

New CSA Biofuel Standards for Building Heat

Canada has the largest sustainably managed forests in the world and a vibrant forest industry sector that produces a variety of low-carbon products such as dimension lumber and cross-laminated timber panels. In the course of producing these high-value products, there are a variety of low-value residues also produced. In the past, much of this residual resource has been sent to pulp mills and, more recently, to wood pellet manufacturing plants, while some of it was (and is) simply burned outdoors in open piles.

In order to support the sustainability goals of maximizing the use of these residues, there has been a growing trend in converting this underutilized resource into solid woody biofuels (including the aforementioned wood pellets) for use in residential, commercial, and institutional applications that are typically smaller than what has been seen in the traditional forest industry sector. The most common smaller scale applications in Europe are the use of biofuels in heating and Combined Heat and Power (CHP) systems. In many cases, the project participants involved with these smaller applications, primarily intended to transition from fossil fuels to renewable fuels, have had little to no exposure to biofuels in the past. To assist with this transition, CSA Group's Mirror Committee to ISO Technical Committee 238 has adopted the ISO 20023 and ISO 20024 standards as Canadian standards to support the safe handling and storage of solid biofuels. These standards apply to smaller applications and can be used to support project development and overcome this lack of exposure.

CSA ISO 20023 and CSA ISO 20024 provide principles and requirements for the safe handling and storage of solid biofuels in residential, commercial, institutional, and light industrial applications. Examples of these applications include:

- Single building heating (e.g., multi-residential apartment or condominium)
- District heating (e.g., several houses or buildings close together on a common loop)
- Warehouses
- Retail
- Hotels and conference centres
- Schools, colleges, and universities
- CHP

Specifically, the CSA ISO 20024 standard applies to solid biofuel storage facilities from 100 tonnes (typical large commercial and district energy) to 1000 tonnes (industrial plants) but includes principles that can be used in smaller commercial and institutional applications, such as:

- Solid biofuel production plants (i.e., chips, pellets) from the finished production until loaded for transportation;
- Commercial distributors from the receiving station until loaded for transportation to the end-user; or
- At the end-user facility receiving station up to final utilization (i.e., boiler, value-added).

The CSA ISO 20024 Standard takes a risk-based approach to providing important guidance to facility owners, logistics providers, equipment suppliers and manufacturers, consultants, authorities, and insurance providers to assess and mitigate risk. The document also includes guidelines on a variety of safety measures when dealing with solid biofuels.

More information on the CSA ISO 20024:21 Standard is available on the [CSA Store](#).

Canada is an active member of all working groups within the ISO Technical Committee 238 on Solid Biofuels and is leading some of the work being done on the physical and mechanical properties of solid biofuels as well as the safety in production, storage, and handling of solid biofuels.

The next international meeting of ISO/TC 238 is scheduled to take place in Vancouver on May 16-20, 2022. The Canadian Mirror Committee to ISO/TC 238, managed by CSA Group, welcomes participation from individuals to support the development of standards ensuring they are reflective of Canadian interests in the global solid biofuels industry. Please contact Anahita Jami, Fuels & Appliances Project Manager (anahita.jami@csagroup.org) at CSA Group if you are interested in joining the committee or participating in the international meeting.