

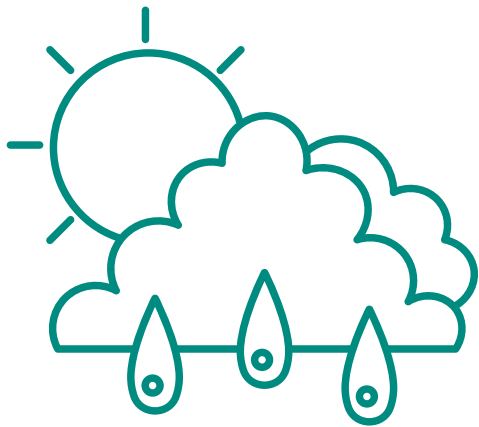


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# Why is CSA 61400-2 Important for Canadians?

## What is CSA 61400-2?

CSA 61400-2 is a Canadian standard that applies to small wind turbines, specifically the turbine itself. This standard specifies the requirements for the turbine's safety under normal and extreme conditions.



### Climate Factors

Turbines are required to withstand abnormal temperatures of at least  $-20^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ . Other external conditions that turbines must endure are humidity, air density, precipitation, and solar radiation.

## What does CSA 61400-2 Regulate?

CSA 61400-2 sets a standard for the turbine's protection, electrical, and mechanical systems.



### Extreme Wind Conditions

A turbine's structural integrity must withstand extreme wind loads, such as sustaining a wind speed of 151 km/h or more, wind gusts, and rapid changes in wind direction.



## Protection Systems

A turbine protective system is required to ensure that all components do not exceed designed load limits. However, if loads limits are exceeded systems are required to stop or limit the blade's rotation.



## Electrical System

A turbine's electrical system must include protective devices against malfunctions and failures. A surge protection device and grounding system ensure protection against lightning and overvoltage's.

## Testing

This standard implements testing as a key success factor in turbine development and safety. The tests are used to verify or obtain data such as design power, voltage, and maximum rotational speed.

## Benefits of CSA 61400-2

- It ensures that small wind turbines will provide an appropriate level of protection against external hazards.
- Any turbine meeting this standard will survive Canada's abnormal and extreme weather.
- The standard ensures that faults or failures in the system will be handled safely.

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