

WPC Presentation on the Plumbing Trade in Canada

Introduction

- “Plumber”; “Plumbing”
 - Originally designated as a Red Seal Trade in 1958
 - NOC (National Occupational Classification) 7251
 - Now recognized as a Red Seal trade in every Province throughout Canada
 - Apprenticeship Trade

Related Red Seal (Inter-Provincial) Trades:

- Gasfitter A
- Gasfitter B
- Oil Heat System Technician
- Refrigeration and Air Conditioning Mechanic
- Steamfitter/Pipefitter
- Instrumentation and Controls Technician
- Sprinklerfitter
- Welder

Entry Requirements

- Variations by Province (Ellis Chart)

PreEntry Programs to a Plumbing Apprenticeship

- 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

Apprenticeship Structure (Ellis Chart)

- Variations by Province
 - Total Hours
 - Total Terms
 - Total Levels of Trade School
 - Exemptions

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
- 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.)
 - 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
- Contractor Requirements
 - Master Licensing
 - Supervision (Competent Person)
 - Health and Safety
 - Insurance
 - Liability
 - Workman’s Compensation
 - Sponsorship of Apprentices
 - Ratios (Journeyman to Apprentice)

Codes and Standards

- Vary by System
- National Documents
- Adoption Processes
 - Standard (Best Practice)/Code (Requirement)
- 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 province 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”

Other National Industry Organizations that Impact on the Work of Plumbers in Canada

- Unions
 - 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 to 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 Utilized 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 Consumer Protection

- Contractors are required to carry liability insurance for failures. Manufacturers offer variations of warranties on their materials, however, the installer/contractor representative is ultimately 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.
- The AHJ may have specific requirements and consequences 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
- Government misdirection

Positives

- Red Seal Harmonization Initiatives
- 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