

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

Newfoundland and Labrador	Grade 12 or equivalent or entrance assessment.
Nova Scotia	Grade 12 or equivalent.
Prince Edward Island	Grade 12 or equivalent.
New Brunswick	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.
Quebec	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 III (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.
Ontario	Grade 10 or equivalent.
Manitoba	High School Diploma or equivalent (unless an Access Program Trainee or through the High School Apprenticeship Program)
Saskatchewan	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 all 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): WA (workplace and Apprenticeship); F (Foundations); P (Pre-calculus) or a Math at the indicated level (no modified or general math).
Alberta	English 20-2 • Math 20-3 • Science 10 OR • Entrance Exam
British Columbia	Recommended education: Grade 12 preferred, or equivalent including English 12, Algebra 11, or Trade Mathematics 11, and Physics 11 or Science and Technology 11.
Northwest Territories	Pass entrance examination '4', Level 1 Technical Training obtained in Aurora College, Fort Smith, Levels 2-4 obtained in Alberta.
Yukon	Grade 10 Academic Math, Science and English, or equivalent, or pass entrance examination. Technical Training obtained in Alberta.
Nunavut	Pass entrance examination '4' (equivalent to Grade 10 with Math 10). Technical Training obtained in Alberta.

Ellis Chart – Prerequisites to Entry



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



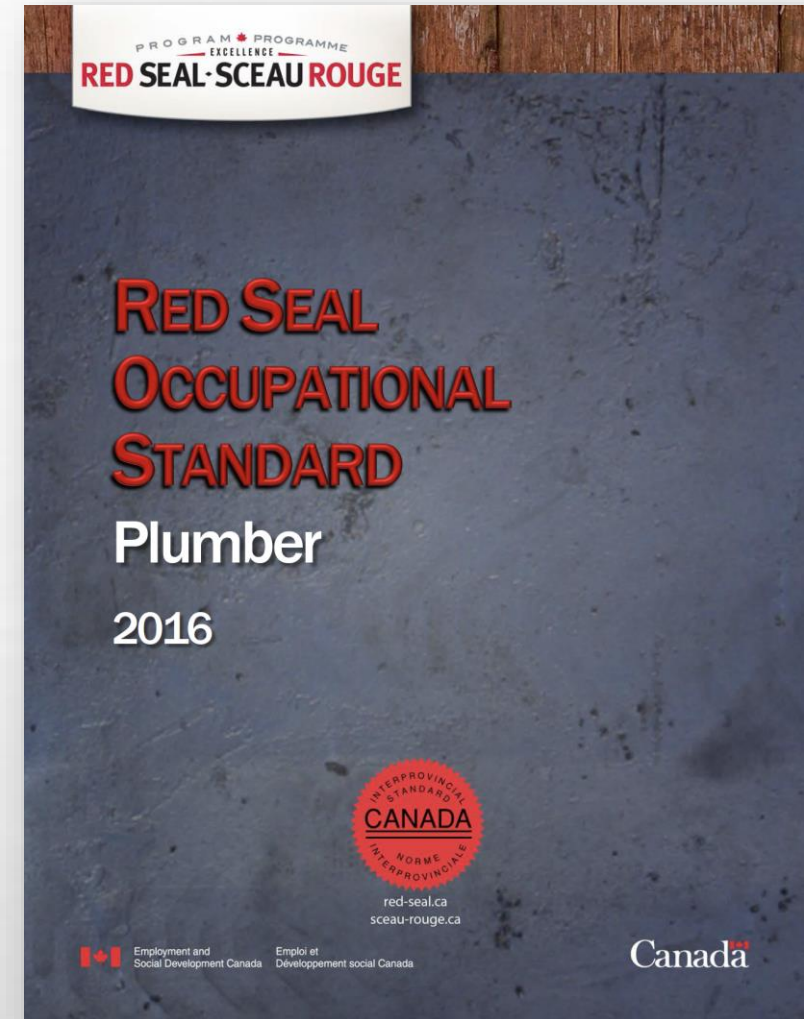
HARMONIZATION

- 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 STRUCTURE

Apprenticeship Training Program

Interprovincial Name

Plumber 🇨🇦
NOC (7251)

▼ View Provincial and Territorial Trade Names.

English Provincial and Territorial Trade Names

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
Plumber	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Plumbing					✓								

French Provincial and Territorial Trade Names

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
Plombier/plombière	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓
Plombier							✓						
Plombier ou plombière						✓							
Plomberie					✓								
Tuyauteur/tuyauteuse (spécialité plombier/plombière)					✓								

Ellis Chart – Trade Name by Province



APPRENTICESHIP STRUCTURE

Please note that the abbreviations for the provinces use the Canada Post standard.

Part A - General Information

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
Red Seal designated (Yes/No)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Apprenticeship Training Provided (Yes/No)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Apprenticeship Term - Years and Total Hours	4 (7200)	4 (7200)	4 (7200)	7200	4 (8000)	9000	5 (9000)	4 (7200)	4 (6960)	4 (6420)	4 (7200)	4 (6400)	4 (1800)

Ellis Chart – Terms of Apprenticeship and Total Hours



APPRENTICESHIP STRUCTURE

Part A - General Information : Education/Entrance Requirements

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
Prior Learning Assessment and Recognition (PLAR) Available (Yes/No) Click 'Yes' for more information	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Apprenticeship Accreditation Process Available (Yes/No)	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Apprenticeship Technical Training Required (Yes/No)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Training Delivery Methods - Block Release (BR); Individualized (I); Both (B)	BR	BR	BR	BR	I	BR	BR	BR	BR	BR	BR	BR	BR
If Block Release:	Number of Periods/Total Weeks	3/50	4/25	4/24	4/32		3/24	5/45	4/30	4/32	4/26	4/32	4/32
	Total Hours						1575	900	960		960		
	Total Theory Hours	1500	750	720	1280		1152	600			690	690	690
	Total Shop/Lab Hours	-					423	300			270	270	270
If Individualized:	Total Hours				1680								
	Day/Hour Release			No	No								
	Fixed Entry/Open Exit			No	No								
	Flexible/Distance Education			No	No								
	Other			No	Yes*								
Pre-Employment Training - Compulsory (C); Voluntary (V); Not Available (NA)	V	V	V	V	C	NA	V	V	NA	V	NA	V	NA
Train-the-Trainer Program for Journeypersons Supervising Apprentices (Yes/No)	No	Yes	No	No	Yes	No	No	No	No	No	No	No	No
Ratio - Journeyperson/Apprentice - Indicate Actual Ratio or Variable (V)	1:2	1:1	1:1	1:1	2:1	1:1, 3:1	1:1	1:2	1:2	NA	1:2	1:1	1:2
Journeyperson Certification Available - Compulsory (C); Voluntary (V); Not Available (NA)	V	C	C	C	C	C	V	C	C	V	V	V	V

Ellis Chart – General Information



APPRENTICESHIP STRUCTURE

Part B - Curriculum Resources

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
Occupational Analysis - National (N); Province/Territory (P/T); Both (B); Not Available (NA)	N	N	N	N	P/T	B	N	N	P/T	N	N	N	N
Province/Territory Skill Profile Chart (Yes/No)	Yes	No	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes
Apprenticeship Program Outline (Yes/No)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Apprentice On-The-Job Training Standards/Record Book (Yes/No)	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes
Province/Territory Journeyperson Course Outline(s) - Upgrading (UG); Updating (UD); Both (B); Not Available (NA)	NA	NA	NA	UG	NA	NA	NA	NA	NA	NA	NA	NA	NA
Modularized Learning Resource Materials (Yes/No)	No	Yes	No	No	Yes	No	No	No	Yes	No	No	No	Yes

Part C - Assessment/Examination Resources

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
Province/Territory In-School Level Practical Examinations (Yes/No)	No	No	No	No	No	No	No	No	No	No	No	No	No
Province/Territory Level Written Examinations (Yes/No)	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province/Territory Journeyperson Examination(s) - Written (W); Practical (P); Both (B); Not Available (NA)	NA	NA	NA	W	W	W	W	W	W	NA	W	NA	NA

Ellis Chart - Curriculum and Red Seal Examination Adoption



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 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.
- 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

