



ONTARIO COLLEGE OF TRADES

ORDRE DES MÉTIERS DE L'ONTARIO

Apprenticeship
Training Standard
Log Book

**Precast
Concrete
Erector**

244K

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PREFACE

This training standard was developed by the Ministry of Advanced Education and Skills Development (MAESD), 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 are 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.

NOTE:

The technical and work processes that this trade performs have been carefully reviewed to include requirements for emerging "green" technologies, managing surplus or scrap materials, conserving building materials and energy, and preventing spills or escape of 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 Advanced Education and Skills Development (MAESD). 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 (<http://www.collegeoftrades.ca>) for the most accurate and up-to-date information about the College. For information on OCTAA and its regulations, please visit: <http://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 OF COLLECTION OF PERSONAL INFORMATION

1. At any time during your apprenticeship training, you may be required to show this Log Book to the Ministry of Advanced Education and Skills Development. You will be required to submit the signed Apprenticeship Completion form to the Ministry of Advanced Education and Skills Development in order to complete your program. The Ministry of Advanced Education and Skills Development 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 of Advanced Education and Skills Development 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 of Trades 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 Advanced Education and Skills Development
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
7300	Protect Self and Others	
7301	Load Precast Units On-Site	
7302	Conduct Pre-Erection Survey	
7303	Unload and Store Precast Units	
7304	Install and Align Precast Units	
7305	Install Bolted Precast Connections	
7306	Make Welded Precast Connections	
7307	Installed Dowelled Precast Connections	
7308	Apply Grout	
7309	Protect Precast Units, Hardware and Joints	

NOTE ON SHADED PERFORMANCE OBJECTIVES AND SKILLS:

- Some performance objectives may have shading.
- 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.

7300.0 PROTECT SELF AND OTHERS GENERAL

PERFORMANCE OBJECTIVE

Protect self and others by applying safety legislation, keeping the workplace clean and organized, following fire procedures, practicing first aid, ensuring proper lighting and installation of guard rails, using safety devices on tools and equipment, wearing and using protective apparel and devices, ensuring adequate ventilation, lifting and carrying correctly, setting up and using access equipment, avoiding hoisting over people, complying with company procedures, and reporting unsafe conditions.

TERMINAL PERFORMANCE OBJECTIVES

Supervisor's Name (print)

Apprentice's Name (print)

SKILLS

7300.01 Apply the safety directives provided in legislation, such as the Occupational Health and Safety Act (including the Workplace Hazardous Materials Information System), the Construction Safety Act, and Construction Codes.

Date Completed

Supervisor's Signature

Apprentice's Signature

7300.02 Keep the workplace clean and well-organized, with travelled areas free from obstacles, to prevent injury from tripping or from falling objects.

Date Completed

Supervisor's Signature

Apprentice's Signature

7300.03 Follow fire regulations and procedures as prescribed.

Date Completed

Supervisor's Signature

Apprentice's Signature

7300.04 Practice basic first aid, including C.P.R. training, and identify the location of first aid equipment and supplies.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7300.05 Confirm that the worksite has the required lighting, approximately one 200-Watt bulb for every 400 square feet of area.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7300.06 Install and/or replace required guard rails to protect both workers and the public, as per manufacturers' instructions and the Construction Safety Act.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7300.07 Use the safety features of tools and equipment as prescribed by the manufacturer's instructions.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7300.08 Wear, adjust, use and maintain properly fitting protective apparel and devices, such as prescribed footwear, gloves, goggles, safety harnesses and masks suitable for a specific job as per manufacturers' instructions, and as required by The Occupational Health and Safety Act and the Construction Safety Act.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7300.09 Confirm required ventilation at the worksite to effectively eliminate noxious fumes and gases when working in confined spaces, as required by the Occupational Health and Safety Act.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7300.10 Lift and carry heavy objects in such a way as to avoid personal injury, such as back strain, in accordance with the Occupational Health and Safety Act.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7300.11 Identify and report to designated individuals, accidents, injuries, and unsafe, hazardous and toxic conditions that might impair the health of exposed workers or bystanders.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7300.12 Select, set up, maintain, and use various types of access equipment such as ladders, scaffolds, and swing stages in compliance with The Occupational Health and Safety Act.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7300.13 Avoid hoisting over people, in accordance with The Occupational Health and Safety Act and the Construction Act.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7300.14 Comply with the applicable safety procedures and policies affecting the workplace that are set out by precast concrete companies and associations.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____
	Employer's Name	Employer's Signature
	_____	_____

7301.0 LOAD PRECAST UNITS ON-SITE

GENERAL PERFORMANCE OBJECTIVE

Load precast units on-site by planning the load, putting in place prescribed supports and cushioning, loading sequentially onto a trailer, tying the load down, and preparing the load and the vehicle for road and weather conditions.

TERMINAL PERFORMANCE OBJECTIVES

Supervisor's Name (print)

Apprentice's Name (print)

SKILLS

7301.01 Calculate and plan the load so that it conforms to government transportation rules and regulations, with emphasis on legal size and weight limitations.

Date Completed

Supervisor's Signature

Apprentice's Signature

7301.02 Put in place prescribed supports, frames, blocking and cushioning to prevent in-transit damage of the concrete and the vehicle, in accordance with the Construction Safety Act.

Date Completed

Supervisor's Signature

Apprentice's Signature

7301.03 Load precast units (new or damaged returns) onto a trailer, using a crane, in a way that will permit their subsequent unloading in the proper sequence and orientation to minimize handling and hazards.

Date Completed

Supervisor's Signature

Apprentice's Signature

7301.04 Tie down the load with chains, binders, belts, etc. to stabilize the load and prevent damage to the precast and the trailer, in conformance with the Construction Safety Act.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7301.05 Prepare the load and the trailer to accommodate the prevailing road and weather conditions.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

Employer's Name	Employer's Signature
_____	_____

7302.0 CONDUCT PRE-ERECTION SURVEY

GENERAL PERFORMANCE OBJECTIVE

Conduct pre-erection survey by establishing elevations and grid lines, checking building dimensions, establishing component locations, laying out for pre-welded hardware, checking cast-in-site hardware and reporting discrepancies.

TERMINAL PERFORMANCE OBJECTIVES

Supervisor's Name (print)

Apprentice's Name (print)

SKILLS

7302.01 Establish elevations of precast components, using string lines, hand levels, transit, plumb bob, measuring tapes and markers as indicated on precast drawings in relation to site benchmark provided.

Date Completed

Supervisor's Signature

Apprentice's Signature

7302.02 Establish grid lines in relation to North/South and East/West axis lines as indicated on precast drawings.

Date Completed

Supervisor's Signature

Apprentice's Signature

7302.03 Check that the overall dimensions of building structure in terms of length, width and floor heights are as indicated on precast drawings, and document and report discrepancies to the immediate supervisor.

Date Completed

Supervisor's Signature

Apprentice's Signature

7302.04 Establish location of components relative to grid lines and benchmarks shown on precast layout drawings.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7302.05 Perform layout for any pre-welded hardware from precast layout drawings.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7302.06 Check cast-in-site hardware per general contractor (G.C.) layout drawings, to ascertain that hardware is installed according to drawings, and document and report discrepancies to the immediate supervisor.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

Employer's Name	Employer's Signature
_____	_____

7303.0 UNLOAD AND STORE PRECAST UNITS

GENERAL PERFORMANCE OBJECTIVE

Unload and store precast concrete units by checking for product quality; locating, dropping and securing trailer; preparing for unloading; removing bracing and packing; hooking up units; securing remaining load; signaling for lifting, tilting and rotating; and storing the units.

TERMINAL PERFORMANCE OBJECTIVES

Supervisor's Name (print)

Apprentice's Name (print)

SKILLS

7303.01 Check for product quality such as chipped edges, cracks, blemishes, stains, and edge condition, and report imperfections to the supervisor.

Date Completed

Supervisor's Signature

Apprentice's Signature

7303.02 Ensure trailer is located and "dropped" at the designated area and securely blocked to ensure that the trailer remains stable.

Date Completed

Supervisor's Signature

Apprentice's Signature

7303.03 Prepare to unload precast units by ensuring safe working conditions including safe access for workers to the trailer deck and to hook-up points.

Date Completed

Supervisor's Signature

Apprentice's Signature

PRECAST CONCRETE ERECTOR

7303.04 Remove all bracing, packing, and protective edges from the units, as required, and ensure safe return of same.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7303.05 Hook up units with the prescribed lifting equipment (such as hooks, shackles, chokers, slings, bolts and swivel plates) under strict direction, paying particular attention to designated hook-up points and procedures.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7303.06 Secure balance of load (with chains, clamps, blocking, etc.) to the trailer or support frames to prevent overturning.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7303.07 Signal hoist operator to lift precast units from the trailer after making sure stability of trailer is maintained and that care is exercised to prevent personal injury and damage to precast components from erection hardware and lifting devices.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7303.08 Signal the operator if it is required to tilt on the trailer, or on the ground, or to rotate units in the air, as specified by design and/or supervisor.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7303.09 Select and prepare the site storage area for precast units and/or trailers so that it allows hoisting equipment to locate and move materials safely and unobstructed.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7303.10 As required, store precast units with identification marks visible, on a well- drained, firm, level area to prevent over stressing from the effects of ground movements (such as frost heaves or sinking of backfill), and away from damaging construction activity.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

Employer's Name	Employer's Signature
_____	_____

7304.0 INSTALL AND ALIGN PRECAST UNITS

GENERAL PERFORMANCE OBJECTIVE

Install and align precast concrete units by checking environmental conditions and materials and equipment; installing shoring, bracing and guying; pre-assembling precast sections; pre-installing erection hardware; locating trailer; checking cables, hooks and slings; placing hardware; hooking up units; guiding into final position; stabilizing units; installing temporary connections; checking alignment; and installing hardware and making permanent connections.

TERMINAL PERFORMANCE OBJECTIVES

Supervisor’s Name (print)

Apprentice’s Name (print)

SKILLS

7304.01 Confirm that environmental conditions such as wind, icing, and electrical hazards are safe before proceeding with the work, and report hazardous conditions to the supervisor, in accordance with The Occupational Health and Safety Act and the Construction Safety Act.

Date Completed

Supervisor’s Signature

Apprentice’s Signature

7304.02 Check the availability of all materials and support equipment identified by the supervisor and required to proceed with the work, and report any shortages.

Date Completed

Supervisor’s Signature

Apprentice’s Signature

7304.03 Install shoring, bracing, and guying materials as directed by the supervisor or specified by the erection drawings and details, taking into account local conditions.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7304.04 Pre-assemble, using crow bars, wrenches, jigs, measuring and holding tools, sections of precast units by means of mechanical hardware or prepare for weldments where this procedure is required before hoisting and installation of the units, based on erection drawings.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7304.05 Pre-install erection hardware, using various types of wrenches, to units where required, prior to hoisting and installation of the units, as required by the erection drawings.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7304.06 Locate loaded trailer within operating range and lifting capacity of crane.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7304.07 Check cables, hooks and slings for defects, and bolts for thread damage, bending and correct size.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7304.08 Place shims, bearing pads, or other hardware upon which the precast unit is to be set.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7304.09 Hook up units with the prescribed lifting equipment (such as hooks, shackles, chokers, slings, bolts and swivel plates) under strict direction, paying particular attention to designated hook-up points and procedures, and in compliance with The Occupational Health and Safety Act.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7304.10 Guide units into position with guy lines and hooks, signal hoisting operator to lift and locate precast units into final position (transferred from existing benchmarks) and to bring the unit to the proper elevation and position.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7304.11 Stabilize the unit and install temporary connections (come-a-long, pony clamps, turnbuckles, tilt-up-jacks, guy lines and pre-fabricated devices), ensuring that they remain installed until the unit is in its proper position and the final connection is made.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7304.12 Check vertical and horizontal alignment of precast units and make proper adjustments using measuring devices, such as levels, rulers, squares and plumb bobs, observing specified tolerances and correcting deviations.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7304.13 Install designated hardware and make permanent connections as per detail drawing, using wrenches, hydraulic jacks, and welding equipment.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____
	Employer's Name	Employer's Signature
	_____	_____

7305.0 INSTALL BOLTED PRECAST CONNECTIONS

GENERAL PERFORMANCE OBJECTIVE

Install precast concrete connections by checking bolts and the depth of threaded inserts, cleaning or replacing inserts, checking clip-angle slots and holes; tightening bolted connections; and installing expansion bolts.

TERMINAL PERFORMANCE OBJECTIVES

Supervisor's Name (print)

Apprentice's Name (print)

SKILLS

7305.01 Check and confirm that all bolts are of proper length, diameter and grade for the connections as indicated on approved erection drawings.

Date Completed

Supervisor's Signature

Apprentice's Signature

7305.02 Check the depth of threaded inserts in the unit to ensure minimum acceptable engagement for the bolt threads.

Date Completed

Supervisor's Signature

Apprentice's Signature

7305.03 Clean or replace inserts so that they are free of dirt, debris, ice or damaged threads.

Date Completed

Supervisor's Signature

Apprentice's Signature

7305.04 Check clip-angle slots and holes to make sure they agree with design drawings, for connections such as slip connections or rigid connections.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7305.05 Tighten bolted connections to the specified tolerance and torque, using appropriate torque wrench.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7305.06 Check bolt tightness following erection of a unit with slotted connections and, if required; install special steel washers to ensure that the specified tension has been developed in the bolt.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7305.07 Install expansion bolts using prescribed installation procedures and quality control specifications set out by the engineer.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

Employer's Name	Employer's Signature
_____	_____

7306.0 MAKE WELDED PRECAST CONNECTIONS

GENERAL PERFORMANCE OBJECTIVE

Make welded precast connections by confirming availability of fire extinguisher, protecting welders, removing foreign materials from the weld area, preheating in cold, performing welding and cutting, preventing concrete cracking and metal distortion, and installing protective covers.

TERMINAL PERFORMANCE OBJECTIVES

Supervisor's Name (print)

Apprentice's Name (print)

SKILLS

7306.01 Confirm availability of a fire extinguisher of required size and type and in operating condition, within reach of all burning and welding operations, as prescribed by The Occupational Health and Safety Act and the Construction Safety Act.

Date Completed

Supervisor's Signature

Apprentice's Signature

7306.02 Protect welders working close to the perimeter and around floor openings against falls, by providing perimeter guards, nets, or safety harnesses, as required by The Ontario Health and Safety Act and the Construction Safety Act.

Date Completed

Supervisor's Signature

Apprentice's Signature

PRECAST CONCRETE ERECTOR

7306.03 Remove loose or thick scale, slag, rust, moisture, grease, or other foreign material from surfaces to be welded, to ensure good weld penetration.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7306.04 Apply various preheating techniques, using a torch, when welding in cold temperatures to prevent spalling of the concrete adjacent to weld plates.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7306.05 Perform welding and cutting operations according to erection drawings, ensuring that the full welds are completed at all connections of the unit before temporary supports are released.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7306.06 Prevent cracking of concrete and metal distortion by using low heat and/or small-size welding rods, controlling the amount of weld metal deposited, or making long welds in intermittent stages to allow heat to dissipate.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

7306.07 Install non-combustible protective covers to protect materials adjacent to the welding site (such as glass, window frames, etc.) from weld spatter and heat or smoke damage.

Date Completed	Supervisor's Signature	Apprentice's Signature
_____	_____	_____

Employer's Name	Employer's Signature
_____	_____

7307.0 INSTALL DOWELLED PRECAST CONNECTIONS

GENERAL PERFORMANCE OBJECTIVE

Install dowelled precast connections by selecting the required dowel, removing foreign materials, installing setting shims and grout holes, and mixing grout.

TERMINAL PERFORMANCE OBJECTIVES

Supervisor's Name (print)

Apprentice's Name (print)

SKILLS

7307.01 Select the required size of dowel for the connection by reference to erection drawings.

Date Completed

Supervisor's Signature

Apprentice's Signature

7307.02 Remove all foreign material from the dowel pocket to achieve a good bond between the grout and the concrete.

Date Completed

Supervisor's Signature

Apprentice's Signature

7307.03 Install setting shims and grout holes before setting the precast units, unless access allows for post grouting.

Date Completed

Supervisor's Signature

Apprentice's Signature

7307.04 Mix grout as per manufacturer's and designer's specifications, making sure that its consistency will allow for the displacement of some grout when the unit is placed.

Date Completed

Supervisor's Signature

Apprentice's Signature

Employer's Name

Employer's Signature

7308.0 APPLY GROUT

GENERAL PERFORMANCE OBJECTIVE

Apply grout by cleaning the surfaces to be grouted, preparing concrete surfaces, installing formwork around joints, and grouting.

TERMINAL PERFORMANCE OBJECTIVES

Supervisor's Name (print)

Apprentice's Name (print)

SKILLS

7308.01 Clean all surfaces to be grouted of ice, snow, dirt, and other foreign matter, using water, brushes, scrapers and other prescribed tools and materials.

Date Completed

Supervisor's Signature

Apprentice's Signature

7308.02 Prepare concrete surfaces by applying parging, priming and bonding agents in accordance with manufacturers' specifications and The Occupational Health and Safety Act.

Date Completed

Supervisor's Signature

Apprentice's Signature

7308.03 Install formwork around joints when using flowable grout to avoid leakage and to resist grouting pressure.

Date Completed

Supervisor's Signature

Apprentice's Signature

7308.04 Apply grout with appropriate hand and power tools, using access, alignment, levelling, plumbing and forming tools and equipment selected for the specific job, and proceeding in accordance with The Occupational Health and Safety Act, and the Construction Safety Act.

Date Completed

Supervisor's Signature

Apprentice's Signature

Employer's Name

Employer's Signature

7309.0 PROTECT PRECAST UNITS, HARDWARE AND JOINTS

GENERAL PERFORMANCE OBJECTIVE

Protect precast concrete units and related hardware and joint details by sequencing erection work, inspecting existing work, installing protective covers, and applying protective coatings.

TERMINAL PERFORMANCE OBJECTIVES

Supervisor's Name (print)

Apprentice's Name (print)

SKILLS

7309.01 Sequence erection work according to the schedule, and in a manner that will avoid damage to any adjacent materials.

Date Completed

Supervisor's Signature

Apprentice's Signature

7309.02 Inspect existing work prior to erection and report any defects to the immediate supervisor.

Date Completed

Supervisor's Signature

Apprentice's Signature

7309.03 Install protective covers such as asbestos blankets, tarpaulins and plywood to avoid damaging existing precast, glazing, flooring, fixtures, brick, etc. in accordance with manufacturers' instructions.

Date Completed

Supervisor's Signature

Apprentice's Signature

7309.04 Apply protective coatings, such as rust inhibitive primer on welds and exposed steel components as per manufacturers' instructions and The Occupational Health and Safety Act.

Date Completed

Supervisor's Signature

Apprentice's Signature

Employer's Name

Employer's Signature

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	
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	
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	

You will be required to disclose this signed form to the Ministry of Advanced Education and Skills Development 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.

