

# Meeting the Demand – Small Solid Biofuel Combustors (SSBC) & Harmonization of Standards

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# Overview of main topics to cover

1. Existing standards and guidelines for SSBC
  - CCME Guideline for air emissions (Multi-residential & ICI)
  - CSA B415.1:2022 (Residential)
  - CAN/CSA-ISO 17225 solid biofuel grading standards
2. Upcoming proposal to address BPV trade barrier for SSBC
  - Overview of Issue
  - Stakeholder Feedback
  - Strategy and path forward (SSBC White Paper)
3. Future considerations for Provinces and Territories
  - Boiler and Pressure Vessel code & environmental regulations
  - Include SSBC in more Federal/Provincial/Territorial cost-share funding
4. Other resources and guides



# 1. Canadian Council of Ministers of the Environment



Canadian Council  
of Ministers  
of the Environment

Le Conseil canadien  
des ministres  
de l'environnement



Thunder Bay: college; wood chips; heat

## CCME Guidance Manual on Managing Air Emissions from Small Solid Biomass Combustors (2022)

- Used Ontario MECP Guideline A-14 as leading work in the sector in Canada
- Minimize impact of air emissions from solid biomass on human health and the environment.
- Setting a level playing field across Canadian jurisdiction for air emission and thermal performance 150 kW to 1 MW thermal output
- Provides "best-in-class" technical content for adopting modern SSBC by adopting EN 303-5 for air emissions and thermal efficiency in 2021
- Enables reductions in GHG emissions for rural heating systems (hard to decarbonize sector)

# 1. Residential Solid Biofuel Heating Appliances (logs, pellets, chips)



CSA B415.1:22 Performance testing of solid-biofuel-burning heating appliances



- In 2022, CSA B415.1 Performance testing of solid-biofuel-burning heating appliances was published
- Filling the "gap", Canadian National Building Code for residential installs of modern SSBC across Canada via building permit (local municipality, Section 9 of NBC)
- CCME Guidance Manual covers multi-residential, commercial, institutional and industrial (>150 kWth) SSBC only
- Recognized emissions and performance test conducted in EU accredited laboratories under ISO standards for EN303-5 certified SSBC for residential appliances from 50 to 150 kWth



# 1. CAN/CSA ISO-17225 Wood grading and classification standards



Natural Resources  
Canada

Ressources naturelles  
Canada

## Solid Biofuels Bulletin No. 2

# PRIMER FOR **SOLID BIOFUELS** DEFINITIONS, CLASSES/GRADES AND FUEL PROPERTIES

Origin, source, classes & grades  
and fuel properties for:

**“The objective of the ISO 17225 series is to provide unambiguous and clear classification principles for solid biofuels and to serve as a tool to enable efficient trading of biofuels, to enable good understanding between seller and buyer, and for communication with equipment manufacturers.”**

From ISO International Standard 17225-1: Solid Biofuels – Fuel Specifications and Classes

- Firewood
- Wood residues, by-products
- Briquettes (manufactured “logs”)
- Thermally treated (biocoal/biochar)
- Pellets
- Chips

## 2. Upcoming proposal to address BPV trade barrier for EU certified SSBC appliances – Overview of Issue

- SSBCs built in the European Union (EU) conform to the European Committee for Standardization (CEN) harmonized design standard **EN 303-5 Heating boilers - Part 5: Heating boilers for solid fuels, manually and automatically stoked, nominal heat output of up to 500 kW**
- SSBCs sold in Canada are required to meet certification set out in *the boiler, pressure vessel, and pressure piping code* developed by the CSA Group: B51:2019 standard and follow the Canadian Registration Number (CRN) framework for design registration.
  - CSA B51:2019 is based on an American standard and allows for binational trade with the United States of America (U.S.A.) for BPV.
- SSBC manufactured in the EU that want to sell in Canada must **redesign** the pressure vessel, access a **different materials supply chain**, **resubmit drawings** and have their **certification framework re-evaluated** all adding costs from 20 to 40%.



## 2. Upcoming proposal to address BPV trade barrier for EU certified SSBC appliances - Stakeholder Feedback

- The Regulatory Cooperation Forum (RCF) as outlined in the **Canada-European Union (EU) Comprehensive Economic and Trade Agreement (CETA)** has a mandate to address issues of regulatory cooperation between Canada and the EU, including through information-sharing and, where appropriate, regulatory alignment, and harmonization, including the alignment of standards.
- The European Commission, through Global Affairs Canada (GAC) and the Standards Council of Canada (SCC), has asked Canada to allow the import of small solid biomass combustors built to the EU standard.
- The current European-made SSBCs are **clean, efficient, safe, and reliable**. SSBC manufacturers in EU have indicated that it is cost prohibitive to meet CSA B51:2019 standard and is a duplication of certification consisting a Technical Barrier to Trade (TBT) under CETA.
- With the support of the European Commission, **Austrian SSBC manufacturers** built a relationship with the **Wood Pellet Association of Canada (WPAC)**, which represents Canadian wood pellet manufacturers.
  - **Early adopters of SSBC** in various Canadian jurisdictions, recognized that unlike Europe and other jurisdictions, Canada had many technical and regulatory barriers that have prevented the adoption of **low carbon heating technologies**.

## 2. Upcoming proposal to address BPV trade barrier for EU certified SSBC appliances – Strategy and Path Forward

### Strategy:

- A White Paper outlining the issues, opportunities and proposed path forward has been drafted in winter 2022 and shared with Standards Council of Canada (SCC), Global Affairs Canada (GAC) and Provincial and Territorial (P&T) jurisdictions concerning harmonization and reducing Technical Barriers of Trade (TBT) for SSBC.

### Main Proposal:

- Seek endorsement of the White Paper's recommended option to develop a new Canadian National Standard (CNS) by directly adopting the EU standard for SSBC appliances with Canadian deviations that would be in line with EU appliance standard and facilitate it's two-way trade between Canada and the EU. SCC is hosting a vote at the 84<sup>th</sup> PTAC meeting on September 26<sup>th</sup> 2023 to seek the support of P&T.

### Standard Development Organization:

- CSA Group has published a Notice of Intent on SCC's website to gather information from other SDO's on initiating the development of CSA B414 standard for certification of SSBC appliances.





### 3. Future considerations for Provinces and Territories

- Boiler and Pressure Vessel code:
  - Pending on upcoming vote, get P&T committed on adopting the proposed Canadian National Standard in their jurisdiction that references the EN303-5:2023 appliance standard for SSBC.
- Environmental and Air Quality regulations and approvals:
  - Recognize and adopt the CCME Guideline Manual and CSA B415.1:22 for air emissions for multi-residential, ICI and compact residential SSBC heating appliances respectively.
- Cost-share energy retrofits, GHG reduction and other business models:
  - Education and awareness of SSBC for Federal and P&T energy retrofit programs and/or support different business models.

Non-exhaustive list to date:

- QC Prime-Vert (residential) & OEE oil replacement program
- ON Wood Stove Exchange Program (including SSBC)
- NRCan's Indigenous Off-Diesel Initiative
- PEI & NS “heat contracts” for Institutional heating (MERX)
- NWT Arctic Energy Alliance – RE program



## 4. Other Resources and Guides

- **MNRF Bioheat Webinar Series, 2021, 6 sessions**

<https://cribe.ca/resources/bioheat-webinar-series/>

Ontario Ministry of Agriculture, Food and Rural Affairs

**MNRF Solid Wood Bioheat Webinar Series  
Session 3: Bioheat Combustion Technology**



Thursday, February 18, 2021  
11:00 am to 12:00 pm EST

Ontario 

A SOLID WOOD  
**BIOHEAT  
GUIDE**  
FOR RURAL AND REMOTE  
COMMUNITIES IN ONTARIO  
special publication SP-537E  
February 2020

- **FP Innovation & NRCan Bioheat Guide**

<https://cribe.ca/resources/bioheat-guide-brochure-en-fr/>

## 4. Other Resources and Guides



Ontario 

Newsletter sign-up: Khan, Zarin (MNRF) [Zarin.Khan@ontario.ca](mailto:Zarin.Khan@ontario.ca)



### Ontario Bioheat Initiative

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Provincial Collaboration to Advance the  
Use of Biofuels for Heat in Ontario

- Various Ministries in Ontario collaborating under the Forest Biomass Action Plan, lead by Ministry of Natural Resource and Forestry (MNRF)

<https://www.ontario.ca/page/forest-biomass-action-plan>

**Forest Biomass Program** – cost share closing September 29<sup>th</sup>, 2023

# Additional Resources

## Global Affairs 2021 update on SSBC

<https://www.international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/ceta-aecg/2021-11-26-biomass-biomasse.aspx?lang=eng>

## Environmental Impacts

• CCME 2021 Guideline (references EN303-5 for managing air emissions)

[https://ccme.ca/en/res/guidancemanualonmanagingairemissionsfromssbcs\\_en.pdf](https://ccme.ca/en/res/guidancemanualonmanagingairemissionsfromssbcs_en.pdf)

• CSA B415.1:2022 Performance testing of solid-biofuel-burning heating appliances

<https://www.csagroup.org/store/product/2701332/>

## Wood Based Biofuels

• NRCAN bulletins on ISO wood fuel standards: <https://www.nrcan.gc.ca/energy/energy-sources-distribution/renewables/bioenergy-systems/biofuels/solid-biofuels/7399>

## Forest Management and Laws in Canada

• NRCAN <https://www.nrcan.gc.ca/our-natural-resources/forests/sustainable-forest-management/canadas-forest-laws/17497>

What am I?

