



PDA BEST PRACTICES GUIDE

A best practices guide for fitness testing

Version 1 – October 24, 2018

Note to readers

This best practice guide was developed to help provide direction to COAA members and Industry Stakeholders regarding defensible fitness testing in the workplace. This document is part of a larger initiative that created a document repository containing numerous physical demands analyses (PDAs) documents. These drafts were developed with the intention of helping mitigate the cost of initial PDA development while implementing fitness testing.

Suggestions for improving this guide are welcome. Please submit them directly to the COAA:

Construction Owners Association of Alberta
#800, 10123 – Street
Edmonton, Alberta
Canada T5J 3H1

780.420.1145
admin@coaa.ab.ca
www.coaa.ab.ca

© 2018, Construction Owners Association of Alberta

Project Background

The PDA project was an industry lead initiative funded by employers within the Alberta Industrial Construction Industry. The project was designed to help promote safety in the workplace by reducing the costs associated with implementing fitness testing. Fitness testing can be a part of return to work programs and work task allocation to ensure individual workers are physically able to perform specific activities safely and without injury. At the heart of a defensible testing program is a fair, professionally developed physical demands analysis.

This project assembled a cross section of industry members who participated on the committee to help ensure that the perspectives of labour, employers, and industry stakeholders were represented. The committee conducted research into leading practices, consulted industry experts and their own constituents to develop a leading practices guide to help inform industry about defensible fair fitness testing.

The project committee then oversaw the development of a multitude of PDAs following the best practices identified in the first part of the project. These documents are now stored in a centralized repository on the COAA website. The repository has been designed to allow users to download draft PDAs that most resemble the current work conditions of a specific trade, and then further customize the detail as needed to ensure an accurate documented assessment of the physical demands required to safely perform major tasks of the job.

A special thank you goes out to the PDA Working Committee and contributors to the first version of the PDA Best Practices Guide. Included are (in no particular order):

Working Committee Members:

Doug Dory – UA Local Union 488 Plumbers & Pipefitters
Rod McKay – UA Local Union 488 Plumbers & Pipefitters
Brad Bent – CLAC
Dave Hagen – Chemco
Joe McFadyen – CLRA
Larry Jones – Ledcor
Reg Sopka – PCL Industrial Management Inc.
Ryan Henry – Millard Health

Professional Contributors:

Chris Lane – McLennan Ross LLP
James Lingwood – McLennan Ross LLP
Dr. A.C. (Roxane) Grade, MD, FCFP, FCBOM Occupational Health Consultant
Julia P. Reid, B. Mgmt (D Hons), CHRP, Director Occupational Health & Wellness Services (Canada), Lifemark
Linda Miller, EWI Works Inc.

[Table of Contents]

I.	Introduction	5
II.	Special considerations	8
III.	Guidelines for introducing a testing program.....	10
IV.	PDA Sample.....	18

INTRODUCTION

I. Introduction

This document provides guidelines and best practices for developing a fitness testing program for workers and candidates. This is not intended to be a comprehensive guide as each workplace and workforce is unique and assessments must be conducted and developed in relation to the particular circumstances facing each business and its workforce. While touching on legal concepts, this document should not be relied upon as legal advice and we recommend engaging legal counsel to review any proposed fitness-testing policies.

What is Fitness Testing

Fitness testing may include a spectrum of questionnaires, physical and medical tests to determine whether workers have the physical capabilities to perform the duties associated with their positions without undue risk of injury to the worker or to others.

Legal Backdrop

Fitness testing and health questionnaires engage legal principles relating to the exercise of managerial powers in unionized environments, human rights obligations, and privacy concerns.

Human Rights Considerations

All employers must also address and assess human rights obligations in developing fitness policies. Fitness testing will necessarily discriminate against certain individuals: those with physical or, perhaps, mental disabilities. The discrimination arises because the person's disability may prevent or hinder them from meeting the requirements of the testing program, which in turn may cause an employer to not hire them or take some other step which disadvantages the candidate or employee. Employers can justify such discriminatory policies if they:

- Are able to demonstrate that each element of the fitness testing requirements is a *bona fide* occupational requirement (a "BFOR"); and,
- Incorporate into the program a process for reviewing whether the candidate or employee can be "accommodated to the point of undue hardship".

In order to justify fit testing requirements as a BFOR, an employer must be able to show that:

- a) The testing methodology (including PDAs, questionnaire queries, medical examinations, and physical testing) were created for purposes rationally connected to the job/work;
- b) It adopted this methodology with the belief that it was necessary for a work-related purpose (i.e. safety, physical requirement, compliance with site-owner requirements, past injuries etc.); and
- c) The methodology is necessary to accomplish the work-related purpose meaning that each and every question, test and requirement must be necessary. To show that the standard is reasonably necessary, it must be demonstrated that it is impossible to accommodate individual employees sharing the characteristics of the claimant without imposing undue hardship upon the employer.

Therefore, an employer must be able to demonstrate that all the questions, measurements, tests and standards used are actually "reasonably necessary" for the performance of all the work to which the testing applies. Employers should be prepared to show there is no lesser standard that could apply to the work in issue, and that the work cannot be performed in a way which could reduce or avoid the fitness requirements.

Assuming an employer can establish that the testing methodology meets the requirements of a BFOR, the employer may still face a challenge that it did not take reasonable steps to accommodate persons who did not successfully complete all of the testing requirements. The employer must offer reasonable accommodation (not perfect accommodation) to any worker unable to meet testing requirements due to a disability (or other protected ground), or must show that any accommodation would place undue hardship on the employer (consider cost, health, and safety). Workers have a corresponding duty to participate in accommodation processes and accept reasonable accommodation provided.

Human rights legislation also prevents asking certain questions of person **prior to employment** where those questions discriminate against persons on prohibited grounds. This impacts medical or health-related questionnaires which may form part of a fitness testing regime. Asking either an applicant or an existing employee to answer health-related questions may be contrary to the human rights legislation unless an employer can establish a *bona fide* occupational requirement to know this information.

Privacy Laws

Privacy laws across Canadian jurisdictions place significant restrictions on the collection, use, and distribution of "personal information" and "personal employee information". This includes much of the information collected in a fitness testing program.

While there are some allowable exceptions to the collection of this information the clearest and most important is informed consent by the candidate or employee. Each stage of information gathering from a third party (particularly medical) should be supported by consent from the candidate or employee for release of that information. One blanket consent form for multiple disclosures or collections of information is not sufficient.

SPECIAL CONSIDERATIONS

II. Special Considerations

Like non-union employers, unionized employers may implement unilateral policies under their managerial powers subject to the Human Rights and Privacy considerations discussed above.

However, where the union does not consent, the employer must also satisfy the "KVP test" from the case of *Re Lumber & Sawmill Workers' Union, Local 2537, and KVP Co. Ltd.* (1965), 16 L.A.C. 73, (Ont. Arb BD.) (Robinson). Essentially, the law requires that an employer's rules must not contravene the collective agreement, must be reasonable, must be consistent, must be clear and both the rule and the consequences of failure must be brought to the attention of employees and prospective hires.

Any unilateral employer-made policy must satisfy the "KVP" test in order to be valid. Traditionally, the KVP analysis required that an employer policy satisfy the following criteria:

1. The Policy must not be inconsistent with the collective agreement.
2. The Policy must not be unreasonable.
3. The Policy must be clear and unequivocal.
4. The Policy must be brought to the attention of the employee affected before the company can act on it.
5. The employees concerned must have been notified that a breach of such Policy could result in his discharge if the rule is used as a foundation for discharge.
6. The Policy must be consistently enforced.

In addition to these criteria, courts and labour arbitrators added a balancing question where privacy rights are engaged (such as for the collection of biological samples in drug or alcohol testing). The test requires any employer to demonstrate its interest in collecting private information outweighs employee privacy interests.

In *Irving Pulp & Paper*, 2013 SCC 34, the Supreme Court of Canada held that testing was generally acceptable for reasonable cause, post-incident, and return to work following treatment. However, where an employer sought universal testing, an employer must demonstrate that there was a drug or alcohol problem at the workplace that justified such a testing policy (referred to as an "out of control drug culture").

Subsequent labour arbitrations have applied these principles. Therefore, any employer using a policy which affects employee privacy interests must show:

- That the rule or policy is a necessary and proportionate response (comparison of privacy and business interests)
- That it is likely to meet a legitimate need in the workplace (evidence of a pervasive problem at the worksite)
- That the employer policy intrudes on employee privacy to the least possible extent.

With these legal considerations in mind, we consider the best practices for developing and implementing a fitness testing policy.

GUIDELINES FOR INTRODUCING A TESTING PROGRAM

III. Guidelines For Introducing A Testing Program

Step 1: Collect Evidence Supporting a Need for Testing

The first step to any policy which has the potential to impact employee privacy is to determine whether or not there is a legitimate business need which justifies employer intervention. It is recommended that employers collect and accumulate data which demonstrates that there is a need to engage in fitness assessments of workers. This is a critical and necessary requirement in implementing any universal policy but is also important for reasonable cause and post-incident testing policies. This first step is particularly important in unionized environments where employers must demonstrate a purpose that outweighs privacy interests. However, it is also generally important for all employers in demonstrating a “*bona fide* occupational requirement” under human rights legislation.

Many employers will have a formalized process for accommodating issues of worker fitness in already in place and will have data from WCB reporting, past accommodations, and OH&S investigations upon which they can rely. However, a more thorough review is recommended. Employers should consider gathering evidence of workplace injuries and near misses that can be attributed to physical conditions. Heart attacks, incidents of night-blindness, fatigue-related incidents and physical injuries of all types which relate to worker fitness are some of the incidents that an employer can review and collect to determine whether or not the policy serves a justifiable purpose.

Employers should also collect and be able to provide evidence that less intrusive alternatives were contemplated by and reasons such alternatives are inadequate and the reasons those were found to be inadequate. As discussed below, a reasonable cause & post-incident testing employee may be a first step towards collecting this information and making a determination of whether more intrusive (universal) testing is required.

Step 2: Developing Physical Demands Analyses (PDAs)

The next step is to develop a Physical Demands Analysis (PDA) for each position or task. A PDA is a composite of direct observation of workers performing tasks and interviews of those employees in order to understand the essential job tasks and to break down those tasks into physical requirements. In addition, the PDA should identify all of the relevant hazards and safety concerns associated with the jobs and the worksite to which this testing and dangers may apply.

For example, an operator may be required to sit for extended periods, operate levers, inspect equipment, drive or operate the machinery and carry dunnage. A proper PDA will break down these tasks into their individual physical elements as well as identify the frequency at which they must be performed. It will identify the physical components of those tasks (low level lifting, waist height lifting, overhead lifting, front carrying etc.) and the weight required. This will enable subsequent testing to be tailored to the specific physical requirements of the job.

It is critical that PDAs identify the minimum requirements for carrying out the work as the standard for justifying requirements under human rights legislation must be that the requirement is necessary for carrying out the duties of the position. Picking “the fittest” employee is not a purpose that will justify the imposition of a fitness testing program or policy.

Reliance on template PDAs is not a best practice as job requirements may differ between job sites and employers. Template PDAs should only be used as a starting point and should be tailored to the specific

requirements of the position for which each individual employer wishes to test. Failure to identify the minimum requirements of the specific employer's operations and its workers' duties can undermine an entire fitness testing program.

Many organizations offer services developing PDAs for employers using professionals who are trained and practice in this area.

To the extent that an employer is able, it should consider involving a union in its review of the PDAs. Where the union can accept that the requirements evidenced through PDAs are fair and correct, employers will have greater ability to withstand legal challenges to their processes. Where possible, such job requirements should be integrated into collective agreements through Letters of Understanding.

Unionized and non-unionized employers should consider including PDAs as part of job descriptions forming part of contracts of employment.

Step 3: Developing Testing Thresholds

A well-developed PDA will identify the specific physical requirements of each position. Testing protocol may then be developed to determine whether there are any concerns with the ability of employee. The testing protocol will need to be based upon the minimum requirements identified in the PDA. All fitness testing must be tied to determining whether an employee can safely perform all tasks associated with the position/PDA.

Fitness tests are typically developed by third-party providers specializing in developing and implementing testing. They should be developed by medical professionals which may include physicians, occupational therapists and physical therapists.

Employer review of PDAs should not be ignored. It is critical that an employer be able to tie each test to a minimum requirement of each task for the position.

As with PDAs, obtaining union acceptance of fitness testing standards, and incorporating that agreement into the collective agreement will provide employers with a more robust ability to rely on testing procedures.

Step 4: Considering Medical Questionnaires and Medical Information

The Policy developed should require employees to disclose previous injuries and medical conditions that may impact the ability of the employee to safely perform the tasks as identified in the PDA and those that may impact the ability of the employee to safely proceed with the testing. The Policy should also explain how the information is to be kept confidential and only accessible to those who need to know. Failure to provide such a process may lead to a finding that the policy is unreasonable or possibly amount to a privacy breach.

Medical questionnaires and disclosures are important for ensuring fitness. However, seeking medical information raises important privacy and human rights questions. Employers should first gauge carefully the need to seek further medical information and whether such information will directly relate to the ability of the employee to meet the demands of the position in order to address human rights concerns.

Medical questionnaires should avoid asking any questions that do not directly relate to the ability of the employee to safely perform his or her job functions or the ability of the employee to safely participate in the

fitness testing. If an employer cannot show that there is some reasonable link between the information requested and the requirements of the job or testing, the employer should not ask for the information. Where medical information is sought from an outside person (such as the employee's physician), privacy legislation is engaged. In order to address privacy issues, the employee must provide informed consent (an authorization) to provide that medical information to the employer or third party tester. This authorization must be provided *each time* the employee is requested to disclose medical information. An employer (or third party) may not rely on a prior authorization to collect new information. Collection of medical information without consent for each medical disclosure violates privacy laws in most cases.

Employers should not seek medical information acquired by third party testers in most cases. Where such information is required (such as in an accommodation consideration of a failed test) employers should have a confidentiality system in place to ensure that only those who require the information have access to it and that the information is kept securely. Consent from the employee must be obtained in order to access such information from the third party tester.

As with PDAs and testing standards, obtaining union acceptance of medical questionnaires, and incorporating any agreement into the collective agreement will help to justify this element of a fitness policy.

Step 5: Developing a System for Reviewing Fitness Results (Accommodation)

Even if the testing is measuring a *bona fide* occupational requirement, employers who deny employment or dismiss individuals on the basis of testing results are likely engaging in discrimination under human rights legislation. In order to meet human rights obligations, employers must determine whether an employee is unable to meet the standard based on a protected ground (such as a disability), and if so, be able to provide the individual with reasonable accommodation or demonstrate that any accommodation would impose an undue hardship on the employer.

Therefore Employers must develop a system for reviewing employees/candidates who are unsuccessful in demonstrating the required fitness for the elements of the relevant PDA. This is not a task that can or should be delegated to a third party as the obligation to accommodate employees and job candidates rests with the employer.

Employers must assess each individual independently and determine whether there is protected ground (such as a disability) impacting the worker's ability to meet the standard and whether there is an ability to provide reasonable accommodation to the employee. Such accommodations may include (depending on the circumstance):

- Making an independent determination that the employee is capable of performing the work without modification;
- Determining if the job may be modified to address the individual's restrictions (this could include modifications to hours, equipment, division of work etc.); or,
- Determining if there is a related job or position that could be filled by the employee or candidate.

Any policy addressing fitness testing should include a guarantee that the employer will abide by its legal obligations under human rights legislation and that it will attempt to accommodate any employee or candidate to the extent required by law.

Where possible, limit the amount of information delivered to the employer from the testers. Maintaining employee confidentiality of medical-type records will limit the infringement on privacy interests and will weigh in favour of finding the rule "reasonable". Where an employee (or potential employee) has failed, and you believe he or she can still perform the functions (i.e. low-risk), obtain and document consent from the employee before asking the tester for details.

Step 6: Deciding When Testing is Required

Universal/Random Testing

Universal or random testing will be the most difficult to uphold as a valid management right. This is because an employer only has a general business interest in providing a safe working environment, rather than grounds of concern about a specific individual. Policies imposing universal or random testing will almost certainly require evidence of a substantial workplace problem with health/fitness/injuries to justify a preventative policy. Before introducing such policies, employers should consider whether they have sufficient evidence of a substantial workplace problem and whether reasonable cause/post-incident testing may be effective. Employers should also consider whether evidence of a substantial workplace problem only exists within a subset of employees. For example, fitness-related workplace problem may exist for labourers but not for operating engineers in which case testing may be appropriate only for a subset of the workforce. Employers must be able to demonstrate that less intrusive testing or means of ensuring fitness were considered and found to be insufficient to meet this goal. As indicated immediately below, reasonable cause and post-incident testing may be a method of making this determination.

Reasonable Cause & Post-Incident Testing

Courts and arbitrators have upheld fitness testing of employees where employers have had legitimate grounds to believe that an employee is physically unable to safely carry out the functions required for his or her position. In drug and alcohol testing decisions, both reasonable cause and post-incident testing have also been upheld as a reasonable exercise of managerial authority. A policy providing for fitness testing in post-incident and reasonable cause situations is far more likely to withstand a legal challenge than either universal/random testing or pre-employment testing.

Employers may wish to consider implementing reasonable cause & post-incident testing as a preliminary measure to determine whether universal or pre-employment testing is warranted. This may enable employers to collect sufficient evidence to determine whether there is a substantial workplace problem with fitness which may justify the imposition of universal or random testing. It may provide the employer with the evidence it requires to demonstrate that less intrusive methods were considered and found to be insufficient to deal with the issue.

Pre-Access Testing

Where pre-access testing is entirely imposed and conducted by the site-owner it is likely not subject to challenge as it falls outside of the collective agreement and is not a term or condition imposed by the employer such that human rights legislation may apply (this varies from province to province).

Employers will likely be required to find alternative work for employees failing to meet site-owner requirements and to accommodate such employees to the extent possible without imposing an undue hardship. Unionized employers may have to apply the layoff provisions of the collective agreement where accommodation is not possible as is done when employees fail other site access requirements imposed by site-owners.

Step 7: Deciding Who Pays

Who Pays For Pre-Employment Testing

In unionized environments with hiring hall provisions, the obligation most likely falls on employers to pay for the testing. Labour arbitrators (dealing with drug testing) have held that the employment relationship begins when employees respond to a dispatch request and that it is unreasonable to hold them off work and require them to pay and schedule a test (violating the *KVP* principles set out above).

In other unionized environments, imposing a cost on candidates may violate the exclusive right of the union to bargain terms and conditions of employment. While there may be an ability to challenge a union's right to bring a grievance on behalf of a candidate, the best practice is to cover the cost of testing and avoid invalidating the entire policy on the basis of cost.

Non-union employers likely have greater flexibility in requiring candidates to provide proof of testing as a pre-condition to employment and requiring employees to bear that cost.

Who Pays for Testing During Employment

Imposing costs on employees that are not contemplated in a collective agreement or contract of employment are likely invalid. Employers should be willing to cover the costs of testing of current employees.

Step 8: Completing the Policy

The policy should provide a clear description of each component of the testing program and should be made available to all affected persons and the union. It is recommended that it be brought to a union's attention at least 2 months in advance of its implementation.

Where possible, PDAs and testing requirements should be made part of job descriptions. In the case of non-unionized employers, these should be integrated into contracts of employment. Where possible, unionized employers should attempt to include PDAs, testing requirements, and questionnaires into the collective agreement.

The policy must make clear the consequences for failure of testing. This is where a policy addresses the obligation on the employer to accommodation. In order for an employer to rely on a failure in testing to not hire or terminate or otherwise discipline an employee, that possibility must be brought to the attention of the employee or potential employee. Again, it would be beneficial to note in the job description that it is a requirement of holding the relevant position.

This document is intended to provide a best practice guideline for employers to consider some of the broad issues involved in developing fitness testing. It is intended to introduce employers to some of the challenges and concepts they should consider in developing such policies. It is not intended to be relied upon as a comprehensive document nor legal advice. We strongly urge those considering fitness testing to seek legal advice and review of policies prior to implementation.

Considerations for Applying a COAA PDA Template

COAA PDA templates are representative of various job positions but may not entirely mirror the exact job position within your organization. In these cases, PDA templates should be customized to more accurately reflect your specific job requirements. Some things to consider when completing a PDA template are:

1. Ensure the individual completing the PDA is able to discuss the position with an experienced and qualified worker engaged in the job and their supervisor in order to obtain an accurate and complete representation of the role.
2. Ensure an unbiased and objective perspective is applied to the PDA process.
3. Ensure the individual completing the PDA is educated on appropriate PDA principles and how they are applied including:
 - a. Frequency key categories
 - b. NOC strength categories (Canadian National Occupational Classifications)
<http://noc.esdc.gc.ca/English/noc/welcome.aspx?ver=16>
4. Ensure proper tools and methods are applied in gathering objective measurements.
5. Ensure ongoing review of the PDA is implemented to confirm the document remains accurate and defensible as work practices evolve.

PDA Sections

1. Job Overview/Summary

- The individual completing this section should:
 - Reference previous job descriptions
 - Discuss job requirements with a worker currently in the role and their supervisor/manager
 - Obtain input and review from various internal groups (i.e. Human Resources, Occupational Health & Safety and Operations) to ensure accuracy and consistency in the following information sections:
 - Work Schedule
 - Education/Experience
 - Labour Provided
 - Job Overview
 - Equipment/Tool/Materials
 - Exposures/Environment
 - Personal Protective Equipment

2. Job Demands Chart: Material Handling and Positional Tolerance

- The individual completing this section must be able to represent:
 - The essential/minimum frequency that each job task requires within a normal work shift according to the frequency key provided. The sum of task frequencies should not exceed the hours in a work shift.

- The essential/minimum fitness category for each manual handling task with associated measurement/detail (this may include strength, flexibility and movement abilities required to perform each task).
- The objective measurement of equipment and materials with the use of proper measurement tools. The following will need to be captured:
 - Weights of materials handled using a calibrated scale
 - Heights materials are lifted using a tape measure or other measurement tool
 - Distances materials are carried using a tape measure or other measurement tool
 - Push/pull forces exerted using a calibrated force gauge
 - Total time and frequency of tasks using a stopwatch
- The differentiation between critical/essential and marginal job tasks.

3. Photos of Tasks and Work Environment

- The individual completing this section must:
 - Capture digital images of the tasks and materials essential to the role and provide a description. Be mindful to omit the faces of individuals in images if needed to comply with privacy considerations.

4. Validation Agreement

- Review and approval of the PDA document should be confirmed by the individual who completed the PDA, a management representative and a worker/labour representative.


If any of these proficiencies cannot be satisfied,

- contact the following to obtain certification on proper PDA administration:
 - WCB Alberta PDA Workshop
 - Tel: 780-498-3373
 - Web: <https://www.wcb.ab.ca/millard-treatment-centre/workshops/physical-demands-analysis-workshop.html>

OR

- contact a qualified Kinesiologist, Occupational Therapist, Physiotherapist or Ergonomist to complete the PDA onsite

Example of a completed PDA template

	<p>Physical Demands Analysis</p> <p>Modular Industrial 1st Year Apprentice Ironworker</p> <p>Prepared for: Construction Owners Association of Alberta</p>
---	---

Job Title:	Modular Industrial 1st Year Apprentice Ironworker	Assessment Location:		Data Collection Date:	
-------------------	---	-----------------------------	--	------------------------------	--

Completed By:		Submitted on:	
----------------------	--	----------------------	--

Disclaimer:	<p>The Physical Demands noted in this report may vary depending on company and location. Please contact the company directly to confirm this physical demands analysis is an accurate representation of the specific job title for the specific location.</p> <p>Depending on the company and location, safety standards for lifting require any lifting greater than 50 lbs. to be done with two people; and any lifting greater than 80 lbs. to be done with the use of machinery.</p>
--------------------	--

Work Schedule:	<p>Shift Duration: 4 days/week, 10 hours/day; may vary</p> <p>Break Schedule: Total of 1 hour break per day</p> <p>Shift Rotation: Not applicable</p> <p>On call is required: No</p> <p>Overtime required: No; but may be available</p>
-----------------------	--

Education / Experience:	<p>Education required: Minimum of Grade 10 education to apply for apprenticeship. Upon completion of the hours required, there is 6 weeks of in-class work. The International Brotherhood of Ironworkers union offers a pre-apprenticeship program that is a 2 week course.</p> <p>Hours required for position: 1500 hours per year of apprenticeship</p> <p>Tickets that may be required (not limited to): Fall protection, H2S Alive, wildlife awareness, ground disturbance and Elevated Work Platform (EWP) machinery use, Confined Space, First Aid, WHIMIS, Construction Safety Training Systems (CSTS) and Basic Safety Orientation (BSO).</p>
--------------------------------	--

Labour Provider:	
-------------------------	--

Job Overview:	An Industrial 1st Year Apprentice Ironworker assists with erecting and building main structural members of a building, tower or bridge using steel. The 1 st Year Apprentice
----------------------	---

	Ironworker learns behind the Journeyman and is mentored throughout his apprenticeship.		
	% of shift	Job Task	Task Description
	10	Safety / Job Prep and Planning Phase	<ul style="list-style-type: none"> Attend safety meetings as required and perform daily stretching routine. Complete appropriate paperwork for task, including pre-task safety card. Direction provided by foreman and Journeyman; although would be mentored with reading blue prints, drawings and would be encouraged to be knowledgeable of the specs Communication with other tradesmen; specifically working in close proximity to Crane Operators. Assist with gathering materials and tools required for the job. Inspection of any equipment prior to using it. Flag off area as required.
	10	Spotting for moving equipment	<ul style="list-style-type: none"> A spotter is required for moving the EWP, crane, or any additional equipment that is moving throughout the site.
	80	Preparing for and assisting with building and erecting a steel structure	<ul style="list-style-type: none"> A 1st year apprentice ironworker would assist with moving any dunnage to create blocking piles for under the steel structure. A 1st year apprentice ironworker may be responsible for assisting with creating pieces of buildings as large as the entire side of a building (called a bent); to as small as the grating, beams (large and small) and ladders. Preassemble as much of the structural steel as possible prior to erecting. This requires the use of hand tools, power tools, torches, grinders. The 1st year apprentice ironworker may be required to move beams and braces with the use of a grasshopper (a push/pull device with a wheel) if they do not have access to a zoom boom. Depending on the building being assembled, the floor would typically be created first. The walls would each be rigged up and temporarily held up by two cranes (one for each wall on opposite sides of the structure). The 1st year apprentice ironworker would then assist with securing each side of the wall to the floor structure using tone guns, hand tools, come-alongs and chain falls, for example. Once the four sides of the structure, ceiling and floor are secured to each other, the ironworker then begins to assist with assembling the support beams, ladders,

			<p>railings and grating (or as applicable to the blueprints of the structure).</p> <ul style="list-style-type: none"> • Typically the 1st year apprentice ironworker does not leave the EWP to walk along or climb any of the beams.
--	--	--	--

<p>Equipment/ Tools/ Materials:</p>	<p>Equipment, tools and materials used may include, but are not limited to:</p> <ul style="list-style-type: none"> • Tool belt with the following in it: <ul style="list-style-type: none"> ○ Hammer ○ 2 bolt bags ○ Frog holding 2 spud wrenches and sleever bar ○ 2 bull pins ○ Dewey dag ○ Clip wrench ○ Measuring tape • EWP (Genie) • Crane(s); operated by Crane Operator • Come along • Chain fall • Tone gun • Shackle • Metal sling • Sorting hook • Snipe wrench • Grinder • Torch • Canvas bag to hold some of the tools • Grasshopper • Bolt buckets • Zoom boom
--	--

<p>Exposures / Environment:</p>	<p>Exposures and environment may include, but are not limited to:</p> <ul style="list-style-type: none"> • Inclement weather (rain, wind, varying temperatures, snow, ice, etc.) • Uneven, slippery, rough walking surface • Loud noises • Sparks (from grinder) • Moving vehicles / heavy equipment around site • Heights greater than 6 feet • Toxins (fire proofing materials, paint, gases, fumes) • Vibration • Tools falling • Trip hazards • Head and/or knee bangers
--	---

Personal Protective Equipment Required at all times:	<ul style="list-style-type: none"> • Hard hat • Steel toed boots • Gloves • Foam safety eyewear (fectoggle) • Safety vest or high visibility stripes • Long sleeves and pants
Personal Protective Equipment used as Required:	PPE's used may include, but are not limited to: <ul style="list-style-type: none"> • Harness / fall arrest • Hearing protection • Face shield

NOC STRENGTH LEVEL KEY	
Strength Level	Definition
Limited (Lim)	Up to 5 kg (11 pounds)
Light (L)	5 kg to 10 kg (11 – 22 pounds)
Medium (M)	10 kg to 20 kg (22 – 44 pounds)
Heavy (H)	Greater than 20 kg (44 pounds plus)

FREQUENCY KEY		
Frequency	% of Workday	Hours – Based on 8 hour Workday
Not Required (N/R)	0%	0
Rarely (R)	1 – 5%	<25 min/day
Occasionally (O)	6 – 33%	25 min to 2 hours 40 min/day
Frequently (F)	34 – 66%	2 hours 41 min to 5 hours 17 min/day
Constantly (C)	67 – 100%	5 hours 18 min to 8 hours/day

**Frequency Key based on WCB Alberta Recommendations*

**Strength Level Key based on the National Occupational Classification*

Job Demand	Frequency / NOC Strength Level					Details/ Measurements
	N/R	R	O	F	C	
<i>Material Handling:</i>						
Floor to Waist Level Lifting			H	H		Tone gun – 20 lbs ¾ inch, 10ft. metal sling – 20 lbs. Snipe wrench – 5 lbs. Tool belt with tools (no bolt bags) – 30 lbs. Tool belt with tools and 2 bolt bags – 60 lbs. 20ft. chain, 1 ½ ton capacity chain fall – 45 lbs. (length of chain and capacity can vary, making it weight less or more) ¾ ton capacity come along – 20 lbs. 3 ton capacity come along – 55 lbs. Shackle – can vary between 17 lbs. to 47 lbs.

Knee to Waist Level Lifting		H	H			As above
Waist to Waist Level Lifting		H	H	L		As above
Waist to Chest Level Lifting		H	L		Lim	Tone gun – 20 lbs $\frac{3}{4}$ inch, 10ft. metal sling – 20 lbs. Snipe wrench – 5 lbs. 20ft. chain, 1 $\frac{1}{2}$ ton capacity chain fall – 45 lbs. (length of chain and capacity can vary, making it weigh less or more) $\frac{3}{4}$ ton capacity come along – 20 lbs. 3 ton capacity come along – 55 lbs. Shackle – can vary between 17 lbs to 47 lbs Hand tools from tool belt to chest height – 1lb to 5 lbs.
Waist to Shoulder Level Lifting		H	L		Lim	As above
Waist to Overhead Level Lifting		H	L			As above
Front Carry		H		M	M-H (tool belt)	Tone gun – 20 lbs $\frac{3}{4}$ inch, 10ft. metal sling – 20 lbs. Snipe wrench – 5 lbs. 20ft. chain, 1 $\frac{1}{2}$ ton capacity chain fall – 45 lbs. (length of chain and capacity can vary, making it weight less or more) $\frac{3}{4}$ ton capacity come along – 20 lbs. 3 ton capacity come along – 55 lbs. Shackle – can vary between 17 lbs. to 47 lbs. Attached to waist on constant basis (medium to heavy strength level): Tool belt with tools (no bolt bags) – 30 lbs. Tool belt with tools and 2 bolt bags – 60 lbs.
Right / Left-handed Carry (Dominant Hand)			L	Lim	Lim	Hand tools from tool belt – 1lb to 5 lbs. Tone gun – 20 lbs $\frac{3}{4}$ inch, 10ft. metal sling – 20 lbs. Snipe wrench – 5 lbs. Shackle – 17 lbs.
Shoulder Carry	X					Not required
Static Pushing/Pulling (Force)			M			Tone gun – 20 lbs. in weight; added static pushing force while using

Dynamic Pushing/Pulling (Force)		H				Outrigger pads – floor level and circular – 70 lbs. Vertical push/pull to bring tools up to work platform – 30 – 50 lbs. depending on amount of tools in canvas bag Grasshopper – without weight or beam on it – 50 lbs. of force required
--	--	---	--	--	--	--

Job Demand	Frequency					<i>Details/Measurements</i>
	N/R	R	O	F	C	
Upper Extremity Work:						
Hand Gripping					X	Using hand tools, slings, securing shackles, grinder, torch, come along, chain falls, etc. Manual handling tasks Sorting materials Assembling structural steel
Pinch Gripping		X				Pen/pencil if required during measurement and calculation
Upper Extremity Coordination					X	Using hand tools, slings, securing shackles, grinder, torch, come along, chain falls, etc. Manual handling tasks Sorting materials Assembling structural steel Retrieving materials Spotting (hand signals) as necessary
Reaching Forward			X			As above
Overhead Shoulder Level Reaching		X				As above
Below Shoulder Level Reaching					X	Using hand tools, slings, securing shackles, grinder, torch, come along, chain falls, etc. Manual handling tasks Sorting materials Assembling structural steel Retrieving materials Spotting (hand signals) as necessary
Throwing	X					Not Required

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Positional Work:						
Trunk Flexion (Bending)			X	X		Lifting materials and tools from low levels Assembling structural steel Sorting / retrieving materials While grinding at waist or lower height
Trunk Rotation (Twisting)			X			Assembling structural steel, securing beams Retrieving materials
Kneeling			X			Assembling structural steel, securing beams Retrieving materials
Crawling		X				Accessing awkward positions to install ladder, railing, etc. and/or assemble structural steel
Crouching		X	X			Retrieving materials from low levels Accessing awkward positions to install ladder, railing, etc. and/or assemble structural steel
Squatting			X			Assembling structural steel Retrieving materials from floor
Neck Flexion			X			Assembling structural steel Retrieving materials from floor
Neck Extension			X			Spotting Assembling structural steel Retrieving materials from high levels While climbing up beam to access heights
Neck Rotation			X	X		As needed for functional movement patterns

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Static Work:						
Sitting	X					Not Required
Standing				X	X	Safety meetings Planning phase Assembling structural steel, securing beams Spotting
Balancing		X	X			Scaffolding, ladders, stairs

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Ambulation:						
Walking: Level Surfaces		X				Inside an office or on-site trailer
Walking: Uneven Surfaces				X		Gravel, construction site with hazards, scaffolding plywood surface
Walking: Slopes	X					Not Required
Jumping	X					Not Required
Running	X					Not Required

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Climbing:						
Stairs		X				Scaffolding stairs to access structure In office or to access on-site trailer
Ladder		X				Scaffolding ladders to access scaffolding deck
Other	X					

PHOTOS OF TASKS AND WORK ENVIRONMENT

Figure 1: Grasshopper used to manipulate and moved large beams around if the zoom boom is not available for use.



Figure 2: The Industrial 1st Year Apprentice Ironworker's typical tool belt.



Figure 3: Sorting hook attached to cable used to rig the bent and allow the crane to pick up the structural steel.



Figure 4: View from underneath the surface of the grating or floor of the module. Note the large steel structure at the top of the photo and smaller support beams.



Figure 5: Large structural beams used to create structural steel. Size of beams vary and number of holes

Figure 6: The ironworker assembling a bolt on the beam.

also vary. Each hole will be secured to the adjacent beam with a bolt.



Figure 7: Grating hook used to move the grating onto the open hole. Typically used with a second person; one on each end of the grating.

Figure 8: The grating is secured using a HILTI gun.



Validation Agreement

Job Title:	Modular Industrial 1st Year Apprentice Ironworker
Data Collection Date:	September 1, 2016

We the undersigned have reviewed the Physical Demands Analysis for this position and agree that the physical demands documented in this report are representative of the true demands of the tasks associated with the job title as assessed on the date listed above.

Completed by:		
Approved by:		Management Representative
Approved by:		Worker Representative