



ONTARIO COLLEGE OF TRADES

ORDRE DES MÉTIERS DE L'ONTARIO

Apprenticeship
Training Standard

Reinforcing
Rodworker

Trade Code: 452A

Development Date: 2013

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COMPETENCY ANALYSIS PROFILE

Rodworker – 452A

(All unshaded skill sets must be demonstrated/ completed)

SKILL SETS

SKILLS

PROTECT SELF AND OTHERS U0911.0	Wear personal protective equipment (PPE)	Lift equipment and materials	Apply housekeeping rules	Interpret warning signs, labels and symbols	Report hazards to supervisory and safety personnel
	U0911.01	U0911.02	U0911.03	U0911.04	U0911.05
	Maintain safety devices and equipment	Respond to emergency situations	Operate construction equipment	Maintain construction equipment	Inspect platforms, ladders and working surfaces
	U0911.06	U0911.07	U0911.08	U0911.09	U0911.10
	Install and secure platforms, ladders and working surfaces	Maintain platforms, ladders and working surfaces	Prevent fires	Communicate with co-workers in the workplace	Stress tendons
	U0911.11	U0911.12	U0911.13	U0911.14	U0911.15
PLAN, PREPARE AND SET UP FOR JOB U0912.0	Read and interpret drawings and specifications	Plan tasks	Determine installation procedures and sequences	Set up equipment	Unload, sort/shake out and stage inventory materials
	U0912.01	U0912.02	U0912.03	U0912.04	U0912.05
	Set up manual and power bending equipment	Operate manual and power bending equipment			
	U0912.06	U0912.07			

SKILL SETS

SKILLS

OPERATE AND MAINTAIN HAND, POWER TOOLS AND AERIAL WORK PLATFORMS U0913.0	Identify hand tools U0913.01	Select hand tools U0913.02	Use hand tools U0913.03	Maintain hand tools U0913.04	Identify power tools U0913.05
	Select power tools U0913.06	Operate power tools U0913.07	Maintain power tools U0913.08	Identify oxygen and fuel gas equipment U0913.09	Select oxygen and fuel gas equipment U0913.10
	Set up and adjust oxygen and fuel gas equipment U0913.11	Operate oxygen and fuel gas equipment U0913.12	Maintain oxygen and fuel gas equipment U0913.13	Identify post-tensioning equipment U0913.14	Select post-tensioning equipment U0913.15
	Set up and adjust post-tensioning equipment U0913.16	Operate post-tensioning equipment U0913.17	Maintain post-tensioning equipment U0913.18	Identify aerial work platforms U0913.19	Select aerial work platforms U0913.20
	Set up aerial work platforms U0913.21	Operate aerial work platforms U0913.22	Maintain aerial work platforms U0913.23		

SKILL SETS

SKILLS

RIG AND HOIST MATERIALS AND EQUIPMENT U0914.0	Perform rigging and hoisting calculations U0914.01	Select slings U0914.02	Assemble slings U0914.03	Inspect and maintain slings U0914.04	Select rigging hardware U0914.05
	Assemble rigging hardware U0914.06	Inspect and maintain rigging hardware U0914.07	Select hoisting equipment U0914.08	Assemble hoisting equipment U0914.09	Inspect and maintain hoisting equipment U0914.10
	Reeve or lace blocks U0914.11	Tie and render knots, hitches and bends U0914.12	Splice fibre rope U0914.13	Establish hand, voice and radio communications with co-workers and equipment operators U0914.14	

REINFORCING RODWORKER

SKILL SETS

SKILLS

PLACE REINFORCING MATERIALS U0915.0	Identify reinforcing materials U0915.01	Select reinforcing materials U0915.02	Sort reinforcing materials U0915.03	Place and tie reinforcing materials U0915.04	Identify bar supports U0915.05
	Select bar supports U0915.06	Install bar supports U0915.07	Install reinforcing materials for beams, columns and walls U0915.08	Place and tie reinforcing materials for slab installations U0915.09	Place and tie reinforcing materials for footings U0915.10
	Pre-assemble reinforcing bar columns, beams, walls, cages and components U0915.11	Splice reinforcing bars U0915.12	Hoist reinforcing bar assemblies U0915.13	Place reinforcing bar assemblies U0915.14	Position welded wire fabric U0915.15
	Secure welded wire fabric U0915.16	Perform final inspection of reinforcing installations U0915.17			

PLACE POST-TENSIONING AND BAR TENDONS U0916.0	Perform pre-installation procedure and layout U0916.01	Order work site materials and equipment for tendon placing operations U0916.02	Install bearing plates and bursting steel U0916.03	Install tendon and sheathing supports, chairs, sheathing and couplers U0916.04	Install bonded post-tensioning cables in sheathing U0916.05
	Install unbonded post-tensioning cables on supports U0916.06	Assemble dead-end anchors U0916.07	Perform final inspection of post-tensioning installations U0916.08		

SKILL SETS

SKILLS

<p>STRESS AND GROUT POST-TENSIONING AND BAR TENDONS</p> <p>U0917.0</p>	<p>Interpret engineering instructions for bar and cable stressing and cable stress sequence</p> <p>U0917.01</p>	<p>Order work site materials and equipment for tendon stressing and grouting operations</p> <p>U0917.02</p>	<p>Install anchor head and wedges and stressing plates</p> <p>U9197.03</p>	<p>Select stressing jacks and hydraulic pumps</p> <p>U0917.04</p>	<p>Position stressing jacks and hydraulic pumps</p> <p>U0917.05</p>
	<p>Apply stress to post-tensioning and bar tendons</p> <p>U0917.06</p>	<p>Crop cables to specified strand projection length</p> <p>U0917.07</p>	<p>Perform pre-grouting operations</p> <p>U0917.08</p>	<p>Perform final grouting operations</p> <p>U0917.09</p>	

PREFACE

This Training Standard was developed by the Ministry of Training, Colleges, and Universities (MTCU), in partnership with the Provincial Advisory Committee and in consultation with representatives from the industry. This document is intended to be used by apprentice, supervisor/trainer and sponsor/employer as a "blueprint" for training and as a prerequisite for completion and certification.

This training document becomes the apprentice's only record of workplace training performance.

Supervisor/trainer and apprentice are required to sign off and date the skill following each successful acquisition, unless a skill is shaded (optional).

The care and maintenance of this training document is the joint responsibility of the apprentice and the sponsor/employer. By signing off the skill, the supervisor/trainer and the apprentice are indicating that the apprentice has demonstrated competence in the skill. This training standard has been developed specifically for documenting the apprentice's acquisition of skills in the trade.

The technical and work processes that this apprenticeship program occupation/trade performs have been reviewed to include requirements for emerging "green" technologies, managing surplus, or scrap materials, conservation and preventing spills or escape of contaminated, toxic or hazardous gases and waste.

As apprenticeable trades and occupations are more mindful of the need for environmental sustainability, they are adopting materials, tools and procedures that offer environmental harm reduction.

Please Note:

Apprenticeship Training and Curriculum Standards were developed by the Ministry of Training, Colleges and Universities (MTCU). As of April 8th, 2013, the Ontario College of Trades (College) has become responsible for the development and maintenance of these standards. The College is carrying over existing standards without any changes.

However, because the Apprenticeship Training and Curriculum Standards documents were developed under either the *Trades Qualification and Apprenticeship Act* (TQAA) or the *Apprenticeship and Certification Act, 1998* (ACA), the definitions contained in these documents may no longer be accurate and may not be reflective of the *Ontario College of Trades and Apprenticeship Act, 2009* (OCTAA) as the new trades legislation in the province. The College will update these definitions in the future.

Meanwhile, please refer to the College's website (www.collegeoftrades.ca) for the most accurate and up-to-date information about the College. For information on OCTAA and its regulations, please visit: www.collegeoftrades.ca/about/legislation-and-regulations.

DEFINITIONS**ACA**

Apprenticeship and Certification Act, 1998

Certificate of Apprenticeship (C of A)

Certification issued to individuals who have demonstrated that they have completed the trade or occupation in-school training and on-the-job training.

Certificate of Qualification (C of Q)

Certification issued to qualified applicants who have achieved a passing grade on the certification examination for their trade.

Competency Analysis Profile

A document that identifies, in compressed, graphic format, the training requirements of an individual trade and that details the skills/skill sets that must be demonstrated.

Competence

The ability of an individual to perform a skill repeatedly and without assistance in the workplace to the standard set out in the Training Standard or Schedule of Training.

General Performance Objective (On-the-job Skill Set)

Describes the skill set, including all performance objectives under that skill set.

Industry Committee (IC) - under the ACA and Provincial Advisory Committee (PAC) under the TQAA

Under the ACA and TQAA, the Minister may appoint a provincial committee in any trade or group of trades to advise the Minister in matters relating to the establishment and operation of apprenticeship training programs and trades qualifications.

Journeyman or Equivalent

A person who has acquired the knowledge and skills in a trade, occupation or craft as attested to by a provincial or territorial authority.

Mandatory

Status assigned to unshaded individual skills, skill sets or general performance objective which must be signed off for apprentices to complete their program.

Optional

Status assigned to shaded individual skills, skills sets or general performance objective for which sign-off is not required for apprentices to complete their program.

Sign-off

Signature of the sponsor/employer of record or an individual to whom, that sponsor or employer has delegated signing authority, indicating an apprentice's achievement of competence.

Skill

Individual skill described in the Training Standard (note: does not mean the larger skill groups referred to in the Training Standard as Skill Sets, Training Units, or General Performance Objective, but the individual skills that make up those groups).

Skill Sets

Group of individual skills found in the Training Standard (may also be called Training Unit or General Performance Objective)

Skill Set Completion Form

Lists all skill sets and includes space for sign-off by sponsor/employer of record.

Sponsor/Employer

Means a person that has entered into a registered training agreement under which the person is required to ensure that an apprentice is provided with workplace-based training in a trade, other occupation or skill set as part of an apprenticeship program approved by the Director.

Sponsor/Employer of Record

Refers to the sponsor or employer documented as the signatory to the current training agreement or contract. In order for sponsors/employers to be considered for the training of apprentices, they must identify that the workplace has qualified journeypersons or equivalent on site and can identify that the workplace has the tools, equipment, materials, and processes which have been identified to be required for the trade by Provincial Advisory Committees (PACs) or Industry Committees (ICs).

Supervisor

An individual, who oversees the execution of a task or oversees the actions or work of others.

Trainer

A qualified trainer in a compulsory trade is a journeyperson with a Certificate of Qualification or in a voluntary trade is an individual who, at a minimum, is considered equivalent to a journeyperson with a Certificate of Qualification.

TQAA

Trades Qualification and Apprenticeship Act.

Training Standard

A document that has been written in concise statements, which describe how well an apprentice must perform each skill in order to become competent. In using the document, trainers will be able to ensure that the apprentice is developing skills detailed for the occupation.

IMPORTANT DIRECTIONS

Apprentice

1. All complete skills or skill sets must be signed and dated by both the apprentice and sponsor/employer when either all terms of the contract have been completed or the apprentice leaves the employ of the employer.
2. It is the responsibility of the apprentice to inform the local Apprenticeship Client Services Office regarding the following changes:
 - change of sponsor/employer address
 - change of apprentice name or address
 - transfer to a new sponsor/employer
3. The Skill Set Completion Form must be completed and signed by the current sponsor/employer and presented to the local Apprenticeship Client Services Office at the fulfillment of all terms of a Contract of Apprenticeship/Training Agreement.
4. The apprentice completion form with the Completed and Authorized Training Standard must be presented to the local Apprenticeship Client Services Unit.

Sponsors/Employers and Supervisors/Trainers

The Training Standard identifies skills required for this trade/occupation and its related training program.

This Training Standard has been written in concise statements which describe how an apprentice must perform each skill in order to become competent.

In using this Training Standard, supervisors/trainers will be able to ensure that the apprentice is developing the skills detailed for the trade/occupation.

Supervisors/Trainers and apprentices are required to sign off and date the skills following successful acquisition.

Sponsors/Employers participating in this training program will be designated as the Signing Authority and are required to attest to successful completion by signing the appropriate box included at the end of each skill set.

NOTICE/DECLARATION FOR COLLECTION OF PERSONAL INFORMATION

1. At any time during your apprenticeship training, you may be required to show this Training Standard to the Ministry of Training, Colleges and Universities (the Ministry). You will be required to disclose the signed Apprenticeship Completion form to the Ministry in order to complete your program. The Ministry will use your personal information to administer and finance Ontario's apprenticeship training system, including confirming your completion and issuing your certificate of apprenticeship.
2. The Ministry will disclose information about your program completion and your certificate of apprenticeship to the Ontario College of Trades, as it is necessary for the College to carry out its responsibilities.
3. Your personal information is collected, used and disclosed by the Ministry under the authority of the Ontario College of Trades and Apprenticeship Act, 2009.
4. Questions about the collection, use and disclosure of your personal information by the Ministry may be addressed to the:

Manager, Employment Ontario Contact Centre
Ministry of Training, Colleges and Universities
33 Bloor St. E, 2nd floor, Toronto, Ontario M7A 2S3
Toll-free: 1-800-387-5656; Toronto: 416-326-5656
TTY: 1-866-533-6339 or 416-325-4084.

**ROLES & RESPONSIBILITIES OF APPRENTICE, SPONSOR/EMPLOYER
AND SUPERVISOR/TRAINER**

Apprentice “Apprenticeship is learning on the job”

- Practice safe work habits.
- Use your apprenticeship Training Standard as a journal to keep track of which skills you have achieved.
- Talk over your training plan with your Training Consultant, Employer, Union, or Sponsor.
- Know what tools are required for your trade and how to use them.
- Ask questions and keep asking.
- Talk to your employer about your training needs.
- Demonstrate enthusiasm and good work habits.
- Ensure that you and your supervisor/trainer sign off skill/skill sets upon demonstration of competency.

Sponsor/Employer “Training is an Investment”

- Demonstrate safe work habits.
- Attest to successful achievement by signing the skill/skills sets.
- Provide opportunities and time for the apprentice to learn the trade.
- Offer practical trade training experiences that cover all of the skill sets.
- Foster work ethics that support training while minimizing productivity losses.
- Set out clear expectations, then recognize or reward performance excellence.
- Involve both the apprentice and supervisor/trainer in developing the training plan.
- Use the Training Standard as a monitoring tool and part of regular performance evaluations.
- Select supervisors/trainers with good communication skills and who work well with others.
- Encourage supervisors/trainers to take upgrading courses - (e.g. Train the Trainer, Mentor Coach, etc).
- Complete the Skill Set Completion Form once the apprentice has demonstrated competency in the training.
- Ensure that the apprentice always works under the direction of or has access to a qualified supervisor/trainer.
- Vary the apprentice’s exposure to all the skills set out in the training standard.

Supervisor/Trainer

- Demonstrate safe work habits.
- Treat apprentices fairly and with respect.
- Use the Training Standard as a guide to evaluating competence in each skill area. In using the Training Standard, supervisors/trainers will be able to ensure that the apprentice is developing skills detailed for the trade/occupation.
- Review the Training Standard with the apprentice and develop a training plan.
- Respond fully to all questions.
- Be patient. Explain what is to be done, then show how it is done, and then let the apprentice demonstrate the task.
- Provide continuous feedback.
- Sign off individual skills/skill sets once the apprentice demonstrates competence in the skill.

Suggestions for Assessing the Progress of the Apprentice in the Workplace

- Use informal daily observation.
- Provide constructive feedback to build confidence.
- Allow the supervisor/trainer time to teach and demonstrate the skills.
- Take prompt action wherever problems occur.
- Conduct regular performance reviews involving the apprentice, supervisor/trainer and sponsor/employer.
- Use the Training Standard as the reference for establishing the competency of the apprentice.

SKILL SET COMPLETION FORM

SKILL SET	TITLE	SIGNING AUTHORITY
U0911.0	PROTECT SELF AND OTHERS	
U0912.0	PLAN, PREPARE AND SET UP FOR JOB	
U0913.0	OPERATE AND MAINTAIN HAND AND POWER TOOLS AND AERIAL WORK PLATFORMS	
U0914.0	RIG AND HOIST MATERIALS AND EQUIPMENT	
U0915.0	PLACE REINFORCING MATERIALS	
U0916.0	PLACE POST-TENSIONING TENSONS	
U0917.0	STRESS AND GROUT POST-TENSIONING TENDONS	

NOTE ON SHADED PERFORMANCE OBJECTIVES AND SKILLS:

- Shaded performance objectives and skill sets are optional. The shaded skills do not have to be demonstrated or signed-off for completion of the on-the-job component of the apprenticeship
- The in-school curriculum learning outcomes will cover all of the skill sets, both shaded and unshaded.
- The Certificate of Qualification examination will test the whole of the trade and may test both shaded and unshaded performance skill sets.

U0911.0 PROTECT SELF AND OTHERS

GENERAL PERFORMANCE OBJECTIVE

Protect self and others by: wearing personal protective equipment (PPE; lifting equipment and materials; applying housekeeping rules interpreting warning signs, labels and symbols; reporting hazards to supervisor and safety personnel; maintaining safety devices and equipment; responding to emergency situations; operating construction equipment; maintaining construction equipment; inspecting platforms, ladders and working surfaces; installing and securing platforms, ladders and working surfaces; maintaining platforms, ladders and working surfaces; preventing fires; and communicating with co-workers in the workplace

PERFORMANCE OBJECTIVES

SKILLS

U0911.01 **Wear personal protective equipment (PPE)**, including safety vests, head, ear, eye, hand, foot and respiratory protection, according to the *Occupational Health and Safety Act (OHSA)* and company policies, in order to ensure fit and optimum protection of self and others.

Date Completed

Apprentice

Supervisor/Trainer

U0911.02 **Lift equipment and materials**, manually, using posture and lifting techniques, in order to move material and equipment in a safe and efficient manner and to prevent personal injury.

Date Completed

Apprentice

Supervisor/Trainer

U0911.03 **Apply housekeeping rules**, by removing all obstacles and impediments, in order to maintain a safe work area.

Date Completed

Apprentice

Supervisor/Trainer

U0911.0 PROTECT SELF AND OTHERS ...cont'd

U0911.04 Interpret warning signs, labels and symbols, by inspecting the work area regularly, according to the Workplace Hazardous Materials Information System (WHMIS), in order to determine any danger to self and others.

Date Completed _____
Apprentice _____
Supervisor/Trainer

U0911.05 Report hazards to supervisory and safety personnel, promptly and efficiently, in order to prevent injury to self and others.

Date Completed _____
Apprentice _____
Supervisor/Trainer

U0911.06 Maintain safety devices and equipment, by inspecting, adjusting and maintaining regularly and providing care, according to manufacturer's specifications, in order to ensure safe and efficient operation and to protect self and others from injury.

Date Completed _____
Apprentice _____
Supervisor/Trainer

U0911.07 Respond to emergency situations, by identifying the danger, notifying others and taking corrective action, according to the *OHS*A, company procedures and the Infrastructure Health & Safety Association: Construction Health and Safety Manual, in order to prevent injury to self and others.

Date Completed _____
Apprentice _____
Supervisor/Trainer

U0891.08 Operate construction equipment, by inspecting and maintaining regularly, according to the *OHS*A, manufacturer's instructions and established industry practices, in order to protect self and others from injury.

Date Completed _____
Apprentice _____
Supervisor/Trainer

U0911.0 PROTECT SELF AND OTHERS ...cont'd

U0911.09 Maintain construction equipment, by inspecting regularly and providing care at all times, according to the *OHS*A and manufacturer specifications, in order to ensure safe and efficient operation and to protect self and others from injury.

Date Completed

Apprentice

Supervisor/Trainer

U0911.10 Inspect platforms, ladders and working surfaces, according to the *OHS*A and manufacturer specifications, in order ensure safe work area to prevent injury to self and others.

Date Completed

Apprentice

Supervisor/Trainer

U0911.11 Install and secure platforms, ladders and working surfaces, ensuring that power elevated working platforms are certified for use and operators are certified, by inspecting and maintaining regularly, according to the *OHS*A and manufacturer specifications, in order to protect self and others from injury.

Date Completed

Apprentice

Supervisor/Trainer

U0911.12 Maintain platforms, ladders and working surfaces, by inspecting regularly and providing care, according to the *OHS*A and manufacturer specifications, in order to protect self and others from injury.

Date Completed

Apprentice

Supervisor/Trainer

U0911.13 Prevent fires, by inspecting the work area, identifying potential or actual hazards, obtaining required permits and fire extinguishing equipment and using barriers, blankets and a fire watch assistant, in order to prevent injury to self and others.

Date Completed

Apprentice

Supervisor/Trainer

U0911.0 **PROTECT SELF AND OTHERS ...cont'd**

U0911.14 **Communicate with co-workers in the workplace**, at all times and warning co-workers of hazards or potential hazards, in order to ensure safe workplace and to prevent injury to self and others.

Date Completed

Apprentice

Supervisor/Trainer

U0911.15 **Stress tendons**, by ensuring adequate platform working area and easy access to the work location, in order to prevent exposure of self and others to injury from tendon breakage behind back anchors.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

U0912.0 PLAN, PREPARE AND SET UP FOR JOB

GENERAL PERFORMANCE OBJECTIVE

Plan, prepare and set up for job by: reading and interpreting drawings and specifications; planning tasks; determining installation procedures and sequences; setting up equipment; unloading, sorting/shaking out and staging inventory materials; setting up and operating manual and power bending equipment.

PERFORMANCE OBJECTIVES

SKILLS

U0912.01 Read and interpret drawings and specifications, including structural, mechanical, architectural, ornamental, fabrication, placing, bar list, tendon profile and welding blueprints, diagrams, sections, details and specific procedures, before commencing task operations, in order to identify tasks to be performed and to determine required assembly, installation and erection materials and sequence.

Date Completed

Apprentice

Supervisor/Trainer

U0912.02 Plan tasks, by preparing and scheduling tasks and determining required personnel, materials and equipment, according to drawings and specifications, to ensure safe and efficient performance of the tasks.

Date Completed

Apprentice

Supervisor/Trainer

U0912.03 Determine installation procedures and sequences, by conducting pre-installation task analyses to confirm availability of materials for installation, site conditions and access, and available personnel and equipment, in order to ensure safe and efficient installation.

Date Completed

Apprentice

Supervisor/Trainer

U0912.0 PLAN, PREPARE AND SET UP FOR JOB...cont'd

U0912.04 Set up equipment, using space, materials and personnel, in order to ensure timely commencement of task performance.

Date Completed

Apprentice

Supervisor/Trainer

U0912.05 Unload, sort/shake out and stage inventory materials, as required, in order to prepare for timely, safe and efficient assembly, installation and erection.

Date Completed

Apprentice

Supervisor/Trainer

U0912.06 Set up manual and power bending equipment, according to the *OHS*A and manufacturer specifications, in order to prepare materials for installation and fabrication by straightening, cutting, bending and shaping to the bend diameters and dimensions required for installation.

Date Completed

Apprentice

Supervisor/Trainer

U0912.07 Operate manual and power bending equipment, according to the *OHS*A and manufacturer specifications, in order to prepare materials for installation and fabrication by straightening, cutting, bending and shaping to the bend diameters and dimensions required for installation.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

U0913.0 OPERATE AND MAINTAIN HAND AND POWER TOOLS AND AERIAL WORK PLATFORMS

GENERAL PERFORMANCE OBJECTIVE

Operate and maintain hand and power tools and aerial work platforms by: identify hand tools; selecting hand tools; using hand tools; maintaining hand tools; identifying power tools; selecting power tools; operating power tools; maintaining power tools; identifying oxygen and fuel gas equipment; selecting oxygen and fuel gas equipment, maintaining oxygen and fuel gas equipment; identifying oxygen and fuel gas equipment; selecting oxygen and fuel gas equipment; operating oxygen and fuel gas equipment; maintaining oxygen and fuel gas equipment; identifying post-tensioning equipment; selecting post-tensioning equipment; setting up and adjusting post-tensioning equipment; operating post-tensioning equipment; maintaining post-tensioning equipment; identifying aerial work platforms; selecting aerial work platforms; setting up aerial work platforms; operating aerial work platforms; and maintaining aerial work platforms

PERFORMANCE OBJECTIVES

SKILLS

U0913.01 Identify hand tools, including bolt cutters, pliers, side cutters, wire reels, box cutters and measuring tapes, in order to ensure safe and efficient task performance.

Date Completed

Apprentice

Supervisor/Trainer

U0913.02 Select hand tools, including bolt cutters, pliers, side cutters, wire reels, box cutters and measuring tapes, in order to ensure safe and efficient task performance.

Date Completed

Apprentice

Supervisor/Trainer

U0913.0 OPERATE AND MAINTAIN HAND AND POWER TOOLS ...cont'd

U0913.03 Use hand tools, including bolt cutters, pliers, side cutters, wire reels, box cutters and measuring tapes, according to manufacturer’s drawings and specifications, in order to ensure safe and efficient task performance.

Date Completed _____
Apprentice _____
Supervisor/Trainer

U0913.04 Maintain hand tools, including bolt cutters, pliers, side cutters, wire reels, box cutters and measuring tapes, according to manufacturer’s drawings and specifications, in order to ensure safe and efficient task performance.

Date Completed _____
Apprentice _____
Supervisor/Trainer

U0913.05 Identify power tools, including shears, electric drills, hammer-drills, quick cut saws, grinders, and electric or pneumatic impact wrenches, in order to ensure safe and efficient task performance.

Date Completed _____
Apprentice _____
Supervisor/Trainer

U0913.06 Select power tools, including shears, electric drills, hammer-drills, quick cut saws, grinders, and electric or pneumatic impact wrenches, in order to ensure safe and efficient task performance.

Date Completed _____
Apprentice _____
Supervisor/Trainer

U0913.07 Operate power tools, including shears, electric drills, hammer-drills, quick cut saws, grinders, and electric or pneumatic impact wrenches, according to manufacturer’s drawings and specifications, in order to ensure safe and efficient task performance.

Date Completed _____
Apprentice _____
Supervisor/Trainer

U0913.0 OPERATE AND MAINTAIN HAND AND POWER TOOLS ...cont'd

U0913.08 Maintain power tools, including shears, electric drills, hammer-drills, quick cut saws, grinders, and electric or pneumatic impact wrenches, according to manufacturer's drawings and specifications, in order to ensure safe and efficient task performance.

Date Completed

Apprentice

Supervisor/Trainer

U0913.09 Identify oxygen and fuel gas equipment, according to the *OHSA* and manufacturer specifications, in order to produce accurate cuts on reinforcing steel free from excessive slag.

Date Completed

Apprentice

Supervisor/Trainer

U0913.10 Select oxygen and fuel gas equipment, according to the *OHSA* and manufacturer's specifications, in order produce accurate cuts on reinforcing steel free from excessive slag.

Date Completed

Apprentice

Supervisor/Trainer

U0913.11 Set up and adjust oxygen and fuel gas equipment, according to the *OHSA* and manufacturer's specifications, in order produce accurate cuts on reinforcing steel free from excessive slag.

Date Completed

Apprentice

Supervisor/Trainer

U0913.12 Operate oxygen and fuel gas equipment, according to the *OHSA* and manufacturer's specifications, in order produce accurate cuts on reinforcing steel free from excessive slag.

Date Completed

Apprentice

Supervisor/Trainer

U0913.0 OPERATE AND MAINTAIN HAND AND POWER TOOLS ...cont'd

U0913.13 Maintain oxygen and fuel gas equipment, to according to the *OHSA* and manufacturer's specifications, in order produce accurate cuts on reinforcing steel free from excessive slag.

Date Completed

Apprentice

Supervisor/Trainer

U0913.14 Identify post-tensioning equipment, including winches, hydraulic pumps, stressing jacks, shears, plasma cutters, and grout machines, according to manufacturer's specifications, in order to ensure safe and efficient task performance.

Date Completed

Apprentice

Supervisor/Trainer

U0913.15 Select post-tensioning equipment, including winches, hydraulic pumps, stressing jacks, shears, plasma cutters, and grout machines, according to manufacturer's specifications, in order to ensure safe and efficient task performance.

Date Completed

Apprentice

Supervisor/Trainer

U0913.16 Set up and adjust post-tensioning equipment, including winches, hydraulic pumps, stressing jacks, shears, plasma cutters, and grout machines, according to manufacturer's specifications, in order to ensure safe and efficient task performance.

Date Completed

Apprentice

Supervisor/Trainer

U0913.17 Operate post-tensioning equipment, including winches, hydraulic pumps, stressing jacks, shears, plasma cutters, and grout machines, according to manufacturer's specifications, in order to ensure safe and efficient task performance.

Date Completed

Apprentice

Supervisor/Trainer

U0913.0 OPERATE AND MAINTAIN HAND AND POWER TOOLS ...cont'd

U0913.18 Maintain post-tensioning equipment, including winches, hydraulic pumps, stressing jacks, shears, plasma cutters, and grout machines, according to manufacturer's specifications, in order to ensure safe and efficient task performance.

Date Completed

Apprentice

Supervisor/Trainer

U0913.19 Identify aerial work platforms, including scissor lifts, articulated boom lifts and scaffolding, according to the *OHS*A and manufacturer's specifications, in order to ensure safe and efficient task performance

Date Completed

Apprentice

Supervisor/Trainer

U0913.20 Select aerial work platforms, including scissor lifts, articulated boom lifts and scaffolding, according to the *OHS*A and manufacturer's specifications, in order to ensure safe and efficient task performance.

Date Completed

Apprentice

Supervisor/Trainer

U0913.21 Set up aerial work platforms, including scissor lifts, articulated boom lifts and scaffolding, according to the *OHS*A and manufacturer's specifications, in order to ensure safe and efficient task performance.

Date Completed

Apprentice

Supervisor/Trainer

U0913.22 Operate aerial work platforms, including scissor lifts, articulated boom lifts and scaffolding, according to the *OHS*A and manufacturer's specifications, in order to ensure safe and efficient task performance.

Date Completed

Apprentice

Supervisor/Trainer

U0913.0 OPERATE AND MAINTAIN HAND AND POWER TOOLS ...cont'd

U0913.23 Maintain aerial work platforms, including scissor lifts, articulated boom lifts and scaffolding, according to the *OHSA* and manufacturer's specifications, in order to ensure safe and efficient task performance.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

U0914.0 RIG AND HOIST MATERIALS AND EQUIPMENT

GENERAL PERFORMANCE OBJECTIVE

Rig and hoist materials and equipment by: performing calculations; selecting slings; assembling slings; inspecting and maintaining slings; selecting rigging hardware; assembling rigging hardware; inspecting and maintaining rigging hardware; selecting hoisting equipment; assembling hoisting equipment; inspecting and maintaining hoisting equipment; reeving or lacing blocks; tying and rendering knots, hitches and bends; splicing fibre rope; and establishing hand, voice and radio communications with co-workers and equipment operators..

PERFORMANCE OBJECTIVES

SKILLS

U0914.01 Perform rigging and hoisting calculations, by determining the weight of the load, equipment capacity, location of components and place of installation, in order to ensure safe and efficient rigging and hoisting.

Date Completed

Apprentice

Supervisor/Trainer

U0914.02 Select slings, including the types and sizes, numbers and configurations of wire rope, natural and synthetic fibre and chain slings, according to the Rigging for Ironworkers manual, in order to prepare for safe and efficient lifting, moving and placing of load.

Date Completed

Apprentice

Supervisor/Trainer

U0914.03 Assemble slings, including the types and sizes, numbers and configurations of wire rope, natural and synthetic fibre and chain slings, according to the Rigging for Ironworkers manual, in order to prepare for safe and efficient lifting, moving and placing of load.

Date Completed

Apprentice

Supervisor/Trainer

U0914.0 RIG AND HOIST MATERIALS AND EQUIPMENT...cont'd

U0914.04 Inspect and maintain slings, by checking operation of moving components, condition of fibre and wire ropes, chains and attachments, lubricating and replacing damaged parts, according to manufacturer's instructions and the Rigging for Ironworkers manual, in order to ensure safe, efficient and productive rigging and hoisting.

Date Completed

Apprentice

Supervisor/Trainer

U0914.05 Select rigging hardware, including the types and sizes, numbers and configurations of shackles, spreader beams, cable clips, hooks, eyebolts, turnbuckles and blocks, according to the Rigging for Ironworkers manual, in order to prepare for safe and efficient lifting, moving and placing of load.

Date Completed

Apprentice

Supervisor/Trainer

U0914.06 Assemble rigging hardware, including the types and sizes, numbers and configurations of shackles, spreader beams, cable clips, hooks, eyebolts, turnbuckles and blocks, according to the Rigging for Ironworkers manual, in order to prepare for safe and efficient lifting, moving and placing of load.

Date Completed

Apprentice

Supervisor/Trainer

U0914.07 Inspect and maintain rigging hardware, by checking operation of moving components, condition of fibre and wire ropes, chains and attachments, lubricating and replacing damaged parts, according to the manufacturer's instructions and the Rigging for Ironworkers manual, in order to ensure safe, efficient and productive rigging and hoisting.

Date Completed

Apprentice

Supervisor/Trainer

U0914.0 RIG AND HOIST MATERIALS AND EQUIPMENT...cont'd

U0914.08 Select hoisting equipment, including the types and sizes, numbers and configurations of chain falls, come-a-longs, tirlfors and tuggers, according to the Rigging for Ironworkers manual, in order to prepare for safe and efficient lifting, moving and placing of load.

Date Completed

Apprentice

Supervisor/Trainer

U0914.09 Assemble hoisting equipment, including the types and sizes, numbers and configurations of chain falls, come-a-longs, tirlfors and tuggers, according to the Rigging for Ironworkers manual, in order to prepare for safe and efficient lifting, moving and placing of load.

Date Completed

Apprentice

Supervisor/Trainer

U0914.10 Inspect and maintain hoisting equipment, by checking operation of moving components, condition of fibre and wire ropes, chains and attachments, lubricating and replacing damaged parts, according to the manufacturer's instructions and the Rigging for Ironworkers manual, in order to ensure safe, efficient and productive rigging and hoisting.

Date Completed

Apprentice

Supervisor/Trainer

U0914.11 Reeve or lace blocks, according to the Rigging for Ironworkers manual, in order to ensure safe and efficient rigging.

Date Completed

Apprentice

Supervisor/Trainer

U0914.12 Tie and render knots, hitches and bends, using natural fibre and synthetic rope, according to the Rigging for Ironworkers manual, in order to tie off material, equipment and personnel in a safe and secured manner.

Date Completed

Apprentice

Supervisor/Trainer

U0914.0 RIG AND HOIST MATERIALS AND EQUIPMENT...cont'd

U0914.13 Splice fibre rope, according to the Rigging for Ironworkers manual, in order to ensure safe working capacity.

Date Completed

Apprentice

Supervisor/Trainer

U0914.14 Establish hand, voice and radio communications with co-workers and equipment operators, including specific signals used for helicopter lifts, in order to convey instructions and information to facilitate assembly, erection and installation, and to protect self and others from injury.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

U0915.0 PLACE REINFORCING MATERIALS

GENERAL PERFORMANCE OBJECTIVE

Place reinforcing materials by: identifying, selecting and sorting reinforcing materials; identifying, selecting, placing and tying reinforcing materials; identifying, selecting and installing bar supports; installing beams, columns and walls; placing and tying reinforcing materials for slab installations; placing and tying reinforcing materials for footings; pre-assembling reinforcing bar columns, beams, walls, cages and components; splicing reinforcing bars; hoisting, erecting, connecting and setting reinforcing bar assemblies; positioning, securing and installing welded wire fabric; and performing final inspection.

PERFORMANCE OBJECTIVES

SKILLS

U0915.01 Identify reinforcing materials, including steel, stainless steel, epoxy and galvanized coated, fibreglass and other composite material by size, length and type, according to the bar lists, placing drawings and structural drawings, in order to meet requirements of drawings and specifications.

Date Completed

Apprentice

Supervisor/Trainer

U0915.02 Select reinforcing materials, including steel, stainless steel, epoxy and galvanized coated, fibreglass and other composite material by size, length and type, in order to meet requirements of drawings and specifications.

Date Completed

Apprentice

Supervisor/Trainer

U0915.03 Sort reinforcing materials, including steel, stainless steel, epoxy and galvanized coated, fibreglass and other composite material by size, length and type, according to the bar lists, placing drawings and structural drawings, in order to ensure efficient and proper placement.

Date Completed

Apprentice

Supervisor/Trainer

U0915.0 PLACE REINFORCING MATERIALS ...cont'd

U0915.04 Place and tie reinforcing materials, using tools and hardware, according to the drawings and Manual of Standards Practice of Reinforcing Steel Institute of Canada (RSIC), in order to ensure spacing, tolerances, ties, tie applications, tie sequences and concrete cover.

Date Completed

Apprentice

Supervisor/Trainer

U0915.05 Identify bar supports, including plastic, wire, concrete and rebar types, securing with ties, according to the drawings and RSIC Manual, to ensure proper installation of reinforcing materials and concrete cover.

Date Completed

Apprentice

Supervisor/Trainer

U0915.06 Select bar supports, including plastic, wire, and concrete and rebar types, securing with ties, according to the drawings and RSIC Manual, in order to ensure proper installation of reinforcing materials and concrete cover.

Date Completed

Apprentice

Supervisor/Trainer

U0915.07 Install bar supports, including plastic, wire, concrete and rebar types, securing with ties, according to the drawings and RSIC Manual, to ensure proper installation of reinforcing materials and concrete cover.

Date Completed

Apprentice

Supervisor/Trainer

U0915.08 Install reinforcing materials for beams, columns and walls, using tools and hardware, bar supports, ties and platforms following required installation sequence, according to the drawings and the RSIC Manual, to ensure bar types, spacing, tolerances and concrete cover.

Date Completed

Apprentice

Supervisor/Trainer

U0915.0 PLACE REINFORCING MATERIALS ...cont'd

U0915.09 Place and tie reinforcing materials for slab installations, including two-way, one-way, waffle and joist slabs, using tools, hardware and bar supports, according to the drawings and RSIC Manual, to ensure bar types, spacing, tolerances and concrete cover.

Date Completed

Apprentice

Supervisor/Trainer

U0915.10 Place and tie reinforcing materials for footings, using field fabricated spacers, templates, concrete supports and welded supports, following sequence, according to the drawings and the RSIC Manual, in order to ensure bar types, spacing, tolerances and concrete cover.

Date Completed

Apprentice

Supervisor/Trainer

U0915.11 Pre-assemble reinforcing bar columns, beams, walls, cages and components, according to the drawings and the RSIC Manual, in order to ensure safe and efficient assembly.

Date Completed

Apprentice

Supervisor/Trainer

U0915.12 Splice reinforcing bars, including lap, mechanical or welded splices, according to the RSIC Manual, in order to ensure compliance with drawings and manufacturer's specifications.

Date Completed

Apprentice

Supervisor/Trainer

U0915.13 Hoist reinforcing bar assemblies, using hoisting and rigging equipment, according to the drawings and required procedures, in order to complete installations.

Date Completed

Apprentice

Supervisor/Trainer

U0915.0 PLACE REINFORCING MATERIALS ...cont'd

U0915.14 Place reinforcing bar assemblies, using hoisting and rigging equipment, tools and hardware, according to drawings and procedures, in order to complete installations.

Date Completed

Apprentice

Supervisor/Trainer

U0915.15 Position welded wire fabric, using hand tools and components, according to drawings and the RSIC Manual, in order to ensure safe and efficient installation.

Date Completed

Apprentice

Supervisor/Trainer

U0915.16 Secure welded wire fabric, using hand tools and components, according to drawings and the RSIC Manual, to ensure safe and efficient installation.

Date Completed

Apprentice

Supervisor/Trainer

U0915.17 Perform final inspection of reinforcing installations, prior to a concrete pour, according to drawings, in order to ensure safe and efficient performance of task.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

U0916.0 PLACE POST-TENSIONING AND BAR TENDONS

GENERAL PERFORMANCE OBJECTIVE

Place post-tensioning and bar tendons by: performing pre-installation procedure and layout; ordering work site materials and equipment for tendon placing operations; installing bearing plates and bursting steel; installing tendon and sheathing supports, chairs, sheathing and couplers; installing bonded post-tensioning cables in sheathing; installing unbonded post-tensioning cables on supports; assembling dead-end anchors; and performing final inspection of post-tensioning installations.

PERFORMANCE OBJECTIVES

SKILLS

U0916.01 Perform pre-installation procedure and layout, by locating and marking bearing plates and ordinate locations, using drawings, tendon charts and specifications, to ensure required accuracy and tolerances.

Date Completed

Apprentice

Supervisor/Trainer

U0916.02 Order work site materials and equipment, for tendon placing operations, according to drawings, tendon charts and specifications, in order to ensure selection and quantity.

Date Completed

Apprentice

Supervisor/Trainer

U0916.03 Install bearing plates and bursting steel, using hand and power tools and attaching grout hoses, according to the drawings and tendon charts and specifications, in order to ensure tendon type, location and tolerances.

Date Completed

Apprentice

Supervisor/Trainer

U0916.0 PLACE POST-TENSIONING TENDONS ...cont'd

U0916.04 Install tendon and sheathing supports, chairs, sheathing and couplers, using hand and power tools and duct tape, installing grout vents at high points, according to drawings, tendon charts and specifications, in order to ensure spacing, ordinates, tolerances and concrete cover.

Date Completed

Apprentice

Supervisor/Trainer

U0916.05 Install bonded post-tensioning cables in sheathing, using equipment, hand and power tools, in order to ensure damage free installation of tendon type and cable projection for stressing operations.

Date Completed

Apprentice

Supervisor/Trainer

U0916.06 Install unbonded post-tensioning cables on supports, using hand tools and equipment, according to drawings and specifications, in order to ensure damage free installation and cable projection for stressing operations, spacing, ordinates, tolerances and concrete cover.

Date Completed

Apprentice

Supervisor/Trainer

U0916.07 Assemble dead-end anchors, using hand and power tools, in order to meet requirements of drawings and specifications.

Date Completed

Apprentice

Supervisor/Trainer

U0916.0 PLACE POST-TENSIONING TENDONS ...cont'd

U0916.08 Perform final inspection of post-tensioning installations, prior to a concrete pour, in order to meet requirements of drawings and specifications.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

U0917.0 STRESS AND GROUT POST-TENSIONING AND BAR TENDONS

GENERAL PERFORMANCE OBJECTIVE

Stress and grout post-tensioning and bar tendons by: interpreting engineering instructions for bar and cable stressing and cable stress sequence, ordering work site materials and equipment for tendon stressing and grouting operations; installing anchor head and wedges and stressing plates; positioning stressing jacks and hydraulic pumps; applying stress to post-tensioning tendons; cropping cables to specified strand projection length; performing pre-grouting operations; and performing final grouting operations.

PERFORMANCE OBJECTIVES

SKILLS

U0917.01 Interpret engineering instructions, for bar and cable stressing and cable stress sequence, checking the calibration of stressing jacks and hydraulic gauges in preparation for stressing, in order to ensure compliance with drawings.

Date Completed

Apprentice

Supervisor/Trainer

U0917.02 Order work site materials and equipment, for tendon stressing and grouting operations, according to placing drawings and engineering instructions, in order to ensure selection and quantity.

Date Completed

Apprentice

Supervisor/Trainer

U0917.03 Install anchor head, wedges and stressing plates, according to engineering instructions, drawings and specifications, to ensure safe and efficient task performance.

Date Completed

Apprentice

Supervisor/Trainer

U0917.0 STRESS AND GROUT POST-TENSIONING TENDONS ...cont'd

U0917.04 **Select stressing jacks and hydraulic pumps**, according to manufacturer and engineering specifications to ensure safe and efficient task performance.

Date Completed

Apprentice

Supervisor/Trainer

U0917.05 **Position stressing jacks and hydraulic pumps**, using hoisting or lifting techniques, to ensure safe and efficient task performance.

Date Completed

Apprentice

Supervisor/Trainer

U0917.06 **Apply stress to post-tensioning and bar tendons**, using a stressing jack connected to a hydraulic pump with pressure gauge, following stress sequence, to achieve the jacking forces specified by engineering instructions and placing drawings, in order to prepare tendon stressing reports.

Date Completed

Apprentice

Supervisor/Trainer

U0917.07 **Crop cables to specified strand projection length**, using cutting equipment, after approval of tendon stressing reports and installing grout hoses, in order to permit capping or pouring of anchor recess pockets.

Date Completed

Apprentice

Supervisor/Trainer

U0917.08 **Perform pre-grouting operations**, using an air compressor to ensure all grout hoses, vents and sheathing are free from obstruction, according to drawings, in order to facilitate the pumping of grout.

Date Completed

Apprentice

Supervisor/Trainer

U0917.0 STRESS AND GROUT POST-TENSIONING TENDONS ...cont'd

U0917.09 Perform final grouting operations, using a grout pump, by mixing specified grout materials with a high speed shear mixer and filling the sheathing with grout mixture, in order to meet requirements of drawings and specifications.

Date Completed

Apprentice

Supervisor/Trainer

Sponsor/Employer Name

Sponsor/Employer Signature

APPRENTICE RECORD

You will be required to disclose this signed form to the Ministry of Training, Colleges and Universities in order to complete your program. The Ministry will use your personal information to administer and finance Ontario's apprenticeship training system.

For further information please see the notice/declaration for collection of personal information that is referenced in the table of contents of this training standard.

APPRENTICE NAME (Print):

SPONSOR/EMPLOYER INFORMATION	
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Training Agreement #	
Name	
Address	
Telephone	
E-mail Address	

SUMMARY OF TRAINING	
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Employment Start Date	
Employment End Date	
Total hours of training & instruction between dates of employment	

Date Completed

Apprentice

Supervisor/Trainer

APPRENTICE RECORD

APPRENTICE NAME (Print):

SPONSOR/EMPLOYER INFORMATION

Training Agreement #

Name

Address

Telephone

E-mail Address

SUMMARY OF TRAINING

Employment Start Date

Employment End Date

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 Date Completed

 Apprentice

 Supervisor/Trainer

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SPONSOR/EMPLOYER INFORMATION	
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Name	
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Telephone	
E-mail Address	

SUMMARY OF TRAINING	
Employment Start Date	
Employment End Date	
Total hours of training & instruction between dates of employment	

Date Completed

Apprentice

Supervisor/Trainer

APPRENTICE COMPLETION FORM

APPRENTICE INFORMATION	
Name (Print)	
Signature	
Social Insurance Number	

Skill Sets when completed should be signed by the Supervisor/Trainer and presented with this completion form to your local Apprenticeship Client Services Office. Any supporting documentation should also be attached.

In-school Completed Yes () No () Not applicable ()
 (Proof to be Provided)

Hours completed as
 Per Contract: Yes () No () Not applicable ()

SPONSOR/EMPLOYER INFORMATION	
Name (Print)	
Address	
Telephone	
E-mail Address	
Signature of Signing Authority	