WPC
FOUR PILLARS FORUM

THE PLUMBING TRADE IN CANADA
“PLUMBER”

• ORIGINALLY DESIGNATED AS A RED SEAL TRADE IN 1958 - NOC (NATIONAL OCCUPATIONAL CLASSIFICATION) 7251

• CURRENTLY RECOGNIZED AS A RED SEAL TRADE IN EVERY PROVINCE THROUGHOUT CANADA
RELATED RED SEAL TRADES

- GASFITTER A
- GASFITTER B
- OIL HEAT SYSTEM TECHNICIAN
- REFRIGERATION AND AIR CONDITIONING MECHANIC
- STEAMFITTER/PIPEFITTER
- INSTRUMENTATION AND CONTROLS TECHNICIAN
- SPRINKLERFITTER
- WELDER
### PREREQUISITE – VARIATIONS BY PROVINCE

<table>
<thead>
<tr>
<th>Province</th>
<th>Requirement</th>
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<tbody>
<tr>
<td>Newfoundland and Labrador</td>
<td>Grade 12 or equivalent or entrance assessment.</td>
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<td>Nova Scotia</td>
<td>Grade 12 or equivalent.</td>
</tr>
<tr>
<td>Prince Edward Island</td>
<td>Grade 12 or equivalent.</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>Grade 12. A High School Diploma or an Adult High School Diploma or a G.E.D. Certificate of High School Equivalency, or equivalent as determined by the Apprenticeship and Occupational Certification Board.</td>
</tr>
<tr>
<td>Quebec</td>
<td>Apprenticeship and qualification program administered by the Commission de la construction du Québec. All trade program graduates who have guaranteed employment may be issued an apprentice competency certificate. Non-graduates selected for apprenticeship must have the Secondary II (Grade 9) academic prerequisites and are required to undergo 150 hours of training each year. Apprenticeship in this trade consists of learning on the job and any vocational training needed to develop trade-related competencies. The provincial trade qualification certificate is required for admission to the interprovincial examination.</td>
</tr>
<tr>
<td>Ontario</td>
<td>Grade 10 or equivalent.</td>
</tr>
<tr>
<td>Manitoba</td>
<td>High School Diploma or equivalent (unless an Access Program Trainee or through the High School Apprenticeship Program)</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>Your grade twelve diploma with no modified classes or GED 12 is your guarantee that you meet the educational entrance requirements for apprenticeship in Saskatchewan. Minimum requirements for the Plumber Trade are Math 10 and Science 10. Applicants for apprenticeship or upgrading training whose first language is not English must have a minimum Canadian Language Benchmark Assessment of six (CLB6). *Math (one of the following): IWA (workplace and Apprenticeship), P (Foundations), P (Pre-calculus) or a Math at the indicated level (no modified or general math).</td>
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<tr>
<td>Alberta</td>
<td>English 20-2 • Math 20-3 • Science 10 OR • Entrance Exam</td>
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<tr>
<td>British Columbia</td>
<td>Recommended education: Grade 12 preferred, or equivalent including English 12, Algebra 11, or Trade Mathematics 11, and Physics 11 or Science and Technology 11.</td>
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<tr>
<td>Northwest Territories</td>
<td>Pass entrance examination ’4’, Level 1 Technical Training obtained in Aurora College, Fort Smith, Levels 2-4 obtained in Alberta.</td>
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<tr>
<td>Yukon</td>
<td>Grade 10 Academic Math, Science and English, or equivalent, or pass entrance examination, Technical Training obtained in Alberta.</td>
</tr>
<tr>
<td>Nunavut</td>
<td>Pass entrance examination ’4’ (equivalent to Grade 10 with Math 10). Technical Training obtained in Alberta.</td>
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PRE-ENTRY PATHWAYS

• SECONDARY SCHOOL PROGRAMS
  • SHOP CLASSES
  • YOUTH APPRENTICESHIP PROGRAMS

• PRE-APPRENTICESHIPS
  • TDAS (TRAINING DELIVERY AGENTS) FOR FULL-TIME TRADE SCHOOL VS. PRIVATE CAREER COLLEGES

• TECHNIQUES PROGRAMS
  • COMMUNITY COLLEGES
REGULATORY STRUCTURE

- REGULATORY STRUCTURE
  - GOVERNMENT
  - ACTS AND REGULATIONS
  - TRADE BOARDS AND PACS (PROVINCIAL ADVISORY COMMITTEES)
- AHJS (AUTHORITIES HAVING JURISDICTION)
  - EDUCATIONAL REQUIREMENTS
  - TRAINING CENTRE ACCREDITATION REQUIREMENTS
  - LICENSING
  - OCCUPATIONAL HEALTH AND SAFETY
  - QUALIFICATIONS ENFORCEMENT
- PROVINCIAL VS. NATIONAL STANDARDS AND SCOPE OF PRACTICE
- COMPULSORY VS. VOLUNTARY STATUS VARIATIONS BY PROVINCE
- THE IMPACTS/DIFFERENCES INHERENT WITHIN THE TWO ENVIRONMENTS
TRADE STRUCTURE AND EXPECTATIONS

• NATIONAL VS. PROVINCIAL VARIATIONS
• SCOPE OF KNOWLEDGE
• COMPETENCIES/SKILLS
• CURRICULUM
• TRAINING MATERIALS
• TRAINING STANDARDS/REPORTING REQUIREMENTS (ON THE JOB TRAINING STANDARDS/RECORD BOOK)
• SCOPE OF PRACTICE
HARMONIZATION

• RED SEAL HARMONIZATION-ESDC (EMPLOYMENT AND SOCIAL DEVELOPMENT CANADA)
  • PURPOSE/MANDATE

• HARMONIZATION ("TO MAKE CONSISTENT")
  • PARALLEL TRAINING IN EVERY PROVINCE
  • MOBILITY OF QUALIFIED PLUMBERS AND APPRENTICES

• STRATEGIES/IMPLEMENTATION AND ADOPTION
  • PRODUCTS
  • ELLIS DOCUMENT (DETAILED COMPARISON TOOL THAT PROVIDES AN INTERPROVINCIAL OVERVIEW OF CANADIAN APPRENTICESHIP SYSTEMS.)
HARMONIZATION

- RED SEAL/ESDC PRODUCTS
  - NOA (NATIONAL OCCUPATIONAL ANALYSIS) *PREVIOUS VERSION/STRUCTURE TO BE UPDATED
  - RSOS (RED SEAL OCCUPATIONAL STANDARD) *NEW VERSION TO MEET REVISED REQUIREMENTS
  - RED SEAL INTERPROVINCIAL EXAM
## Apprenticeship Training Program

### Interprovincial Name

**Plumber**
NOC (7251)

*View Provincial and Territorial Trade Names.*

<table>
<thead>
<tr>
<th>English Provincial and Territorial Trade Names</th>
<th>NL</th>
<th>NS</th>
<th>PE</th>
<th>NB</th>
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### French Provincial and Territorial Trade Names

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<td>Tuyauente/tuyauteuse (spécialité plombier/plombière)</td>
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Please note that the abbreviations for the provinces use the Canada Post standard.

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<th>Part A - General Information</th>
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<tr>
<td><strong>NL</strong></td>
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<tr>
<td>Red Seal designated (Yes/No)</td>
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<td>Apprenticeship Training Provided (Yes/No)</td>
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<tr>
<td>Apprenticeship Term - Years and Total Hours</td>
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### APPRENTICESHIP STRUCTURE

#### Part A - General Information: Education/Entrance Requirements

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<th>Training Methods</th>
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<th>YT</th>
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<td>Prior Learning Assessment and Recognition (PLAR) Available (Yes/No) Click 'Yes' for more information</td>
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<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
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<td>I</td>
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<td>Pre-Employment Training - Compulsory (C); Voluntary (V); Not Available (NA)</td>
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<td>V</td>
<td>V</td>
<td>V</td>
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<td>Train-the-Trainer Program for Journeypersons Supervising Apprentices (Yes/No)</td>
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<td>Ratio - Journeyperson/Apprentice - Indicate Actual Ratio or Variable (V)</td>
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<td>C</td>
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**Ellis Chart – General Information**
### Part B - Curriculum Resources

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<td>Province/Territory Skill Profile Chart (Yes/No)</td>
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<td>Apprenticeship Program Outline (Yes/No)</td>
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<td>Apprentice On-The-Job Training Standards/Record Book (Yes/No)</td>
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### Part C - Assessment/Examination Resources

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CONTRACTOR REQUIREMENTS

- MASTER LICENSING
- SUPERVISION (COMPETENT PERSON)
- HEALTH AND SAFETY
- INSURANCE
  - LIABILITY
  - WORKMAN’S COMPENSATION
  - SPONSORSHIP OF APPRENTICES
- RATIOS (JOURNEYPerson TO APPRENTICE)
CODES AND STANDARDS

- VARIES BY SYSTEM
- NATIONAL DOCUMENTS
- ADOPTION PROCESSES
- STANDARD (BEST PRACTICE) VS. CODE (REQUIREMENT)
CODES AND STANDARDS

• CODES AND STANDARDS (NOTE: NOT A CONCLUSIVE LIST)
  • NATIONAL CODES AND STANDARDS:
    • CSA (CANADIAN STANDARDS ASSOCIATION)
    • NRC (NATIONAL RESEARCH COUNCIL CANADA)
    • NPC (NATIONAL PLUMBING CODE)
    • NBC (NATIONAL BUILDING CODE)
  • PROVINCIAL CODES
    • VARIES BY PROVINCE
      (SOME PROVINCES ADOPT A NATIONAL CODE)
  • INTERNATIONAL CODES
    • ASME (AMERICAN SOCIETY OF MECHANICAL ENGINEERS)
    • BPVC (BOILER AND PRESSURE VESSEL CODE)
    • IAPMO (THE INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS)
    • ASTM (AMERICAN SOCIETY OF TESTING MATERIALS)
      NOW KNOWN AS “ASTM WORLDWIDE”
UNIONS AND THEIR ROLE

UNITED ASSOCIATION
(OVER 330,000 MEMBERS IN NORTH AMERICA WITH 57,000 MEMBERS ACROSS CANADA)
TYPICAL APPRENTICESHIP PATHWAY

• SECONDARY SCHOOL
• PRE-ENTRY PROGRAM (OPTIONAL)
• SPONSORSHIP BY EMPLOYER
• SIGNED CONTRACT BY GOVERNMENT, SPONSOR (EMPLOYER), APPRENTICE (OPTION OF A 4TH PARTY WHERE PERMITTED-APPRENTICE REPRESENTATIVE UNION)
• COMBINATION OF IN-THE-FIELD AND IN-CLASS TRAINING
• ATTEND ALL LEVELS OF TRADE SCHOOL (IN-CLASS TRAINING)
• COMPLETE ALL HOURS AND LEVELS OF TRAINING AS PRESCRIBED APPRENTICESHIP CONTRACT
• COMPLETE AND SUBMIT ALL DOCUMENTATION AS PER TERMS OF APPRENTICESHIP CONTRACT TO AHJ
• BOOK EXAM DATE
• COMPLETE EXAMINATION(S) AS REQUIRED BY AHJ
• CONFIRM NEW STATUS AS JOURNEYPERSON PLUMBER
POST-APPRENTICESHIP

- ADDITIONAL CERTIFICATIONS/ACCREDITATIONS
  - SPECIALTY TRAINING
  - KNOWLEDGE-BASED
  - REQUIREMENTS OF LOCAL AHJ
  - CODE UPDATE COURSES
TECHNOLOGY/TRENDS

• IN THE FIELD (TOOLS)
  • GPS (GLOBAL POSITIONING SYSTEMS)
  • CAD (COMPUTER AIDED DRAFTING)
  • DIGITAL LAYOUT
  • SPECIALTY TOOLS

• IN THE FIELD (KNOWLEDGE)
  • SUSTAINABLE CONSTRUCTION STRATEGIES
  • HIGH-EFFICIENCY SYSTEMS AND EQUIPMENT

• IN THE CLASSROOM
  • ON-LINE RESOURCES/TRAINING AND SIMULATORS
  • VIRTUAL AND AUGMENTED REALITY
  • PROFICIENCY WITH COMPUTERS, SMART DEVICES AND VARIOUS RELATED SOFTWARE AND APPLICATIONS
PRODUCTS AND MATERIALS WITHIN THE PLUMBING TRADE

• THERMOPLASTICS ARE BECOMING MORE PREVALENT IN LOW-RISE RESIDENTIAL CONSTRUCTION AND ARE EXPANDING MARKET SHARE IN HI-RISE RESIDENTIAL CONSTRUCTION INSTALLATIONS.
• TRADITIONAL MATERIALS LIKE CAST IRON, STEEL AND COPPER ARE USED REGULARLY IN INDUSTRIAL, COMMERCIAL, INSTITUTIONAL, HI-RISE RESIDENTIAL.
• THE VARIATIONS IN JOINING METHODS RANGE FROM TRADITIONAL LIKE SOLDERING, BRAZING AND SOLVENT WELDING TO NEWER TECHNOLOGIES SUCH AS PRESS-FIT TYPE CONNECTIONS.
FAILURES AND CONSUMERS

• CONTRACTORS ARE REQUIRED TO CARRY LIABILITY INSURANCE FOR FAILURES. MANUFACTURERS OFFER VARIATIONS OF WARRANTIES ON THEIR MATERIALS, HOWEVER, THE INSTALLER/CONTRACTOR REPRESENTATIVE IS ULTIMELY RESPONSIBLE TO SHOW “DUE DILIGENCE” IN ALL FACETS OF THE EXECUTION OF THEIR WORK TO AVOID LIABILITY.

• CODES AND STANDARDS ARE ADOPTED TO PRESCRIBE THE INSTALLATION AND OPERATION OF SYSTEMS.

• ALL PLUMBING WORK PERFORMED MUST BE DONE THROUGH A PERMIT PROCESS.

• THE AHJ MAY HAVE SPECIFIC REQUIREMENTS AND CONSEQUENTS FOR SYSTEM INSTALLATION FAILURE CAUSED BY CRAFTSMANSHIP.
NEGATIVES

- MISCOMMUNICATION
- ENFORCEMENT OF QUALIFICATIONS
- VARIATIONS IN SCOPE OF WORK/KNOWLEDGE AND SKILL
- MULTIPLE AHJS
- NEGATIVE STIGMA TO THE TRADES
- PROVINCIAL GOVERNMENT MISDIRECTION
POSITIVES

- RED SEAL HARMONIZATION INITIATIVES
- FEDERAL GOVERNMENT RECOGNIZING SHORTFALLS
- TECHNOLOGY RELATED INITIATIVES CAN CREATE A “CONNECTED” TRACKING SYSTEM FOR TRAINING AND APPRENTICES
- TECHNOLOGY CAN TRACK AND PUBLICIZE QUALIFIED PLUMBERS FOR CONSUMER PROTECTION
- DEMAND INCENTIVE FOR HIGHLY QUALIFIED AND SKILLED PLUMBERS
PARTNERSHIPS
ORGANIZATIONS/ASSOCIATIONS