

**FAIRBANKS ALASKA AREA PLUMBERS AND PIPEFITTERS  
JOINT APPRENTICESHIP TRAINING CENTER**

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**Notice of Physical Abilities & Environmental Demands**

The work performed by plumbers and pipefitters is physically demanding in a variety of ways. Plumbers and pipefitters spend long hours performing physical tasks, often in extreme temperature environments and/or awkward positions, both of which can cause physical discomfort and strain. The outline provided below is a general review of the full range of physical abilities and environmental demands related to the occupation of plumbers and pipefitters. Some employers may impose different physical abilities or present different environmental demands. Some employers may also require fitness-for-duty (physical) exams to assess an individual's physical abilities for a specific job prior to beginning work.

**Physical Abilities**

During the apprenticeship program you may be required to undergo a physical abilities exam to determine your fitness for duty when assigned to a work site, depending on employer requirements. The list below is a brief summary of the physical demands of the occupation and corresponding work-related examples.

- **Trunk Strength** – The ability to use abdominal and lower back muscles to support part of the body repeatedly or continuously over time without ‘giving out’ or fatiguing.
  - Example: Install 4” x 10’ cast iron pipe (weights up to 76 lbs.) along ceiling using step-ladder up to six times per hour.
  - Example: On a daily basis lift and move a minimum of 50 – 80 lbs. from 4 to 10 times per hour. Tasks frequently require ability to lift and move heavier items up to approximately 120 lbs.
- **Static Strength** – The ability to exert maximum muscle force to lift, push, pull, or carry objects weighing up to 80 lbs.
  - Example: Transfer various items such as ladders, bundles of copper pipe, cast iron fittings, etc. to job site, which requires lifting up to 50 lbs. up to 30 times per hour a distance of up to 200 feet.
  - Example –Use equipment weighing 10-15 lbs., drilling overhead into concrete or steel repetitively to install anchors, hangers and/or supports.
- **Extent Flexibility** – The ability to bend, stretch, twist, or reach with your body, arms, and/or legs.
  - Example: Frequently access workspaces under cabinets, in crawl spaces, and in other confined spaces (utilidors).
- **Arm-Hand Steadiness** – The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.

- Example: Handle tools such as pliers requiring coupling forces of 48 lbs., up to 50 times per hour.
- Example: Perform welding and soldering tasks often in unnatural positions.
- Manual Dexterity – The ability to make precisely coordinated movements of fingers of one or both hands to grasp, manipulate, or assemble very small objects.
  - Example: Thread nuts onto bolts, often without being able to visually see the items.
  - Example: Thread 3/8" nuts and washers onto a 3/8" allthread inside a 1 5/8" unistrut.
- Control Precision – The ability to quickly and repeatedly adjust the control of a machine or a vehicle to exact positions.
  - Example: Thread pipe on a pipe machine.
  - Example: Use forklifts and operate boom-trucks.
- Gross Body Equilibrium – The ability to keep or regain your body balance or stay upright when in an unstable position.
  - Example: Frequently change body position and move into new positions as tasks changes.
  - Example: Work on man-lift, scaffolding, or other mobile platform.
- Vision – The ability to see details at close range (within a few feet of the observer) – near vision. The ability to see details at a distance – far vision. The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object – depth perception.
  - Example: Read plans and cut sheets.
  - Example: Visual ability is often impacted by poor lighting in areas where work is typically performed.
- Hearing Sensitivity – The ability to detect or tell the differences between sounds that vary in pitch and loudness.
  - Example: Ability to hear is related to tasks such as: cutting pipe, running a machine (hearing when it is binding-up), alarms related to workplace safety; and radios used in communication on the work-site.
- Repetitive motion – Many routine tasks are repetitive in nature.
- Vibration – Equipment usage may result in substantial vibration impact.

### **Environmental Conditions**

In addition to the physical demands of the occupation, there are a number of environmental conditions impacting a person's ability to perform the work.

- Confined Work Spaces - Must be able to access workspaces with specific entries, limited room or headspace.

- Example: May require an individual to manipulate his/her body into unnatural positions to perform tasks in these confined workspaces.
- Cramped Work Spaces - Cramped workspaces and awkward positions are routinely encountered requiring time spent kneeling, crouching, stooping, crawling, bending, and/or twisting the body.
  - Example: Work around existing piping system in small spaces such as utilidors.
- Heights – Must have the ability to use ladders to access location of work on a routine basis.
  - Example: Ladders are routinely used to access pipe. Occasionally climbing to a height tolerance up to 100 ft.
- Inclement Weather – Work is performed in a variety of environmental settings to include outside temperatures and inclement weather in Alaska.
  - Example: Extreme temperatures can range from 100 degrees Fahrenheit in the summer to -60 degrees Fahrenheit in the winter requiring special clothing in addition to any personal protective equipment, impacting a person’s ability to move freely and see with clarity.
- Noise – Constant exposure to noise levels that can be distracting or uncomfortable, frequently requiring additional hearing protection.
- Air Quality – Dust, smoke, air particles are frequently present in the work area, requiring face shields, particle masks or use of a respirator.
- Ultra-violet Light – Impacts vision when welding.

**Personal Protective Equipment (PPE):** PPE will be provided by the apprenticeship program and/or the employer. Usage is required as appropriate based on tasks being performed.

**Out-of-Town Work Schedules and Locations:** Much of our work is found in remote locations around Alaska. Working in remote locations for extended periods is common. Schedules while working in remote locations require workers to be away from home for extended periods of time. Common schedules are 4 weeks on/1 week off or 6 weeks on/2 weeks off.