

# COMPETENCY ASSESSMENT GUIDE FOR THE ENGINEER'S PERMIT ACQUISITION PROCESS

DOCUMENT FOR TEMPORARY RESTRICTED PERMIT HOLDERS  
AND THEIR SUPERVISORS





## Summary

<b>1. INTRODUCTION</b> .....	2
<b>2. DEFINITIONS RELATED TO COMPETENCIES</b> .....	2
2.1. Competency.....	2
2.2. Key competencies.....	2
2.3. Sub-competencies .....	3
2.4. Skill level .....	3
Table 1 .....	4
2.5. Indicators.....	4
<b>3. PRACTICAL COMPONENT</b> .....	5
<b>4. DIFFERENT TYPES OF PRACTICAL TRAINING</b> .....	5
<b>5. SUPERVISION OF PRACTICAL TRAINING</b> .....	7
5.1. Conditions for being a supervisor.....	7
5.2. The supervisor’s role during the practical training period .....	8
5.3. Assessments by supervisors .....	8
<b>6. RESPONSABILITIES OF HOLDERS OF A TRP</b> .....	8
6.1. Reporting the start of a work experience .....	9
6.2. Providing information about competencies.....	11
6.3. Self-assessing.....	13
6.4. Reporting the end of a work experience.....	13
<b>7. SUPERVISOR CONSENT AND ASSESSMENTS</b> .....	16
<b>8. THE OIQ’S ASSESSMENT</b> .....	16
<b>9. OTHER EXPERIENCES CONSIDERED</b> .....	16
9.1. Internship .....	16
9.2. Previous work experiences.....	17
9.3. Masters in engineering (with research profile) and doctorates in engineering.....	19
9.4. Additional training and certifications.....	19



## 1. INTRODUCTION

In Québec, the use of the engineer title is reserved and regulated. Only holders of an engineer's permit who are entered on the roll of the Ordre des ingénieurs du Québec (OIQ) may practice engineering in Québec.

To obtain their engineer permit, holders of a temporary restrictive engineer's permit must follow and successfully complete a process composed of three components:

- **Theoretical component:** study the guide and pass the professional examination
- **Practical component:** assess acquired competencies, particularly in the context of engineering work
- **Language component:** meet the requirements of the Charter of the French language.

In the practical component, a competency-based assessment system is used to determine whether holders of temporary restrictive engineer permit work engineering experiences have enabled them to make progress and attain the required professional skill level.

This guide addresses only the practical component, and particularly the assessment of competencies acquired through engineering work experiences, internships, and additional training activities, as applicable. Its goal is to help holders of a temporary restrictive permit fill out the assessment request on the OIQ's portal, and guide supervisors in verifying and assessing their competencies.

## 2. DEFINITIONS RELATED TO COMPETENCIES

### 2.1. Competency

The term « competency » means an aptitude or ability to accomplish tasks and assume professional roles in keeping with standards that are expected and recognized by employers and the community in general.

### 2.2. Key competencies

The competency reference guide for the process of obtaining the engineer's permit outlines **six key competencies**. These essential competencies enable engineers in all disciplines to adopt an exemplary professional practice and ensure the public's safety.



These six key competencies are:

- 1) Have the required technical competencies
- 2) Communicate effectively
- 3) Manage projects
- 4) Work on a team
- 5) Act professionally
- 6) Manage your professional development

### 2.3. Sub-competencies

Each key competency has a detailed list of necessary sub-competencies. There are 28 sub-competencies in total.

The sub-competencies determine what holders of a temporary restrictive permit must demonstrate to attain the required level of expertise in knowledge and actions.

They must attain the required skill level for each sub-competency to satisfy the OIQ's requirements.

### 2.4. Skill level

The competency assessment scale helps to determine if the required skill level is attained for all sub-competencies of the six key competencies.

The scales include six skill levels from 0 to 5. Depending on the key competency, the minimum level required for each sub-competency is 2 or 3.

Table 1 below defines each level for all competencies.



Table 1

COMPETENCIES	Minimum level required
1) <b>Technical Competency</b>	3
2) <b>Communication</b>	3
3) <b>Project Management</b>	2
4) <b>Working in a Team</b>	3
5) <b>Professional Accountability</b>	3

COMPETENCY	Minimum level required
6) <b>Professional Development</b>	2

SCALE	
<b>Level 0</b>	Little or no exposure to the competency
<b>Level 1</b>	Competency knowledge, but not mastery
<b>Level 2</b>	Possesses knowledge and understanding. Uses standard engineering methods and techniques to resolve problems
<b>Level 3</b>	Carries out projects from moderate to complex. Typically seen to be prepared to assume professional engineering responsibilities.
<b>Level 4</b>	Responsible for various projects demanding good general knowledge in engineering.
<b>Level 5</b>	Uses engineering knowledge of an experienced professional and capable of coordinating complex projects.

SCALE	
<b>Level 0</b>	No professional development completed and/or planned; no gap analysis
<b>Level 1</b>	Minimal amount of professional development completed and/or planned; professional development completed may not address professional competence; an incomplete gap analysis
<b>Level 2</b>	A marginal amount of professional development completed and planned; a marginal/insufficient gap analysis
<b>Level 3</b>	Adequate amount of professional development completed and/or planned; an adequate gap analysis
<b>Level 4</b>	A good amount of professional development completed and/or planned; a strong gap analysis
<b>Level 5</b>	Provides and demonstrates leadership in continuing professional development activities; a superior gap analysis

## 2.5. Indicators

Indicators are examples of tasks or skills that illustrate the acquisition of a competency.

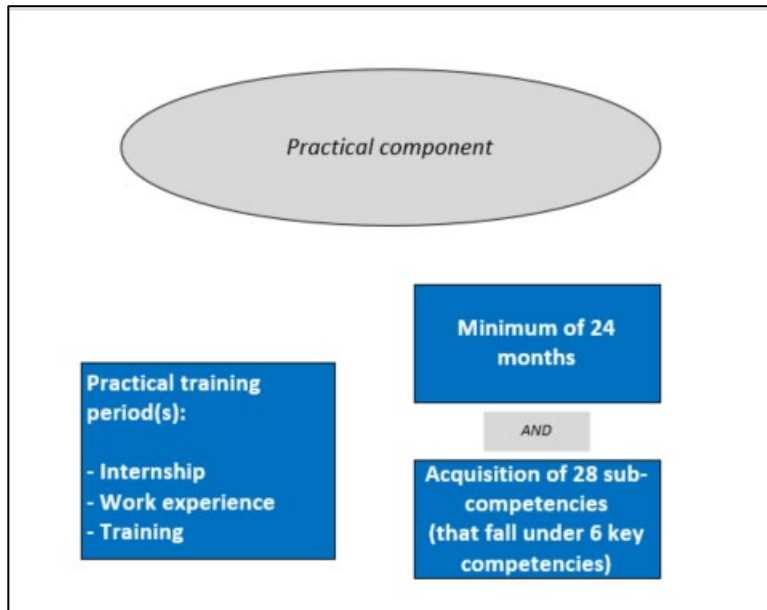
[Table 2 \(Appendix 1\)](#) provides a list of indicators for each sub-competency that holders of a temporary restrictive permit can use as a guide to show that they have acquired the competencies they need to practice the engineering profession.

The indicators proposed in the table are generally common to all engineering disciplines. However, the list of indicators is not exhaustive.



### 3. PRACTICAL COMPONENT

The practical component consists of one or more periods of practical training that add up to a minimum of 24 months in total. This component aims to help holders of a TRP apply the knowledge they have acquired in their training and develop the competencies they need to practice engineering in Québec.



### 4. DIFFERENT TYPES OF PRACTICAL TRAINING

These are the different types of practical training allowing to acquire the competencies and complete the 24 months of engineering experience:

- **Internships:**
  - These engineering internships may be completed after 150 ECTS (European Credit Transfer System) have been earned, but before the OIQ-qualifying degree has been obtained. Engineering internships that are not supervised by the educational institution (example: summer jobs) are also considered internships.
  - A maximum of 8 months may be recognized. However, experience acquired during internships cannot be used to demonstrate the acquisition of competencies.
  - Internship supervisors are not required to meet the conditions specified in section [5.1](#), unlike supervisors of other types of practical training.



For more information, please refer to section [9.1](#).

- **Work experience:**
  - This refers to any engineering work experience that began after earning the OIQ-qualifying degree.
    - For more information about work experience already in progress, please refer to section [6.1](#).
    - For more information about previous work experiences, please refer to section [9.2](#).
  - Work experiences may be recognized in the calculation of months of experience and as demonstrating the acquisition of competencies.
- **Master's degree and doctorate in engineering:**
  - A master's degree in engineering (research or equivalent profile) or a doctorate in engineering may be recognized in the calculation of months experience and as demonstrate the acquisition of competencies. Months of experience will be calculated based on the actual time spent researching and drafting a dissertation or thesis.
  - A master's degree passed in France is not eligible.
  - For more information, please refer to section [9.3](#).
- **Additional training of certification:**
  - These are activities that qualify candidates to receive an engineering or related certification once they have been completed.
  - Additional training activities and certifications may be recognized as demonstrating the acquisition of competencies. However, they are not recognized in the calculation of months of experience.
  - A master's degree passed in France is not eligible.
  - For more information, please refer to section [9.4](#).



EXPERIENCE TYPE	DURATION	COMPETENCIES
Internships	YES (8 months maximum)	NO
Work experience	YES	YES
Master's degree in engineering (research or equivalent profile)	YES (for the duration of the research)	YES
Doctorate in engineering	YES (for the duration of the research)	YES
Additional training or certification	NO	YES

## 5. SUPERVISION OF PRACTICAL TRAINING

During their practical training, holders of a TRP work under the supervision of an engineer in a workplace that allows them to develop the competencies they need to practice engineering. This gives holders of a TRP an opportunity to perform engineering activities according to generally accepted engineering standards and practices and take on increasing responsibilities in engineering projects.

Their supervisors are engineers. Generally, supervisors are the immediate managers of TRP holders. However, if this is not possible, supervisors may also be colleagues, clients, suppliers, or other engineers with direct personal knowledge of the work done by the holder of a TRP.

### 5.1. Conditions for being a supervisor

To be a supervisor, engineers must meet certain conditions:

- Supervisors must **have an engineer's permit that entitles them to practice engineering without restriction**. In other words, engineers must be entered on the OIQ's roll or, if they do not practice in Québec, on the roll of any other regulatory body that supervises the engineering profession in another Canadian province or country. When engineers practice in a country where there is no regulatory body regulating the engineering profession, their engineer title must be recognized in the country in question. However, for all activities reserved for engineers and performed in Québec, supervisors must either be full-fledged engineers who are members of the Ordre des ingénieurs du Québec or ensure that holders of a TRP act under the technical supervision of an engineer who is an OIQ member.
- Supervisors must have practiced engineering for **at least three** of the last five years in a function related to the objectives of the TRP holder's practical training.
- Supervisors must not have been **fined**, had their **engineer's permit revoked**, been **struck off the roll** or **suspended**, or had their right to practice **restricted**. Furthermore, they must not have had to be required to complete a course, take refresher training, or fulfill any other obligation in the last five years by the regulatory body that oversees the profession of which they are members.





## 5.2. The supervisor's role during the practical training period

Supervisors help the TRP holder in developing competencies during their practical training period. For that purpose, supervisors:

1. Set the objectives of the practical training period with him.
2. Make sure that the workplace allows him to reach the objectives set for the period.
3. Assist him with workplace integration.
4. Make themselves available to answer his questions and provide him with advice.
5. Always behave professionally in accordance with the standards and values of the profession.
6. Regularly evaluate his progress made toward the objectives of the practical training period and offer him the necessary feedback to help him advance.
7. Make sure that he works under the technical supervision of an engineer whenever he engages in an activity reserved for engineers. When a holder of a TRP performs reserved activities under the technical supervision of an engineer who is not his supervisor, his supervisor must consult with the engineer who provided the technical supervision.
8. Assess the holder of a TRP.

## 5.3. Assessments by supervisors

Designated supervisors will receive an e-mail from the OIQ inviting them to start the assessment process. They will perform their assessments in a specific portal (separate from the OIQ member portal). All login information will be included in the e-mail.

The steps in the assessment process differ depending on the type of experience submitted by the holder of a TRP. Table 3 ([Appendix 2](#)) shows the steps in the assessment process that supervisors must complete, depending on the type of experience submitted.

## 6. RESPONSABILITIES OF HOLDERS OF A TRP

Holders of a TRP must demonstrate that they meet the OIQ's competency requirements by reporting relevant situations from their practical training (internships, work experiences, additional training activities). To do so, they must demonstrate that they have accumulated a minimum of 24 months of engineering work experience and that they have attained the skill level required for each of the sub-competencies.



## 6.1. Reporting the start of a work experience

When the holder of a TRP begins an engineering work experience, he must report this:

- In his member portal by providing information related to his obligations (professional liability insurance, for example)
- In his practical component by providing information related to his supervisor and work experience. To access the practical component, he must connect to his member portal and click on the « On the way to the engineer's title » button.

### 6.1.1 Supervisor information

TRP holders must choose an engineer to supervise them at work and act as their supervisor.

- Step 1:
  - Add a supervisor
  - Click on « Add a supervisor »
  - Fill out the information: Member number, first and last name, e-mail address, phone number, position or office title, name of their supervisor's employer and their professional connection
  - Click on « Save ».



- Step 2: Intervention of the OIQ
  - As soon as a supervisor is designated and the beginning of the work experience declared, the OIQ makes sure that the person named meets the conditions for acting as a supervisor. (To find out the condition for being a supervisor, refer to section [5.1](#)). The period of practical training and the competencies acquired during that period may not count if the chosen supervisor does not meet the conditions.
  
- Step 3: Intervention of the supervisor (Validation of his commitment):
  - As soon as the OIQ has confirmed that the named person meets the conditions for acting as a supervisor, that person receives an e-mail from the OIQ inviting her to agree to act as a supervisor.
  - These steps are carried out in the online platform. The supervisor will receive an e-mail with his login information.
  - To ensure that work experience is recognized, it is important for supervisors to log in the platform as soon as possible so that they can confirm to the OIQ that they agree to act as supervisors.

Please note that steps 2 and 3 start once the work experience has been declared.

### 6.1.2 Work experience information

After adding the supervisor, the holder of a TRP must add his experience by following these steps:

#### Step 1: Declaration of the experience

- Click on the « Add experience/training » button.
- Select the type of experience « Work experience ».
- Click on the « Create and continue » button.
- Add the information like name of employer, country, city, title of the position or function, select the supervisor previously registered and the start date of the experience.
- If the holder of a TRP works part-time, he must specify it. « Part-time » means working less than 35 hours a week. The work period is calculated on a prorated basis according to the number of part-time hours.
- Likewise, a work interruption of more than 30 consecutive days must be specified.
- Briefly describe the context of the work experience as call as the responsibilities at the company.



Step 2: Intervention of the OIQ

- As soon as the beginning of a work experience is declared, the OIQ makes sure the work experience described falls within the field of engineering and is relevant to the competencies that must be acquired.

6.2 Providing information about competencies

After reporting the start of a work experience, and at **any time during his experience**, the holder of a TRP can go to the « Assessment » section to provide details on the sub-competencies he has acquired. To do so, he may follow the steps below:

- Click on « Assessment »
- Click on the work experience concerned
- Click on the « Evaluate » button across from the sub-competency he believes he has acquired
- Provide the information requested
- Click on the « Save » button.

1. Have the required technical competencies	Required Level.	Self-evaluation	Level Validated OIQ
1.1 Regulations, codes and standards	3	Evaluate	N/A
1.2 Project and design constraints	3	Evaluate	N/A
1.3 Risk identification and mitigation	3	Evaluate	N/A
1.4 Application of theory	3	Evaluate	N/A
1.5 Solution techniques	3	Evaluate	N/A
1.6 Safety awareness	3	Evaluate	N/A



### 6.2.1 Drafting tips

For each sub-competency, the holder of the TRP must choose the situations in his work experiences that best illustrate his use of the sub-competency. Table 2 ([Appendix 1](#)) has a list of indicators that they can use as guidance. We recommend closely reviewing this list.

The holder of a TRP must be specific when describing the situation so that he demonstrates how it enabled him to acquire the sub-competency.

Each situation chosen must cover the details below:

- **Context:** This means giving a brief overview of a situation or specific problem that he had to solve.
- **Actions:** This section is the most important part of describing the experience. He must describe the actions and steps he took in response to the situation, as well as the technical judgments he made or the solutions he found.

It is important to give specific examples that best show his acquisition of the sub-competency. The examples must be specific enough to give the OIQ a clear picture of the nature and complexity of the work he did, and to understand how his work is related to the sub-competency concerned.

For instance, it is unacceptable to write:

*« I am a project manager and I have to be able to communicate clearly to do my job ».*

The holder of a TRP must provide specific examples of his communication skills. For example:

*« I preside over meetings with clients, I manage subcontractors, I report to senior management. »*

Using « I » and making a list is recommended. In addition, the holder of a TRP is encouraged to exercise good judgment when determining which details are important.

- **Results:** The holder of a TRP must explain the impacts of his action, the solutions he proposed and the judgments he made.
- **Self-assessed skill level:** This section is where the holder of a TRP assesses himself. He must specify on the competency assessment scale what he believes he has attained.
- **Canadian environment:** It is important to specify whether he acquired each sub-competency in a Canadian environment. To be considered relevant, the following sub-competencies must be demonstrated by an engineering work experience acquired in a Canadian environment:



- Regulations, codes and standards (1.1)
- Safety awareness (1.6)
- Peer review and quality control (1.8)
- Sustainable, social, economic, and environmental development (1.10)
- Verbal communication (2.1)
- Written communication (2.2)
- Reading and comprehension (2.3)
- Code of ethics (5.1)

**Note:** It is important to keep in mind that one situation can be used to demonstrate several sub-competencies. In such a case, the « Context » section will be the same, but the « Actions » and « Results » sections will need to be different.

### 6.3 Self-assessing

Once the holder of a TRP has provided all the information about his work experience, he must determine the skill level he has attained for each sub-competency, according to the assessment scale.

The required level is 3 or 2, according to the sub-competency. To find out more about the levels, please refer to the table presenting the competency assessment scale ([Table 1](#)).

For sub-competencies that are not covered by his work experience, the holder of a TRP must check the « N/A » button.

### 6.4 Reporting the end of a work experience

The holder of a TRP must report the end of a work experience as soon as he:


- Quits a job
- Or changes supervisors
- Or has completed a minimum of 24 months and feel that he has attained the skill level required for a sub-competency.

To do so, he must enter an end date for his job and then submit his experience by following the steps below:

- Click on the « Experiences acquired » button
- Click on « Edit » to complete the form, click on « Next » and then « Save »
- Click on the « Assessment » button
- Complete the self-assessment if it has not been already done
- Click on the « Submit experience » button.



Once the experience has been submitted, the supervisor and the OIQ are notified.



TRP | English | [Redacted]

## ENGINEERING COMPETENCIES ASSESSMENT

BACK TO MY ACCOUNT

SUPERVISORS/REFREES / **EXPERIENCES ACQUIRED** / ASSESSMENT / SUMMARY / PAYMENT

The list of experiences submitted under the previous regulation can be found in the « Experiences declared under the previous regulation » section at the bottom of this page.

Please report your experiences by following these steps:

- Click on the "Add Experience/Training" button
- Select the appropriate type of experience

**TYPES OF EXPERIENCE :**

**Internship :**

- This is an engineering internship completed after 150 ECTS (European Credit Transfer System) credits have been completed, but before the engineering degree is obtained. A summer job in engineering can also be considered an internship, even if it is not supervised by the university.

Important:

- Experience acquired during an internship can be counted toward accumulated months of experience, but cannot be used to demonstrate the acquisition of competencies.
- Up to 8 months may be recognized.

**Work Experience :**

- This is any engineering work experience that began after your engineering degree was obtained.

Important:

- Engineering work experience can be counted toward accumulated months of experience and used to demonstrate the acquisition of competencies.



[Add experience/training](#)

Work experiences awaiting supervisor validation by OIQ

Experience Type	Employer	University name	Job Title ↑	Supervisor	Start Date (Month)	Start Date (Year)	End Date (Month)	End Date (Year)	Submission status
Master's or doctorate degree in engineering									
Work experience					February	2021			<b>2</b>
Work experience									

TRP | English | [Profile]

## ENGINEERING COMPETENCIES ASSESSMENT BACK TO MY ACCOUNT

SUPERVISORS/REFREES / EXPERIENCES ACQUIRED / **ASSESSMENT** / SUMMARY / PAYMENT **3**

Please provide a work experience example to address each key competency.

### Work experience(s) to assess

TEST / FÉVRIER 2021 - AOÛT 2021 **5**

[Submit experience](#)

1. Have the required technical competencies ⓘ	Required Level.	Self-evaluation	Level Validated OIQ
1.1 Regulations, codes and standards 🇨🇦	3	<b>4</b> Evaluate N/A	
1.2 Project and design constraints	3	Evaluate N/A	
1.3 Risk identification and mitigation	3	Evaluate N/A	
1.4 Application of theory	3	Evaluate N/A	
1.5 Solution techniques	3	Evaluate N/A	
1.6 Safety awareness 🇨🇦	3	Evaluate N/A	
1.7 Systems and their components	3	Evaluate N/A	

Note: If the holder of a TRP quits his job, he must report it in his member portal as well.





## 7. SUPERVISOR CONSENT AND ASSESSMENTS

Supervisors are notified by e-mail when they are requested to assess a practical training period. The e-mail has a link to the online platform where they must log in.

First, supervisors are asked if they agree to assess the work experience of TRP holders. If they agree, the supervisors are invited to verify the information submitted by the TRP and make any comment they feel useful. Supervisors are encouraged to make comments because they provide invaluable information about the competencies of the TRP holder. The comments made by supervisors are confidential; TRP holders do not see these comments.

Supervisors must also select a skill level for each sub-competency according to the competency assessment scale ([Table 1](#)). Whenever supervisors assess a competency lower than their holders TRP do, the supervisors will have to add a comment to explain this difference. The level selected by supervisors and their comments are confidential; TRP holders do not see these comments.

## 8. THE OIQ'S ASSESSMENT

The OIQ assesses the competencies in the work experiences submitted as it receives them. The holder of a TRP can track developments in their file through their portal.

He is notified by e-mail that the information about his assessment is available in his portal.

Finally, when the experiences submitted are validated by the OIQ and reach 24 months and 28 sub-competencies, he receives an e-mail asking him to pay the fee to assess his experiences. Once he has made the payment, the OIQ will provide its decision on his practical component assessment.

## 9. OTHER EXPERIENCES CONSIDERED

### 9.1. Internship

It is an engineering internship that may be completed after 150 ECTS (European Credit Transfer System) have been earned but before the engineering degree is completed. Engineering internships that are not supervised by an educational institution are also considered internships (summer jobs for example).

An internship may be recognized in the calculation of months of experience. A maximum of 8 months may be granted. However, the experience acquired during an internship may not be used to demonstrate the acquisition of competencies.



To report an internship, the holder of a TRP must follow the steps below:

- Add a supervisor.
- Click on the « Add experience/training » button.
- Select « Internship » in the dropdown menu.
- Add the information like name of employer, country, city, title of the position or function, select the supervisor previously registered and the start date and end date of the internship.
- If the holder of a TRP works part-time, he must specify it. « Part-time » means working less than 35 hours a week. The word period is calculated on a prorated basis according to the number of part-time hours.
- Likewise, a work interruption of more than 30 consecutive days must be specified.
- Briefly describe the context of the work experience as call as the responsibilities at the company.
- Click on « Assessment » and « Submit internship ».

**ENGINEERING COMPETENCIES ASSESSMENT** [BACK TO MY ACCOUNT](#)

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SUPERVISORS/REFREES / EXPERIENCES ACQUIRED / **ASSESSMENT** / SUMMARY / PAYMENT

Please provide a work experience example to address each key competency.

**Internship**

TEST / JANVIER 2003 - AVRIL 2003 ▲

Submit internship

**Internship**

TEST / JANVIER 2003 - AVRIL 2003 ✔ ▼

## 9.2. Previous work experiences

« Previous work experiences » means any work that has begun prior to registration on the roll of the OIQ as a holder of TRP and has been completed.



Previous work experience concerned:

- Person who has practiced outside Québec.
- Person who has finished a work experience in Québec before they registered as holder of a TRP. (For all work experiences in progress when they register as holders of TRP, they will have to report these experiences as if they are just beginning them; please refer to section [6.1](#))

#### 9.2.1. Special features

The process of submitting previous work experiences is similar to the process of reporting the start of a work experience. The holder of a TRP is asked to report all his engineering jobs related to the sub-competencies he must demonstrate. (For more information, please refer to [6.1](#))

However, previous work experiences have three special features:

- **End date of the work experience:** Given that the work experience is finished, the holder of a TRP must specify the date on which the work experience ended.
- **No agreement required from supervisors:** Given that the work experience is finished; supervisors will not have to agree to act as supervisors. However, just like for work experiences that have started but not finished, supervisors will have to agree to assess an experience once the holder of a TRP has submitted it.
- **Validation of supervisor eligibility:** Given that the work experience is finished, supervisor eligibility is validated after the fact. As a result, if a supervisor is found to be ineligible, the holder of a TRP will have to find another supervisor. Otherwise, the experience will not count.
- **Validation of work experience relevance:** The OIQ makes sure that the work experience relates to the sub-competencies that must be demonstrated. Given that the work experience is finished, the relevance of the work experience is validated after the fact. As a result, if the experience is not relevant, it will not count.

#### 9.2.2. Preparation tips

To be effectively prepared, we recommend reviewing the table of competencies and indicators ([Table 2](#)) as well as the assessment scale ([Table 1](#)), as well as taking the following preliminary steps:

- Make sure that the resume is updated, lists jobs, and describes projects and achievements completed during the professional experience period. This will be extremely helpful in selecting relevant projects that demonstrate the acquisition of the sub-competencies.
- We recommend considering what has been learned and how this knowledge has impacted the practice period to help demonstrate the acquisition of each sub-competencies.



### 9.3. Master's degrees in engineering (with research profile) and doctorates in engineering

Research periods may be recognized in the calculation of months of experience and in demonstrating the acquisition of competencies. (Master's degree obtained in France are not eligible).

To report them, holders of a TRP must follow these steps:

- Add the supervisor.
- Click on the « Add experience/training » button.
- Select the type of experience « Master's or doctorate degree in engineering » in the dropdown menu.
- Add the information like name of the university, country, city, title of the position or function (if applicable), select the supervisor previously registered and the « Start date » (and end date if the research is finished) of the research.
- If the research is done part time, the holder of a TRP must specify it. « Part-time » means working less than 35 hours per week. The word period is calculated on a prorated basis according to the number of part-time hours.
- Likewise, a work interruption of more than 30 consecutive days must be specified.
- Briefly describe the context of the research as call as the responsibilities.

### 9.4. Additional training and certifications

These are training activities that qualify holders of a TRP to receive an engineering or related certification once they are completed, but they must take place over a period of at least one week (35 hours of training) or be equal to one university credit (15 hours of courses and 30 hours of assignments).

Additional training and certification activities may be recognized as demonstrating the acquisition of competencies. However, they are not recognized in the calculation of months of experience.

To report additional training or a certification, the holder of a TRP must follow the steps below:

- Click on the « Add experience/training » button.
- Select the type of experience « Other training » in the dropdown menu.
- Add information like the title of the training activity or certification, the date and when it was taken and the name of the training organization.
- Attach a copy of the certificate (required)
- Click on « Assessment », do the self-assessment, and click on the « Submit Education ».

Attachments: The holder of a TRP must attach any document that will be useful in reviewing his file and any certificate of success, document confirming the number of training hours, etc.



Appendix 1: Table 2 - Indicators

**It is important to note that the sub-competencies shown in blue must be demonstrated by holders of a TRP in an engineering experience that they acquired in a Canadian environment.**

<b>COMPETENCIES (6)</b>	<b>Sub-competencies (28)</b>	<b>INDICATORS</b> (guidance on example content that will demonstrate the competencies)
<b>1. Have the required technical competencies</b>	<b>1.1 Regulations, codes, and standards</b>	<ol style="list-style-type: none"> <li>1. Identify and comply with legal and regulatory requirements for project activities.</li> <li>2. Incorporate knowledge of codes and regulations into the design.</li> <li>3. Prepare reports assessing project compliance with codes, standards, and regulations.</li> <li>4. Recognize the need to design for code compliance while considering feasibility.</li> <li>5. Be aware of and/or apply any specific sustainability clauses that have been added to practice guidelines that apply to their area.</li> </ol>
	Demonstrate knowledge of regulations, codes and standards, including applicable Québec and Canadian engineering regulations, codes, standards and practices.	
	<b>1.2 Project and design constraints</b>	<ol style="list-style-type: none"> <li>1. Demonstrate knowledge of materials, operations, project, and design constraints, e.g., cost, design, material, labour, schedule, budget, production.</li> <li>2. Demonstrate an understanding of and coordination with other engineering and professional disciplines.</li> <li>3. Understand the role and regulations of the various professions whose practices overlap or interact with those of engineering and understand the regulations that apply to persons practicing these professions.</li> </ol>
	Demonstrate knowledge of materials, or operations as appropriate, project and design constraints, and the optimal design for the intended purpose or use, while taking interdisciplinary impacts into account.	
<b>1.3 Risk identification and mitigation</b>	<ol style="list-style-type: none"> <li>1. Demonstrate familiarity with system protection and/or damage/hazard mitigation objectives, underlying principles, practices, procedures, and functions.</li> <li>2. Identify risk areas including causes of risks and their impacts.</li> <li>3. Develop risk management/mitigation plans (elimination, mitigation, prevention).</li> <li>4. Demonstrate an understanding of the difference between technical risk and public safety issues.</li> </ol>	
Analyze the technical risks and offer solutions to mitigate them.		



	<p><b>1.4 Application of theory</b></p>	<ol style="list-style-type: none"> <li>1. Prepare technical specifications.</li> <li>2. Demonstrate use of theory and calculations to arrive at solutions.</li> <li>3. Demonstrate the development and selection of the preferred/optimal design solution.</li> </ol>
	<p>Apply engineering knowledge to design solutions.</p>	
	<p><b>1.5 Solution techniques</b></p>	<ol style="list-style-type: none"> <li>1. Demonstrate an understanding of the engineering principles used in the application of computer design programs and show/describe how the results were verified as correct.</li> <li>2. Participate in an independent review and verification of solution techniques or analysis methods.</li> <li>3. Participate in the validation of the design/solution by considering the parameters, criteria, methods of analysis, trials, simulations, etc.</li> </ol>
	<p>Be able to understand solution techniques and independently verify the results.</p>	
	<p><b>1.6 Safety awareness</b></p>	<ol style="list-style-type: none"> <li>1. Demonstrate specific knowledge of safety regulations.</li> <li>2. Identify, incorporate, and/or participate in the review of safety considerations, safety procedures and safety equipment as they apply to system operations and/or maintenance programs.</li> <li>3. Incorporate explicit human and public safety considerations into the design and all other relevant activities.</li> <li>4. Understand and consider safety risks associated with processes.</li> <li>5. Identify relevant protection equipment and process modifications to mitigate safety risks.</li> </ol>
	<p>Demonstrate knowledge and awareness of Canadian regulations, codes and standards pertaining to safety. Demonstrate on-site safety awareness and knowledge of applicable safety authorization/certification requirements and be aware of safety risks inherent in the design.</p>	
	<p><b>1.7 Systems and their components</b></p>	<ol style="list-style-type: none"> <li>1. Demonstrate an understanding of each element in a process.</li> <li>2. Demonstrate an understanding of the interactions and constraints in the behaviour of the overall system.</li> <li>3. Manage processes within the overall system (monitor and, where needed, modify processes to achieve optimum outcomes).</li> </ol>
	<p>Understand systems and their components.</p>	
	<p><b>1.8 Peer review and quality control</b></p>	<ol style="list-style-type: none"> <li>1. Conduct checks, including field checks, to verify the validity of the design.</li> <li>2. Follow quality management principles in practice.</li> <li>3. Verify the conformity of the work with plans and specifications.</li> <li>4. Prepare quality control plans, including frequency and test parameters, for specific processes or products.</li> </ol>
	<p>Demonstrate an understanding of the role of peer review and quality management that is essential to engineering practice in Canada. Understand the concept of quality control during design and construction, including independent design reviews and verifications, field checks and project reviews.</p>	



		<p>5. Evaluate test results, determine adequacy, and develop recommended actions.</p> <p>6. Participate in peer reviews.</p> <p>7. Demonstrate that completed projects, systems or sub-systems meet project objectives in terms of functionality and operational performance.</p>
	<p><b>1.9 Engineering documentation</b></p> <p>Transfer design intentions to drawings, sketches, and documents. Understand the process of transmitting design information.</p>	<p>1. Review the designs of others and communicate findings and issues, including suggested alternatives.</p> <p>2. Communicate your ideas and concepts to project team members.</p> <p>3. Understand the value of project completion reports and lessons learned reports that you or others will apply to future projects.</p> <p>4. Produce sketches, notes, documentation, and design documents to prepare proposals, preliminary and final design drawings/documents for acceptance by the client and approval by regulatory authorities.</p>
	<p><b>1.10 Sustainable, social, economic and environmental development</b></p> <p>Understand the safeguards required to protect the public and the methods of mitigating adverse impacts.</p>	<p>1. Follow public safety regulations and advice during the design and implementation of a project.</p> <p>2. Prioritize public protection by considering customer issues, health and safety issues, environmental protection issues and sustainable development principles.</p>
<p><b>2. Communicate effectively</b></p>	<p><b>2.1 Verbal communication</b></p> <p>Communicate verbally in a Canadian environment (in English or French). Note: Even if they can demonstrate this competency in English, candidates must also demonstrate appropriate knowledge of the French language in accordance with the Charter of the French Language.</p>	<p>1. Communicate in a simple and concise manner.</p> <p>2. Communicate official project data to team members, clients, contractors.</p> <p>3. Express both technical and non-technical issues and ideas clearly to both technical and non-technical personnel.</p> <p>4. Give presentations and/or training sessions to technical and non-technical groups; presentations to superiors and subordinates; internal (colleagues) and external (clients) presentations.</p> <p>5. Present the project parameters to the public.</p> <p>6. Actively participate in meetings.</p> <p>7. Take training in verbal communication.</p>
	<p><b>2.2 Written communication</b></p> <p>Communicate in writing with team members, clients, contractors, and members of the public in a Canadian environment (in English or French). Note: Even if they can demonstrate this competency in English, candidates must</p>	<p>1. Tailor communications to the intended audience.</p> <p>2. Draft and review technical documents</p> <p>3. Draft clear memos and reports to both technical and non-technical personnel.</p> <p>4. Use drawings and sketches to demonstrate key points and concepts.</p>



	<p>also demonstrate appropriate knowledge of the French language in accordance with the Charter of the French Language.</p>	<p>5. Prepare written reports on a technical subject. 6. Prepare written reports based on field observations. 7. Take training in technical report writing. 8. Work with common office programs (e.g. Excel, Word, Outlook, internet browsers).</p>
	<p><b>2.3 Reading and comprehension</b></p>	<p>1. Review technical documents to understand the implications and summarize key points.</p>
	<p>Communicate effectively in a Canadian environment (in English or French). Note: Even if they can demonstrate this competency in English, candidates must also demonstrate appropriate knowledge of the French language in accordance with the Charter of the French Language.</p>	
<p><b>3. Manage projects</b></p>	<p><b>3.1 Project management principles</b></p>	<p>1. Be aware of resource planning, budgeting, change management, scope management, schedule, and unforeseen issues in managing a project from start to end. 2. Understand the impacts that benefits and risks of various design solutions have on a project. 3. Understand the needs and expectations of internal and external clients.</p>
	<p>Awareness of project management principles.</p>	
	<p><b>3.2 Level of responsibility</b></p>	<p>1. Follow and contribute to the development of project management plans. 2. Be aware of future improvements and demands as well as other ongoing projects. 3. Demonstrate increasing responsibility for client contact and management. 4. Demonstrate how project planning activities and interaction with others have increased over your practical development. 5. Participate in managing and adapting a schedule. 6. Demonstrate awareness of issues related to other disciplines that might affect the project, maintaining contact and communication to discuss and resolve issues. 7. Include sustainability analysis in project descriptions.</p>
	<p>Demonstrate an increasing level of responsibility for project planning and implementation.</p>	
<p><b>3.3 Expectations versus resources</b></p>	<p>1. Update the schedule and budget on a regular basis and communicate status. 2. Provide market assessment and/or availability of resources for a project. 3. Meet deadlines without undermining other impacts on the project (eg. health and safety,</p>	
<p>Manage expectations based on available resources.</p>		





		environmental impacts, quality, financial, etc.)
	<b>3.4 Financial and budgetary aspects</b>	<ol style="list-style-type: none"> <li>1. Become familiar with the project budget during design and construction.</li> <li>2. Provide a technical/financial report and compare the options.</li> <li>3. Understand the place of finance in business decisions.</li> <li>4. Understand the principles of budgeting and financing.</li> <li>5. Understand the relevant business processes.</li> <li>6. Understand how to work with and develop contracts.</li> <li>7. Develop financial risk management/mitigation plans (elimination, mitigation, prevention).</li> </ol>
	Understand the financial aspects of the work.	
	<b>3.5 Response to feedback</b>	<ol style="list-style-type: none"> <li>1. Apply the lessons learned and performance reviews in meetings.</li> <li>2. Understand the scope of a project and know how to respond appropriately when a project exceeds its scope.</li> </ol>
	Ask for and respond to feedback.	
	<b>3.6 Project and process life cycle</b>	<ol style="list-style-type: none"> <li>1. Identification: come up with the initial project idea and preliminary design.</li> <li>2. Preparation: provide a detailed design of the project that addresses technical and operational aspects</li> <li>3. Appraisal: analyze the project from the technical, financial, economic, social, and environmental perspectives.</li> <li>4. Preparation of specifications and tender documents: prepare documents for tenders, invitations to tender and opening of tenders, pre-qualification, evaluation of bids and award of work.</li> <li>5. Implementation and monitoring of the solution: carry out project activities, with ongoing checks on progress and feedback.</li> <li>6. Support operation.</li> </ol>
	Gain exposure to the various stages of the process/project life cycle, from the design and feasibility analysis to implementation.	
<b>4. Work on a team</b>	<b>4.1 Working effectively</b>	<ol style="list-style-type: none"> <li>1. Demonstrate respect for others' responsibility and expertise.</li> <li>2. Integrate engineering with other inputs.</li> <li>3. Demonstrate leadership in achieving team goals.</li> <li>4. Actively collaborate.</li> <li>5. Adhere to objectives, decisions, and priorities.</li> </ol>
	Work effectively with other disciplines/people.	
	<b>4.2 Conflict resolution</b>	<ol style="list-style-type: none"> <li>1. Demonstrate leadership in resolving conflict.</li> <li>2. Work to facilitate beneficial conflict resolution.</li> <li>3. Take training in conflict resolution.</li> </ol>
Work to resolve conflicts.		



		<ul style="list-style-type: none"> <li>4. Demonstrate a positive attitude.</li> <li>5. Show willingness to accept comments and criticism.</li> <li>6. Identify situations where you received feedback and how you responded to that feedback.</li> </ul>
<b>5. Act professionally</b>	<b>5.1 Code of ethics</b>	<ul style="list-style-type: none"> <li>1. Comply with Quebec's Code of Ethics and/or with the code in the jurisdiction where you practice.</li> <li>2. Apply professional ethics in meeting corporate directives.</li> <li>3. Understand how conflict of interest affects your practice.</li> </ul>
	Work with integrity, ethically and according to professional standards.	
	<b>5.2 Awareness of personal limitations</b>	<ul style="list-style-type: none"> <li>1. Ask questions, ask for assistance and incorporate input.</li> <li>2. Interact with your supervisor, colleagues, and others.</li> <li>3. Recognize your level of expertise and its limits.</li> </ul>
	Know your field of practice and expertise.	
	<b>5.3 Professional responsibility</b>	<ul style="list-style-type: none"> <li>1. Be aware of the potential professional liability involved in all aspects of your work.</li> <li>2. Demonstrate personal skills with judgment, rigour, analytical skills, and resourcefulness.</li> </ul>
	Understand professional responsibility.	
<b>5.4 Seal and signature use</b>	<ul style="list-style-type: none"> <li>1. Fully understand the appropriate use of your seal and signature.</li> <li>2. Document your activities, decisions, and work in a registry.</li> <li>3. Maintain the traceability your documents.</li> <li>4. Protect the security, sustainability, and confidentiality of information.</li> </ul>	
Master the guidelines for engineering documents.		
<b>6. Manage your professional development</b>	<b>6.1 Professional development activities</b>	<ul style="list-style-type: none"> <li>1. Participate in community, technical, industry and/or professional association committees and task forces.</li> <li>2. Participate in a variety of self-directed and formal professional development activities to learn and stay up to date in your field of practice and report your progress to applicable parties.</li> </ul>
	Demonstrate completion of professional development activities.	
	<b>6.2 Identify training needs</b>	<ul style="list-style-type: none"> <li>1. Gap analysis of knowledge and skills; highlight the gaps that exist.</li> <li>2. Identify areas of weakness where additional training is needed.</li> <li>3. Prepare a self-criticism list and the ways to mitigate or eliminate the weaknesses.</li> </ul>
	Demonstrate awareness of knowledge gaps and areas where you require additional training.	
	<b>6.3 Professional development plan</b>	<ul style="list-style-type: none"> <li>1. Plan to pursue training in areas of weakness and remedy knowledge gaps.</li> <li>2. Stay up to date in your field of professional practice by participating in planned activities such</li> </ul>
	Develop a professional development plan to address knowledge gaps and stay up to	



	date on advances in your field of practice.	as self-directed and formal professional development activities. 3. Keep up to date with developments and new technologies in your field. 4. Apply new skills in your practice.
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Appendix 2: Table 3 – Steps in the assessment process for supervisors

### Internship



As a supervisor, you must consent to assess a holder’s of TRP internship. Assessments consist in confirming or correcting information submitted concerning the responsibilities and the dates of the internship, and potentially making comments that you consider relevant.

### Experience in progress

(Work experience, master’s degree, and doctorate in engineering)



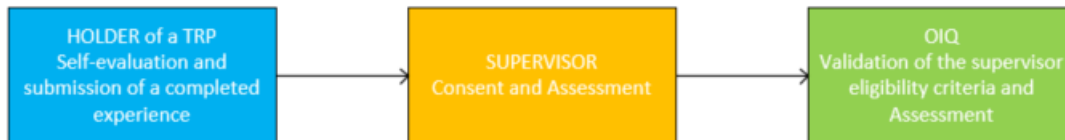
Once the OIQ has confirmed that you meet the criteria to be a supervisor, you must agree to supervise the holder of a TRP and assess his experience when it ends.

When the holder of a TRP completes his self-evaluation and submits his experience, you must give your consent to assess it. Assessments consist in confirming information submitted concerning the experience (dates, responsibilities, level achieved) and sharing your general point of view with us on the experience.

During the assessment process, the OIQ checks again whether you still meet the eligibility criteria to be a supervisor.

### Completed experience

( Work experience, master’s degree and doctorate in engineering)



As a supervisor, you must consent to assess the experience submitted by the holder of a TRP. Assessments consist in confirming information submitted concerning the experience (dates, responsibilities, level achieved) and sharing your general point of view with us on the experience.

During the assessment process, the OIQ checks again whether you meet the eligibility criteria to be a supervisor.