using sandpaper to remove scuff and scrapes on metal surfaces (estimated 35 – 40 lbs. of force). Cleaning out seams between panels using a Scotch-Brite pads and rags. Holding siding in place until secured with a fastener, including screws or rivets. Positioning metal sheets on various equipment, or moving sheets of metal through a saw. Bending thinner metal using a manual break. Pulling generator out of side of work truck to start.
Pushing/Pulling (Force 40 to 80 lbs.)	<b>S</b>	Using a manual punch to punch holes in sheet metal (up to 80 lbs. of force, based upon the thickness of the metal and the diameter of the hole). Bending thicker metal using a manual break.
Climbing Stairs/Ladders	<b>O</b>	Many of the tasks assigned to the Sheet Metal Workers are performed while on a ladder. Stairs may be encountered at a work site, used to access the back of the work truck, or reach a meeting room in the shop building.
Working at Heights/Balancing	<b>O-F</b>	Depending on assigned tasks, a worker may be on a ladder or in a lift for a majority of a shift, and workers may work on top of buildings, docks and/or boats. <b>NOTE:</b> Fall protection must be worn when working at heights (the harness and lanyard can weigh 5-7 pounds), and a personal floatation device (“PFD”) is required when working near the water.
Bending at Waist	<b>F</b>	While working at a shop table; entering vehicles; inspecting issues or working at or below waist level; gathering tools, supplies, equipment, or other items at or below waist level.
Bending Neck	<b>C</b>	In a majority of the tasks accomplished by the Sheet Metal Workers, the ability to move and bend the neck would be considered important.



***Job Analysis: Sheet Metal Worker (Marine Maintenance) – Port of Seattle  
DOT # 804.281-010***

Twisting at Waist	<b>O-F</b>	While lifting and moving sheets of metal siding into place; guiding metal pieces through the deburring machine or saws; positioning metal on press break or other equipment; painting or spreading coatings on metal/ roofing surfaces; obtaining items from the storage located in the work truck/van; driving work truck. Note: When working on a ladder, the need for twisting while working may increase.			
Crouching/Kneeling	<b>O-F</b>	Depending on the assigned task. When working below waist level, or gathering tools and supplies stored below waist level. Kneepads are available for use by the workers.			
Crawling	<b>S-O</b>	Depends on the assigned work. May crawl while working on tasks at or below knee level.			
Stooping	<b>S</b>				
Reaching (To shoulder level)	<b>F</b>	While constructing sheet metal items in the shop or field; operating shop equipment; guiding pieces of metal through saws and other equipment; painting or rolling paint/coating on roof surface; gathering supplies and equipment in shop and/or from storage in truck/van; holding sheet metal panels and gutters in place;			
Reaching (Over the shoulder)	<b>O-F</b>	Depending on the assigned task. Gathering supplies in shop and/or from storage in truck/van; holding sheet metal panels and gutters in place; while working from a ladder (i.e., scraping/cutting caulking or applying paint). NOTE: Workers use lifts and ladders to try and position work at chest level when possible.			
Driving	<b>O</b>	Driving work truck, van, forklift, or other vehicle.			
Foot Controls	<b>O</b>	While driving; operating press break and other metal bending, cutting, drilling, or welding equipment (generally limited force is necessary to operate the machine controls). Note: One of the punches (radius punch) is operated by exerting force against a large foot pedal. This machine may take up to approx. 80 lbs. of force to operate (depending on the thickness of the metal being punched).			
Repetitive Motion	<b>F</b>	While drilling a series of holes in a number of similar items, crimping metal connections, using hand tools, trowelling or painting on sealant, driving screws or rivets, crawling along seams performing repairs.			
Handling/Grasping	<b>C</b>	<b>50</b>	% Pinch Grasp	<b>50</b>	% Whole Hand Grasp May range from negligible force or significant force (i.e., applying pressure to secure a pop rivet, or using hand shears to cut sheet metal).
Fine Finger Manipulation	<b>F</b>	Operating triggers on power tools, using controls on shop tools, operating controls on lifts, operating welding equipment, using caulking gun, smoothing caulking with finger, using a telephone or 2-way radio, and typing on a computer.			



***Job Analysis: Sheet Metal Worker (Marine Maintenance) – Port of Seattle  
DOT # 804.281-010***

Keyboarding	<b>S</b>	While entering time and work performed on a daily basis, creating and responding to electronic mail.
Talking	<b>F</b>	Communicating with supervisors, co-workers, and potentially the public.
Hearing	<b>C</b>	Communicating with supervisors, co-workers, and potentially the public. Listening for hazards and alarms.
Seeing	<b>C</b>	Visual abilities would be considered important in this position.
Writing	<b>S</b>	Taking notes regarding assigned tasks, noting information obtained from supervisors or vendors, sketching designs for items to be made, and documenting completed preventative maintenance items.
Normal Job Site Hazards	<b>C</b>	Sharp metal pieces with straight and serrated edges; working at heights; working in various types of weather; working with chemicals (cutting fluids, rust inhibitors, denatured alcohol, and oils).
Expected Environmental Conditions	<b>C</b>	The Sheet Metal Workers may work in a shop environment up to approx. 15% of the time. A majority of their work is in the field, where work may be performed outside exposed to the weather (hot and cold), or inside a building or structure that may or may not have a temperature-control system. In addition, workers may be exposed to environments with loud noises, dust, odors, and fumes.

The above job analysis represents the requirements of a specific job based on personal observations, discussions with employer representatives, and/or workers. On occasion, practicality and feasibility prevent the direct observation and/or gathering of objective quantifiable data. For this reason, a "best estimate" may have been used when reporting physical demand frequencies.

Analysis was done on the job site?  Yes  No

Job Analysis Reviewed By: Tom Berg

Completed by Vocational Provider Brice York, B.A., CDMS

Date June 21, 2011 Signature of Vocational Provider \_\_\_\_\_



Bock Consulting

Claimant:  
Claim #:

August 8, 2007 (Rev. June 21, 2011)  
Page 12 of 12

***Job Analysis: Sheet Metal Worker (Marine Maintenance) – Port of Seattle  
DOT # 804.281-010***

**FOR PHYSICIAN'S/EVALUATOR'S USE ONLY**

- The injured worker can perform the physical activities described in the job analysis and can return to work on \_\_\_\_\_
- The injured worker can perform the physical activities described in the job analysis on a part-time basis for \_\_\_\_\_ hours per day. The worker can be expected to progress to regular duties in \_\_\_\_\_ weeks/months.
- The injured worker can perform the described job, but only with the modifications/restrictions in the attached report and/or listed below. These modifications/restrictions are (check one):
  - Temporary for \_\_\_\_\_ weeks \_\_\_\_\_ months
  - Permanent
- The injured worker cannot perform the physical activities described in the job analysis based on the physical limitations in the attached report and/or listed below. These limitations are (check one):
  - Temporary for \_\_\_\_\_ weeks \_\_\_\_\_ months
  - Permanent

COMMENTS:

Date \_\_\_\_\_ Physician's/Evaluator's  
Signature \_\_\_\_\_

Physician's/Evaluator's  
Name Printed \_\_\_\_\_

**PLEASE RETURN COMPLETED FORM VIA FACSIMILE TO:**

**Port of Seattle Employee Health & Safety Department at (206) 787-3406**

11410 NE 124<sup>th</sup> Street, #213, Kirkland, WA 98034  
 Telephone: 425-823-7115 • Fax: 425-823-7125  
[www.bockconsulting.com](http://www.bockconsulting.com)