Residential Heat Pump Systems Challenges, upskilling, and what Building Officials should know

Mary McWilliam

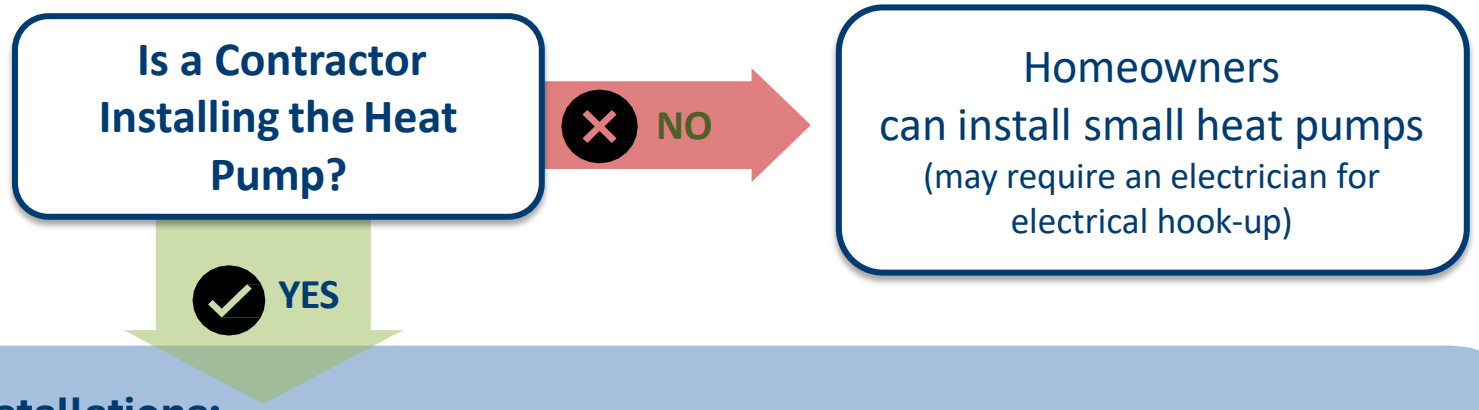
May 14, 2025

Residential Heat Pump Challenges

Regulations, Workforce, Competency Gaps

Who can legally install heat pumps?

BC REGULATIONS



3 Regulations govern Heat Pump installations:

BC Building Act / Building Code Regulation

Ministry of Housing and Municipal Affairs

BC Safety Standards Act/Regulation

Ministry of Emergency Management and Climate Readiness

BC Skilled Trades Act/Regulation

Ministry of Post Secondary Education and Future Skills

PLUS – Clean BC Incentive Programs set additional requirements for upskilling:

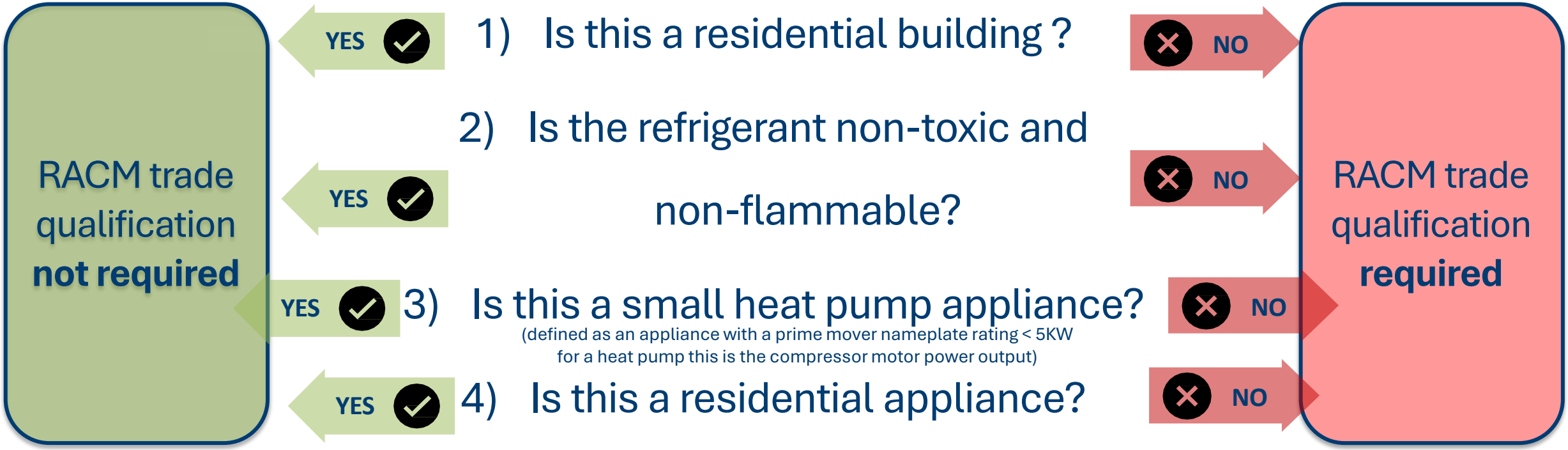
Climate Change Accountability Act

Ministry of Energy and Climate Solutions

BC Safety Standards Act

Power Engineers, boiler, pressure vessel and refrigeration regulation Regulation

Test for work requiring Refrigeration and Air Conditioning Mechanic (RACM) trade qualification:



Skilled Trades Regulation

- Defines scope of trade
  - Does not clearly define an “**appliances manufactured primarily for residential use**” , but excludes these from the RACM scope
  - Interpretation to date in BC has been in line with Safety Standards Act
- Directs scope of apprenticeship program curriculum

MINISTER'S SKILLED TRADES BC REGULATION

Refrigeration and air conditioning mechanic

10 (1) Subject to subsection (2), the prescribed scope of work for a refrigeration and air conditioning mechanic consists of the following:

(a) general trade activities in respect of ventilation, air conditioning and refrigeration units and systems;

(b) connecting to air delivery systems for refrigeration or air conditioning units;

(c) installing ventilation, air conditioning and refrigeration units and systems;

(d) installing hydronic and secondary refrigerant systems and associated controls.

(2) The scope of work prescribed in subsection (1) of this section does not apply to a person carrying out the tasks, activities or functions described in that scope of work, if carried out for the following:

(a) work on refrigerated appliances manufactured primarily for residential use;

(b) work on reefer units and other refrigerated shipping containers, or the manufacture of those types of units and containers;

(c) work on residential humidifying and air exchange systems.

Safety Standards Act

POWER ENGINEERS, BOILER, PRESSURE VESSEL AND REFRIGERATION SAFETY REGULATION

[Last amended December 1, 2022 by B.C. Reg. 255/2022]

Application of this regulation

3 (1) This regulation applies in respect of every boiler and boiler plant, every pressure plant, every pressure vessel, every pressure piping system, every fitting, every plant and all refrigeration equipment and refrigeration plants.

(2) Despite subsection (1), this regulation does not apply to any of the following:

(a) a power plant with a heating surface of 2 m^2 or less;

(b) a heating plant with a heating surface of 3 m^2 or less;

(c) Repealed. [B.C. Reg. 134/2009, s. 11 (a).]

(d) a low pressure thermal fluid plant with a heating surface of 3 m^2 or less;

(e) a heating plant that has no valves or other obstruction to prevent circulation of fluid between the boiler and an expansion tank that is fully vented to the atmosphere;

(f) a heating plant, refrigeration plant or pressure vessel plant, other than plants with toxic or flammable contents, that is located in a building that contains only 4 or fewer self-contained residential units;

(g) a pressure vessel operating at and with relief valves set at a pressure of 103 kPa or less;

(h) a pressure vessel not equipped with heating element that is constructed for the storage of water at a temperature of 65°C or less and a pressure of 1 720 kPa or less or has a diameter of 610 mm or less;

(i) a pressure vessel used for hydraulic purposes having an operating temperature of less than 82°C, if the primary design considerations are mechanical in nature and stresses are derived from the functional requirements of the device rather than fluid pressure;

(j) a refrigeration plant with a capacity of less than 5 kW prime mover nameplate rating;

(k) a cushion tank with a diameter of 610 mm or less that is constructed to operate at a working pressure of 207 kPa or less;

(l) a distribution main or service pipe as defined in the Gas Safety Regulation;

(m) piping and fittings external to the boiler proper in a low temperature, low pressure fluid plant or a heating plant;

(n) a pressure piping system operating at and with a relief valve or valves set at 103 kPa or less;

(o) a water heater with a heat input of 120 kW or less;

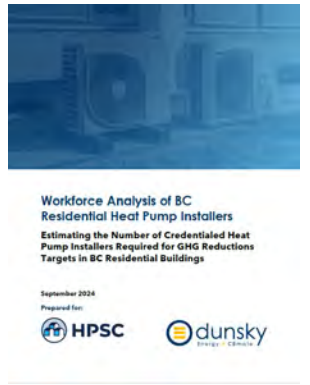
(p) a boiler or pressure vessel subject to the jurisdiction of Transport Canada under the *Transportation of Dangerous Goods Act* (Canada) or a boiler or pressure vessel subject to the *Canadian Shipping Act*;

(q) gas-insulated switchgear and control gear used for control of high voltage electricity;

(r) refrigeration equipment used for air conditioning or refrigerated compartments on railway cars, motor vehicles, motor-drawn vehicles, aircraft or ships;

(s) air or hydraulic brake systems subject to the Motor Vehicle Safety Regulations under the *Motor Vehicle Safety Act* (Canada);

Workforce



- **2,500 Refrigeration and Air Conditioning Mechanics (RACMs)**
  - 12% serving small residential sector
  - on track to reach 3,000 RACM by 2030
- Workforce needed for residential only is 2,300 by 2030

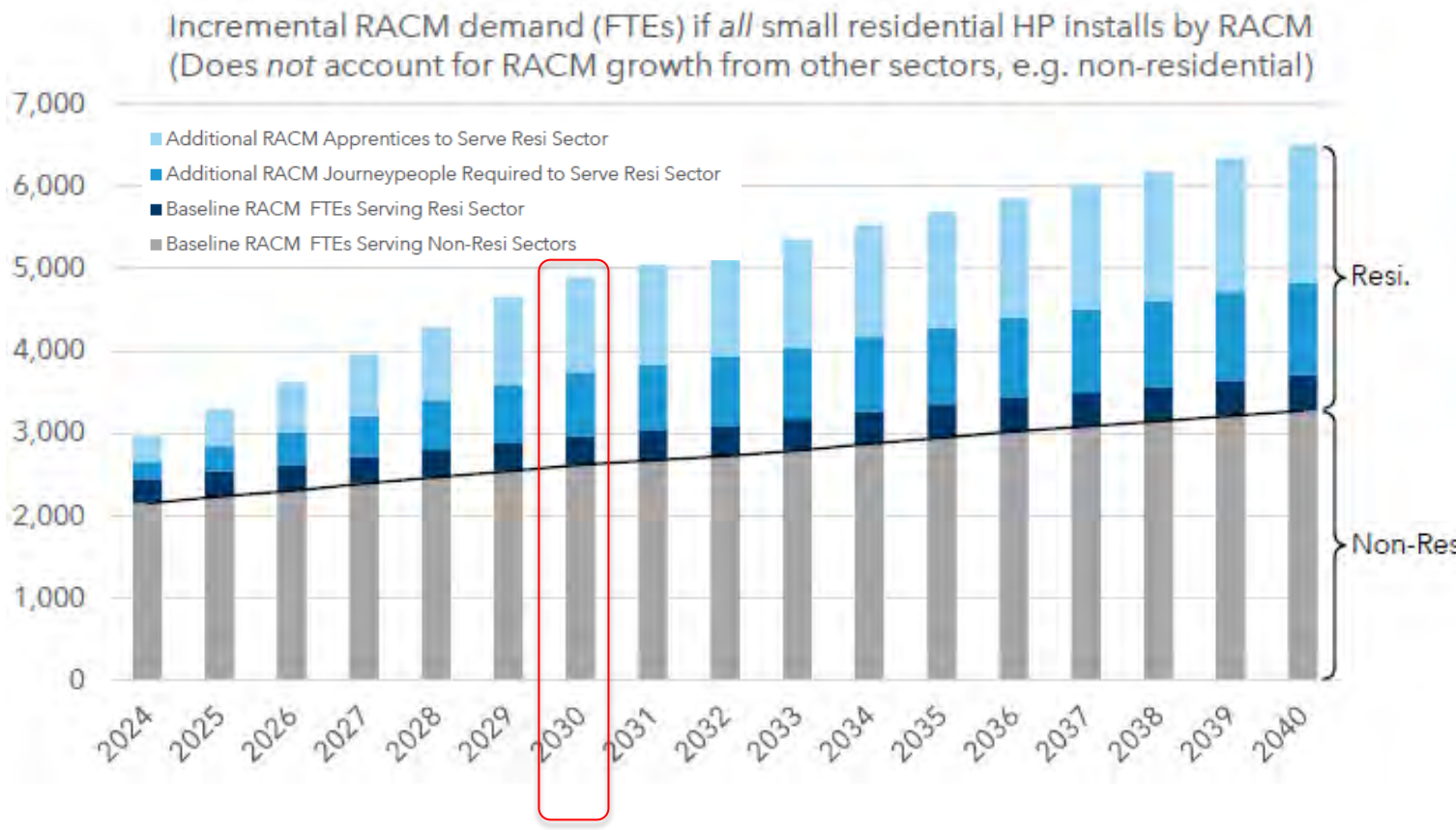
Figure 6: Annual FTE workforce required for small residential heat pump installations.

HPSC & Dunsky 2024 - **Workforce Analysis of BC Residential Heat Pump Installers**
Estimating the Number of Credentialed Heat Pump Installers Required for GHG Reductions Targets in BC Residential Buildings

Workforce Needed for Small Residential HP

workforce we need:

- **Additional 2,000 skilled small residential heat pump installers by 2030**



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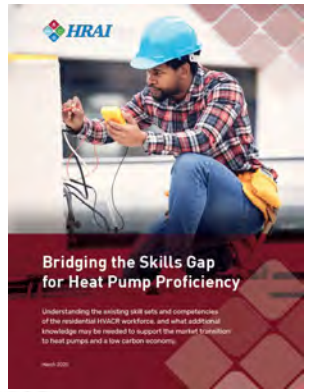
Trade Competencies for Heat Pumps



DACUM 23 SKILL SETS:

1. Protect Self and Others
2. Hand Tools
3. Power Tools
4. HVACR Specialty Tools
5. Specialty Products and Refrigerants
6. Job Site Preparation - New Construction
7. Job Site Preparation - Re/Re Construction
8. Sizing and Selection of Heat Pump
9. Installation of Ductless Heat Pump
10. Installation of Ducted Heat Pump
11. Installation of Specialty Heat Pumps
12. Maintenance of Ductless Heat Pump
13. Maintenance of Ducted Heat Pumps
14. Maintenance of Specialty Heat Pumps
15. Service of Ductless Heat Pump
16. Service of Ducted Heat Pump
17. Service of Specialty Heat Pumps
18. Controls/Low Voltage Electronics
19. Residential Line Voltage Electronics
20. AHJ/Codes
21. Customer Service and Relations
22. Commissioning
23. Applications and Sales for Heat Pump Technology

Using the DACUM, the committee created a technical assessment. The assessment did not include certain skill sets (categories 1, 2, 3 and 21) because of their general applicability across trades. The remaining skill sets were organized into nine modules:

1. **Specialty Products and Tools (Skill Sets 4–5)**
2. **Job Site Preparation (Skill Sets 6–7)**
3. **Sizing and Selection (Skill Set 8)**
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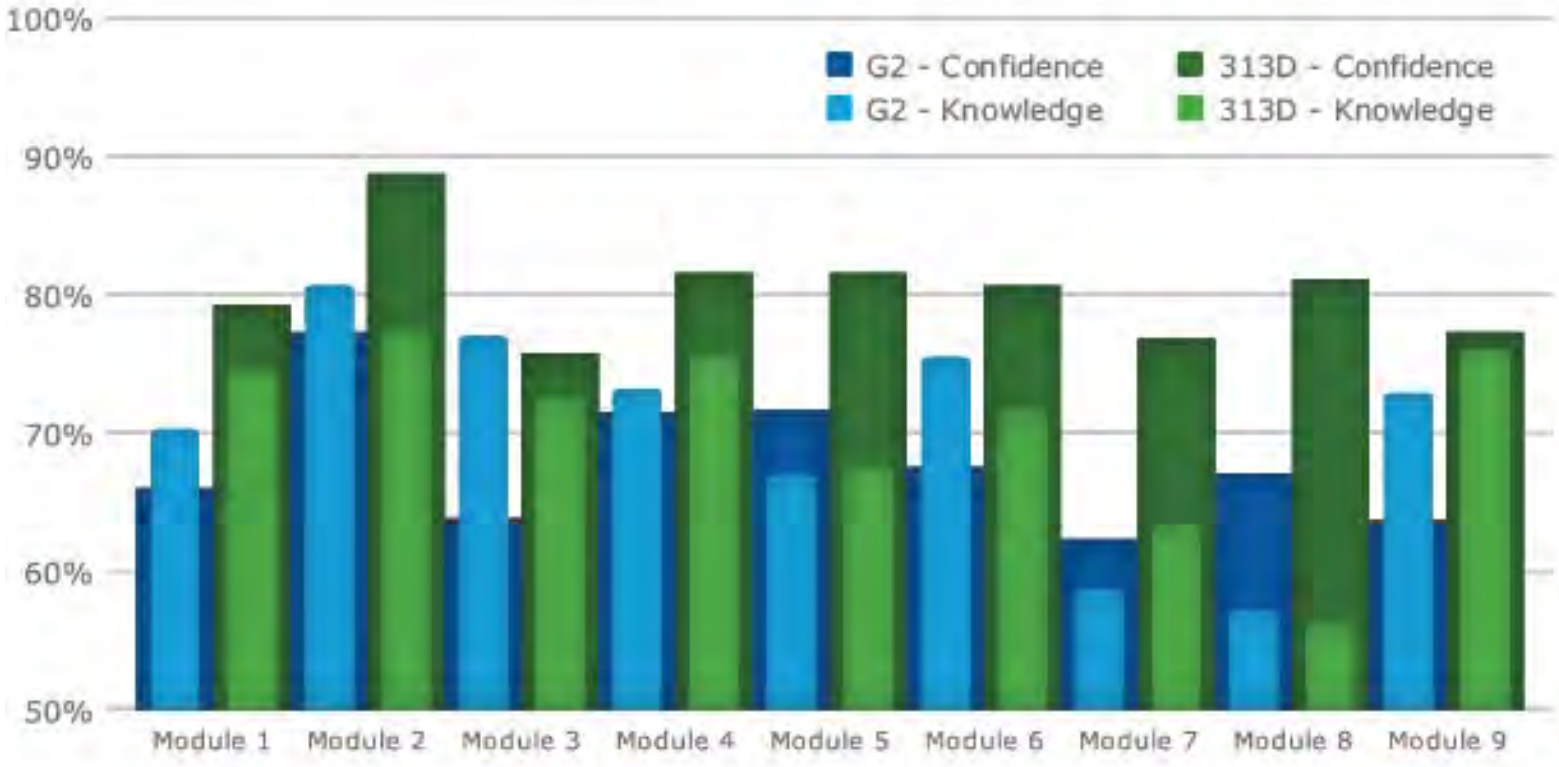
6. **Service (Skill Sets 15–17)**
7. **Controls and Line Voltage (Skill Sets 18–19)**
8. **Codes and Commissioning (Skill Sets 20 & 22)**
9. **Applications (Skill Set 23)**

Figure 4. Confidence vs Knowledge by License and Module



HRAI 2025. Bridging the Skills Gap for Heat Pump Efficiency

Upskilling Needs

Immediate and Medium to Long-Term Solutions

Who Needs Upskilling?

- Designers
- Trades
- Non-Trades
- Homeowners / occupants
- Building officials

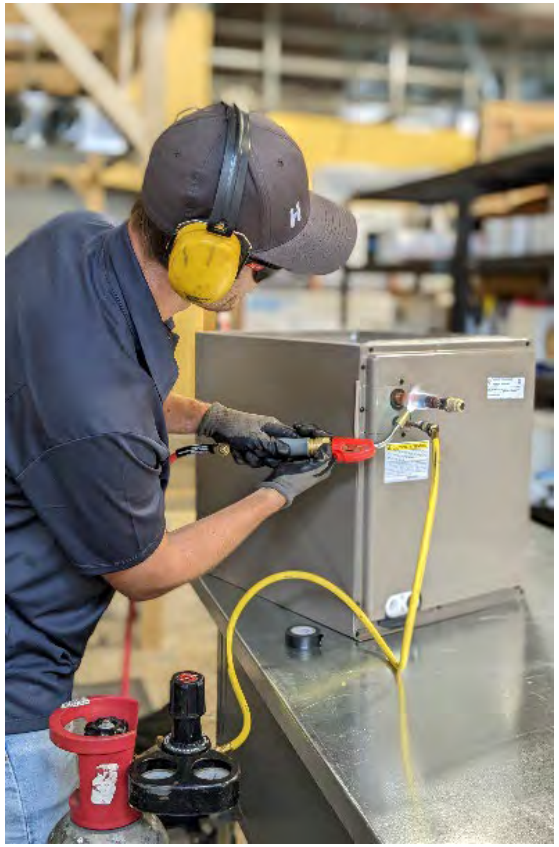
BC Context

- Consultation with stakeholders (including BOABC)
- 13 recommended actions
- HVAC Solutions Council
- Highlights:
  - Design licensing
  - Trades training
  - Permitting and enforcement

Roadmap Summary

Action
HVAC Solutions Council
1. HVAC Solutions Council (HVAC SC)
Part 9 HVAC Design Licensing
2. Develop detailed *Part 9 HVAC Designer Licensing Framework* & subsequent licensing system
3. Require HVAC Design by Licensed Designer in HPCN
Trades' Capacity to Install & Service Future HVAC Systems
4. Review current Refrigeration & AC Mechanic Trade standards
5. Heat Pump Install Training & Credential Plan
6. Conduct study & documentation to support proposal for a Residential Credential
7. Formally propose a Residential Credential as part of RACM
8. Industry & Skilled Trades BC coordinate to evaluate the case for a Residential Credential
9. Increase in funding for credential development/expansion
Permitting & Enforcement
10. Best practice permitting & verification regime
11. HVAC permitting by AHJs
12. Refine options for province-wide processes
13. Consistent permitting and verification regimes, province-wide

RESIDENTIAL AIR TO AIR HEAT PUMP SPECIALIST



CREATED AND DELIVERED IN PARTNERSHIP BY:

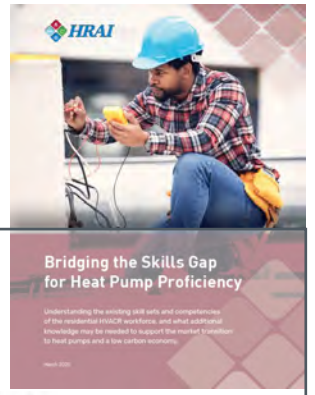
teca thermal environmental comfort association

Quality FIRST™

HOME PERFORMANCE STAKEHOLDER COUNCIL

BCIT®

Trade Competencies for Heat Pumps



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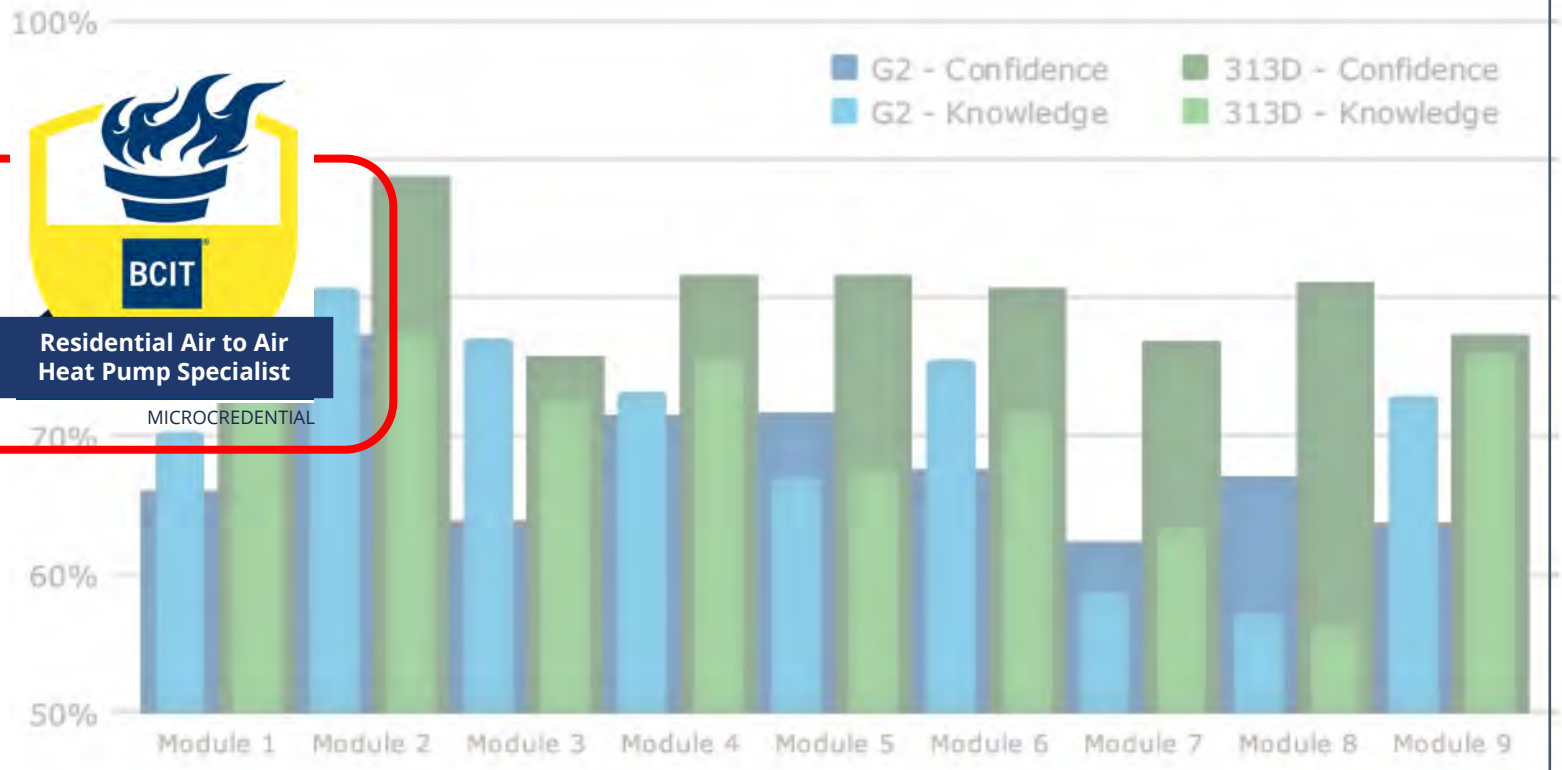
BCIT

Residential Air to Air Heat Pump Specialist

MICROCREDENTIAL

Figure 4. Confidence vs Knowledge by License and Module



HRAI 2025. Bridging the Skills Gap for Heat Pump Efficiency

COURSES & CERTIFICATIONS

Microcredential Course	Course Certifications[1]
■ MZEB 1110 - Heat Loss and Heat Gain Calculations	Quality FIRST™ Heat Loss / Heat Gains
■ MZEB 1120 - Principles of Moving Air	Quality FIRST™ Principles of Moving Air (POMA)
■ MZEB 2110 - Residential Air Source Heat Pump System Design	Quality FIRST™ Air Source Heat Pump Systems Design
■ MZEB 2120 - Residential Air Source Heat Pump System Retrofit Design	HPSC Quality Installation of Forced Air Furnaces & Air Source Heat Pump Retrofits in BC Homes
■ MZEB 3110 - Residential Air Source Heat Pump Installation Skills	

Residential Air to Air Heat Pump Specialist Microcredential

Residential Air to Air Heat Pump Specialist

MICROCREDENTIAL

BCIT Course Name and Number	Alternative Equivalent Courses	Hours	Passing Grade	Delivery type E.g. online, in-person, blended, a/synchronous etc.
MZEB 1110 - TECA Quality First - Heat Loss & Heat Gains Calculations	TECA - Heat Loss and Heat Gains or HRAI - Residential Heat loss & Heat Gain Calculations	16	70%	**Online, instructor-led learning:** ✓ **10.5 hours** – instructor led ✓ **Formal learning assessment through quizzes and assignments** ✓ Heat loss and heat gains calculations for new and existing homes
MZEB 1120 - TECA Quality First - Principles of Moving Air	TECA - Principles of Moving Air or HRAI - Basic Principles of Residential Ventilation	16	70%	**Online, instructor-led learning:** ✓ **16 hours** – instructor led ✓ **Formal learning assessment through quizzes and assignments** ✓ Air movement and theory ✓ Design and installation planning for new construction and retrofits
MZEB 2110 - TECA Quality First - Air to Air Heat Pump Design (Residential)		39	70%	**Online, instructor-led learning:** ✓ **39 hours** – instructor led ✓ **Formal learning assessment through 16 quizzes and 10 assignments** ✓ Refrigeration and heat pump theory ✓ Design and installation planning for new construction and retrofits
MZEB 2120 -Residential Air to Air Heat Pump System Retrofit Design		15	70%	**Online, instructor-led learning:** ✓ **15 hours** – instructor led ✓ **Formal learning assessment through 4 quizzes and 3 assignments** ✓ Design and installation planning for retrofits
HVAC 0145 - **Canada's Ozone Layer Protection Awareness Program for HVAC and Refrigeration**	HRAI - Canada's Ozone Layer Protection Awareness Program	Not included	70%	**Online, instructor-led learning:** ✓ **6 hours** – instructor led ✓ **Formal learning assessment** through exam ✓ Refrigerant regulations and safety
MZEB 3110 - **Residential Air Source Heat Pump Installation Skills**	To be determined (partnerships with regional training providers anticipated)	36	70%	**In-person, hands on learning:** ✓ **36 hours** – instructor led, hands-on practice ✓ **Formal learning assessment through demonstrated practice 9 core installation skill areas**, plus quizzes and 7 assignments ✓ Installation practice focused on duct assessment/modifications, lineset installations, charging, condensate drains, controls, commissioning)
	TOTAL	**122**		**[86 hrs theory and design + 36 hours hands-on practice]**

In partnership with:

HPSC

teca thermal environmental comfort association

BCIT Residential HP Installation Lab

- Teaching lab designed and installed in 2022-23 based on industry feedback
- Focus on upskilling existing workforce - key gaps for residential heat pump installations
- Provide missing hand-on training to complement courses by TECA and HPSC

Residential Air Source Heat Pump Installation Skills

Which Trades are Suited to Take this Microcredential?

READY TRADES:

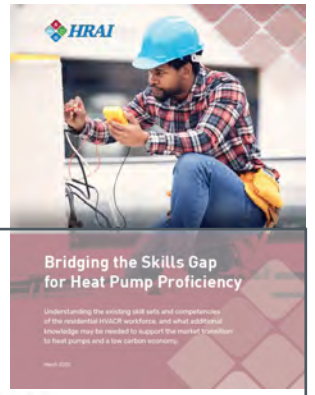
- Plumber
- Gasfitters
- Sprinkler fitters
- Sheet metal workers currently installing Part 9 HVAC systems

TRADES REQUIRING SUPPLEMENTARY TRAINING* FOR ENTRY READINESS:

- Sheet metal workers not currently installing residential HVAC systems
- Electricians
- Steamfitters/pipefitter not currently installing residential HVAC systems

** Supplementary training is noted to be required to develop trade competencies such as safety and foundational knowledge and skills for working with residential HVAC tools and equipment.*

Trade Competencies for Heat Pumps



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BCIT

Heat Pump Maintenance and Troubleshooting

MICROCREDENTIAL

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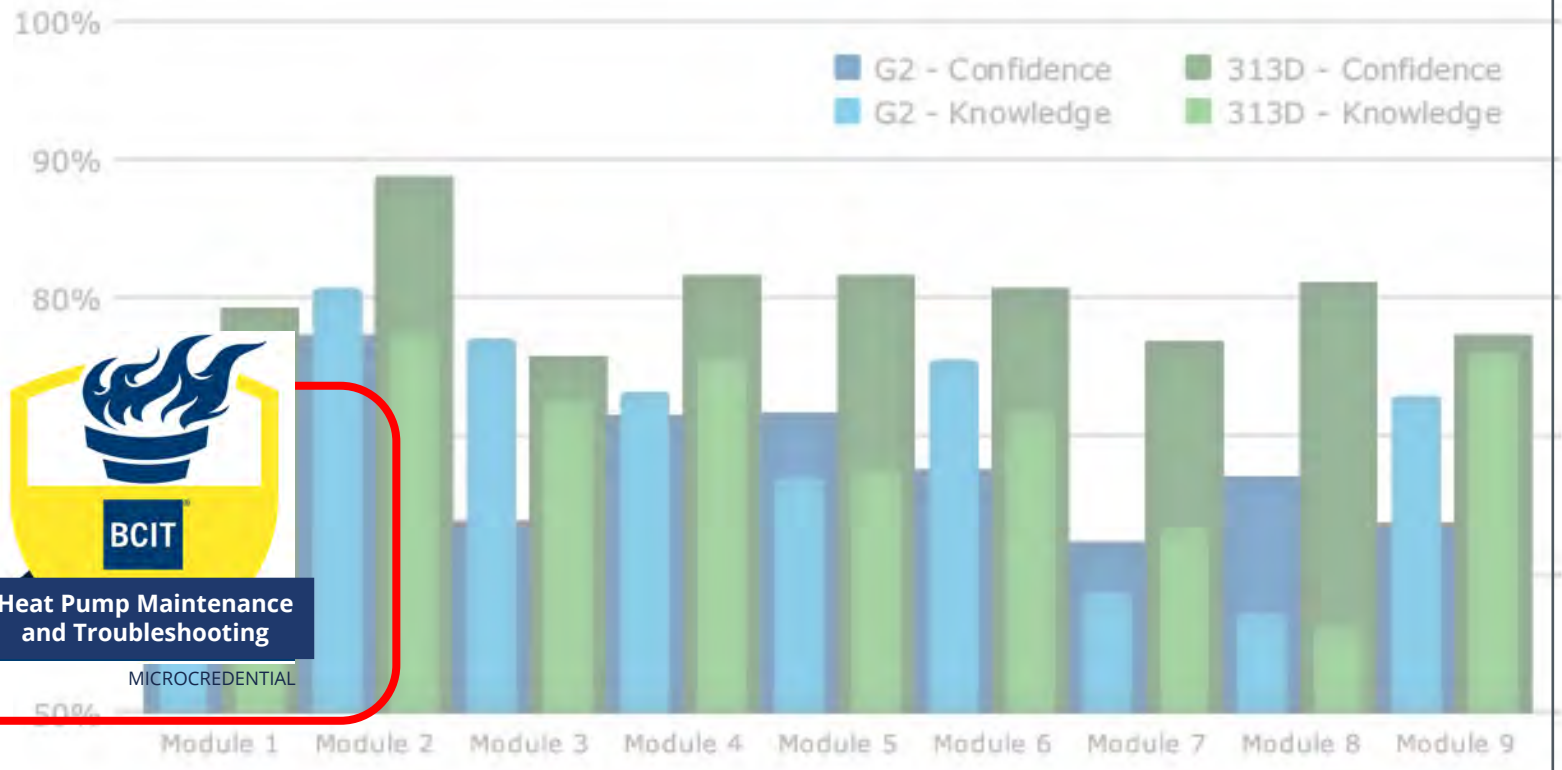


HRAI 2025. Bridging the Skills Gap for Heat Pump Efficiency

Immediate Upskilling & Microcredentials

- For Designers & Trades:
  - BCIT's **Residential Air to Air Heat Pump Specialist** – FALL 2025
- For Trades:
  - BCIT's **Heat Pump Maintenance and Troubleshooting** – Launch TBC
- For Owners / Operators:
  - BCIT's **Operating & Maintenance for Non-Trades Courses** –FALL 2025
  - BCIT's **Essentials of operating and maintaining heat pump systems for residential homeowners** – 2026

Medium-Long Term Certifications

- Options to be explored include:
  - New micro-credentials that provide the necessary upskilling and confirm qualifications to install and maintain residential HVAC systems with refrigeration equipment.
  - **New Residential Trade**
  - **Trade challenge pathways for existing workforce**
  - **Part 9 HVAC Designer certification**

What Building Officials Should Know

Addressing residential heat pumps today and in the future

Part 9 HVAC Roadmap Work

- HVAC Solutions Council (BOABC)
- Trades upskilling
- New permitting and enforcement discussions

Roadmap Summary

Action
HVAC Solutions Council
1. HVAC Solutions Council (HVAC SC)
Part 9 HVAC Design Licensing
2. Develop detailed *Part 9 HVAC Designer Licensing Framework* & subsequent licensing system
3. Require HVAC Design by Licensed Designer in HPCN
Trades' Capacity to Install & Service Future HVAC Systems
4. Review current Refrigeration & AC Mechanic Trade standards
5. Heat Pump Install Training & Credential Plan
6. Conduct study & documentation to support proposal for a Residential Credential
7. Formally propose a Residential Credential as part of RACM
8. Industry & Skilled Trades BC coordinate to evaluate the case for a Residential Credential
9. Increase in funding for credential development/expansion
Permitting & Enforcement
10. Best practice permitting & verification regime
11. HVAC permitting by AHJs
12. Refine options for province-wide processes
13. Consistent permitting and verification regimes, province-wide

For Building Officials Today

- Build your knowledge
  - Microcredential courses
  - Workshops/presentations
- Guide industry direction
  - Input into Part 9 HVAC Solutions Council
  - Working groups

Learning Opportunities for Building Officials Today

- **Participate in contractor upskilling programs**
  - Microcredentials
  - shorter presentations and training sessions
- **Request Building official-specific training through BOABC**
- **Join more industry events** (builders, contractors, designers, building officials)
- **Guide industry direction** (Part 9 HVAC Solutions Council, working groups
- **Use resources and training from HVAC Designers of Canada**

HVAC Designers of Canada

- HVAC Designers of Canada (HVAC DC) is a national association representing Heating, Ventilation and Air Conditioning (HVAC) designers across Canada.

- HVAC-DC focus is advocacy, market awareness, industry representation and support services with the goal of creating comfortable and efficient indoor environments in residential and small commercial (Part 9) buildings

Advocacy
Support and promote the growth of the HVAC design industry.

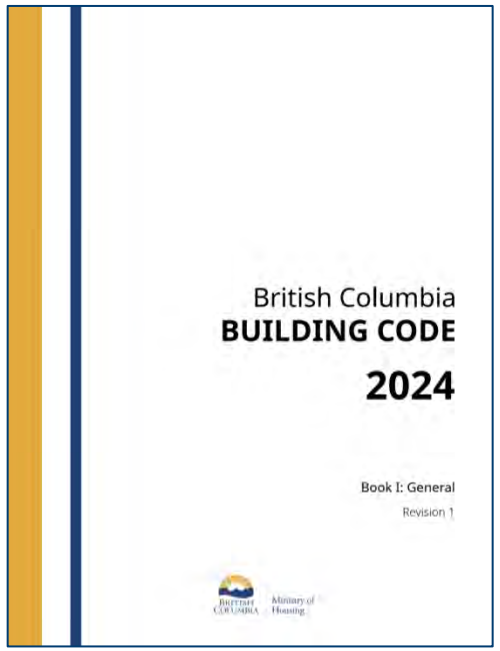
Capacity Building
Make HVAC services available to all Canadians.

HVAC DESIGNERS OF CANADA

Quality
Maintain and enhance the quality of HVAC design in Canada.

Industry Standards
Clarify and improve HVAC design standards.

Industry Support for F280 Adoption



- BC Building Code requires heating and cooling equipment to be sized using CSA F280-12 standard.

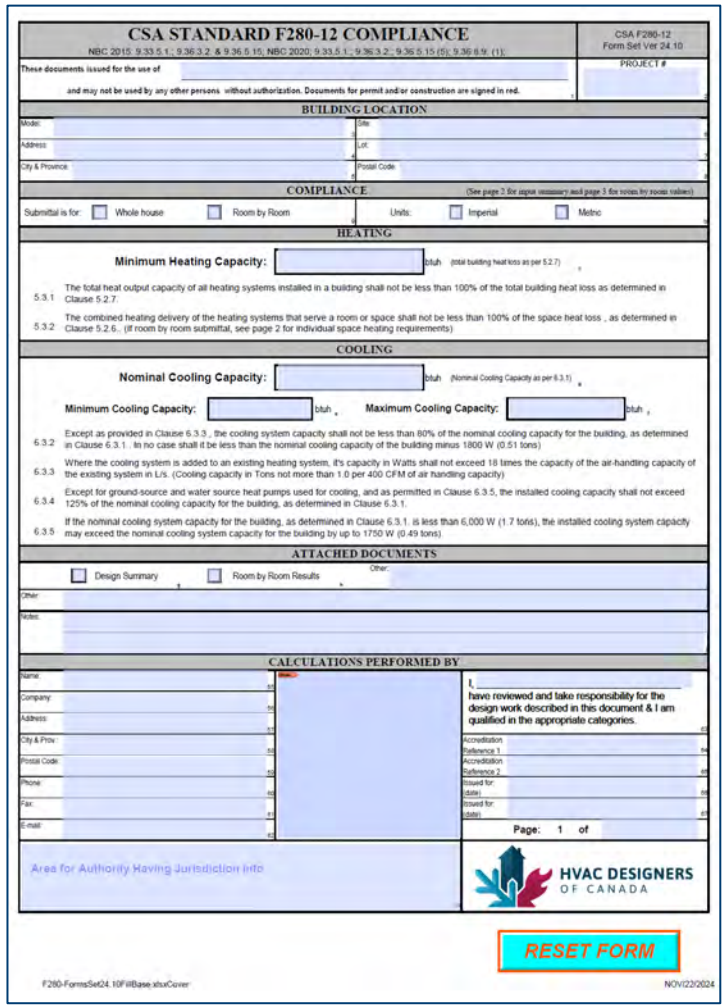
> **9.33.5.1. Capacity of Heating and Cooling Appliances**
>
> The **required capacity of heating and cooling appliances** located in a dwelling unit and serving only that dwelling unit, shall be determined in accordance with **CSA F280**, "Determining the required capacity of residential space heating and cooling appliances“ except that the design temperatures shall conform to Subsection 9.33.3.

- HVAC DC recognized that support was needed to increase industry adoption and improve compliance and verification practices with CSA F280-12.
  - **Action 1** – F280 Verified Software Tools
  - **Action 2** – Standardized F280 Reports
  - **Action 3** – HVAC Designer Registry
  - **Action 4** – Support Tools for Building Officials

Action 1 - F280 Verified Software

- HVAC DC has published a list of verified software tools that are compliant with CSA F280-12.
- Using verified software gives those who rely on the outputs from the software confidence that the tool can generate correct results in line with the CSA standard.
- Full listing of all F280 verified software available on HVAC DC's website: https://hvacdc.ca/f280-12software/

Action 2 - Standardized F280 Reports



CSA STANDARD F280-12 COMPLIANCE

NBC 2015: 9.33.5.1.; 9.36.3.2. & 9.36.5.15; NBC 2020: 9.33.5.1.; 9.36.3.2.; 9.36.5.15.(5); 9.36.6.9. (1);

CSA F280-12 Form Set Ver 24.10

These documents issued for the use of

and may not be used by any other persons without authorization. Documents for permit and/or construction are signed in red.

PROJECT #

BUILDING LOCATION

Model: Site:

Address: Lot:

City & Province: Postal Code:

COMPLIANCE (See page 2 for input summary and page 3 for rooms by room values)

Submittal is for: Whole house Room by Room Units: Imperial Metric

HEATING

Minimum Heating Capacity: btuh (total building heat loss as per 5.2.7)

5.3.1 The total heat output capacity of all heating systems installed in a building shall not be less than 100% of the total building heat loss as determined in Clause 5.2.7.

5.3.2 The combined heating delivery of the heating systems that serve a room or space shall not be less than 100% of the space heat loss , as determined in Clause 5.2.6.. (If room by room submittal, see page 2 for individual space heating requirements)

COOLING

Nominal Cooling Capacity: btuh (Nominal Cooling Capacity as per 6.3.1)

Minimum Cooling Capacity: btuh , Maximum Cooling Capacity: btuh ,

6.3.2 Except as provided in Clause 6.3.3 , the cooling system capacity shall not be less than 80% of the nominal cooling capacity for the building, as determined in Clause 6.3.1 . In no case shall it be less than the nominal cooling capacity of the building minus 1800 W (0.51 tons)

6.3.3 Where the cooling system is added to an existing heating system, it's capacity in Watts shall not exceed 18 times the capacity of the air-handling capacity of the existing system in L/s. (Cooling capacity in Tons not more than 1.0 per 400 CFM of air handling capacity)

6.3.4 Except for ground-source and water source heat pumps used for cooling, and as permitted in Clause 6.3.5, the installed cooling capacity shall not exceed 125% of the nominal cooling capacity for the building, as determined in Clause 6.3.1.

6.3.5 If the nominal cooling system capacity for the building, as determined in Clause 6.3.1. is less than 6,000 W (1.7 tons), the installed cooling system capacity may exceed the nominal cooling system capacity for the building by up to 1750 W (0.49 tons)

ATTACHED DOCUMENTS

Design Summary Room by Room Results Other:

Other:

Notes:

CALCULATIONS PERFORMED BY

Name: Company: Address: City & Prov: Postal Code: Phone: Fax: E-mail:

I, _____ have reviewed and take responsibility for the design work described in this document & I am qualified in the appropriate categories.

Accreditation Reference 1: Accreditation Reference 2: Issued for: (date): Issued for: (date):

Page: 1 of

Area for Authority Having Jurisdiction Info

HVAC DESIGNERS OF CANADA

RESET FORM

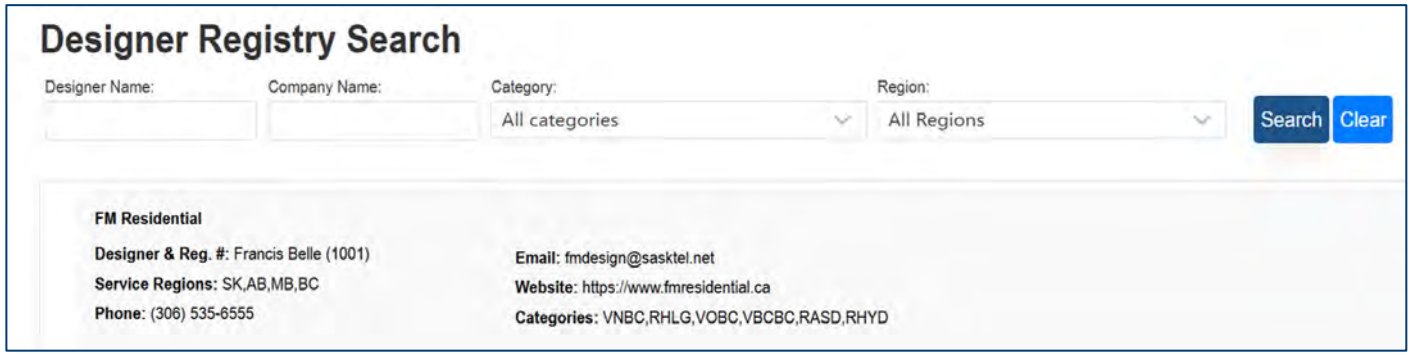
F280-FormsSet24.10FillBase.xlsxCover NOV/22/2024

- All verified F280 software providers have incorporated standard F280 submittal forms including summary of modeling inputs/outputs and attestation by the individual submitting the load calculation.
- Standardized F280 submittal forms improves the consistency of reporting to building officials to assist with compliance and verification.

Action 3 - HVAC Designer Registry

- HVAC DC publishes a list of accredited HVAC designers that possess the necessary skills, experience and training to provide HVAC design services. HVAC designer accreditations include residential load calculations, ventilation, forced air, and hydronic system design.

- Listing includes qualified designers across Canada with industry recognized training from TECA, HRAI, and/or post-secondary schools. All listed designers carry Professional Liability (Errors and Omissions) Insurance.



https://hvacdc.ca/designerregistrysearch/

Action 4 - Support for Building Officials

- HVAC DC is actively working with municipalities across Canada to address barriers with enforcement of F280-12.
- To improve compliance and verification, HVAC DC has developed procedures, templates, and tools to reduce the burden on building departments to require F280-12 compliant load calculations.
- Additionally, HVAC DC provides free membership to Building Officials to access resources to support F280-12 adoption.

Protection from Overheating in Dwelling Units

Information Bulletin

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BRITISH COLUMBIA
www.gov.bc.ca

No. B24-08
April 19, 2024

Protection from Overheating in Dwelling Units

This bulletin provides information about new provisions in the British Columbia Building Code (Building Code) 2024 related to minimizing the risks to health and safety due to overheating in dwelling units. These new Building Code 2024 requirements apply to projects for which a building permit is applied for on or after March 8, 2024. These changes apply to new dwelling units in all large (Part 3) and smaller (Part 9) residential occupancies.

Background

Recent extreme heat events in the summer of 2021 in British Columbia had devastating impacts, attributing to 619 deaths. Similar weather episodes are projected to become hotter, longer, and more frequent as B.C.'s climate changes.

In the Report to the Chief Coroner of British Columbia, titled "Extreme Heat and Human Mortality: A Review of Heat-Related Deaths in B.C. in Summer 2021" a recommendation was made to "...ensure that the 2024 release of the BC Building Code incorporates both passive and active cooling requirements in new housing construction...".

In response, the Building Code 2024 introduced a maximum design temperature limit for a single living space in each dwelling unit to minimize the risk to health and safety from overheating. Maintaining a safe temperature in a living space in each dwelling unit can involve a combination of mechanical cooling systems and passive design measures. The designated living space provides a place of reprieve for occupants of the dwelling unit from elevated temperatures, helping increase community resiliency and saving lives. The designer can designate a living space that makes sense for the circumstances of the dwelling unit (climate, configuration, building systems, etcetera), but it must be a living space that is designated. Unfinished basements, service rooms, and crawlspaces are not living spaces[1].

In addition, designers must coordinate the specification of space-conditioning equipment (as necessary) with energy efficiency requirements of the BC Energy Step Code. In some cases, mechanical equipment such as heat-recovery ventilators and heat pumps can be used to help maintain indoor design temperatures while also helping to meet energy efficiency targets.

[1] Article 9.33.3.1. of Division B describes living spaces distinctly from other spaces in residential buildings.

The contents of this Bulletin are not intended to be provided as legal advice and should not be relied upon as legal advice. The Building and Safety Standards Branch does not enforce compliance with the British Columbia Building Code. Local authorities are authorized to enforce the British Columbia Building Code through the Local Government Act and the Community Charter.

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- In April 2024, Building's Safety and Standards Branch released Information Bulletin No. B24-08 that provides information on new provisions in the BC Building Code 2024 related to minimizing the risks to health and safety due to overheating in dwelling units.
- Bulletin introduced a maximum design temperature limit of 26°C for a single living space in each dwelling unit to minimize the risk to health and safety from overheating
- Bulletin provided general information on requirements, and strategies with mechanical cooling systems and passive design measures, but it lacked the necessary industry guidelines on the technical considerations for complying with these new BCBC requirements.

Protection from Overheating in Dwelling Units

Guideline on Single Zone Cooling in Dwelling Units

Version 1.0a March 14, 2025

The BC Building Code (BCBC)-2024 introduced a maximum design temperature limit of 26°C for a minimum of a single living space in each dwelling unit. In April 2024, the Province of BC's Building's Safety and Standards Branch (BSSB) released Information Bulletin No. B24-08 that provides information on the new provisions in the BCBC 2024 related to minimizing the risks to health and safety due to overheating in dwelling units. Although the BSSB bulletin provided general information on requirements, and strategies with mechanical cooling systems as well as some passive design measures, it did not provide the necessary depth on the technical considerations to meet the BCBC 2024 requirements.

To address these concerns, HVAC Designers of Canada (HVAC DC) and the Thermal Environmental Comfort Association (TECA) together with stakeholders from the home building sector have developed a Guideline on Single Zone Cooling in Dwelling Units.

We thank the following individuals and organizations for their valuable contribution to the development of this Guideline.

Todd Backus,	Thermal Environmental Comfort Association
Dara Bowser,	HVAC Designers of Canada
Liam Butters,	Ecology Consulting
Sean Capstick,	City of Langford
Ryan Coleman	Ecolighten Energy Solutions
Chris Dawe,	Our Energy Consulting
John Harris	Heating Refrigeration & Air Conditioning Institute
Seamus Jones,	Natural Resources Canada, LEEP
Pete Koefgen,	Fortis BC
Wilma Leung,	BC Housing
Matt McMaster	City of Nanaimo
Rob Pope,	Ecolighten Energy Solutions
Pauline Rupp,	Canadian Home Builders Association of BC
Robin Sandilands,	Avenir Software
Scott Williams,	BC Building and Safety Standards Branch

This document was developed with financial support from Natural Resources Canada-LEEP, based on a CSA F280-12 Seed Document on single zone cooling.

BC Single Zone Cooling Guide Version 1.0a March 14/25 - 1 -

- HVAC DC and Thermal Environmental Comfort Association (TECA) together with stakeholders from the home building sector have developed a **Guideline on Single Zone Cooling in Dwelling Units**.

- Guideline covers detailed technical requirements for consistent standards of practices with F280-12 modeling, including:
  - Design temperatures
  - Cooling zone identification
  - Occupancy
  - Design temperature differences
  - Heat gain
  - Total sensible heat gain
  - Cooling system capacity
  - Compliance with Cooling Zone Design Summary

Discussion

What resources do you need to prepare you for the possible scenarios of increased permitting and inspections related to Part 9 HVAC systems?

Contact Us

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