Do I need an EPA certified or CSAB415.1-10 certified heater?

You first have to identify what your needs are. If you are looking for ambiance, a temporary heat source in a cottage or a camp, or a simple back-up heat source in case of power failure, you do not necessarily need to invest more money in order to buy an EPA or CSAB415.1-10 certified wood heater. However, if your goal is to heat on a regular basis, the extra dollars will prove to be a good investment. Furthermore, it must be noted that certified heaters release up to 90% less particles into the atmosphere, which makes wood a renewable and clean source of heat. As a result, if the style and size of the heater you are looking for is available in a certified version, it is highly recommended that you invest in this advanced combustion technology. You will help the environment and reduce your wood consumption by up to 30%.

NOTE: If you live in the United Sates, British Columbia, Ontario, Quebec, Nova Scotia, New Brunswick or Newfoundland, EPA certified wood heaters are mandatory. Exceptions apply for certain categories of products, such as decorative fireplaces. Certain municipalities may also have by-laws that require the installation of an EPA or CSAB415.1-10 wood heater, even though the province does not have an official regulation on wood heating. It must also be noted that in Canada, the CSAB415.1-10 Standard is equivalent to the EPA Standard. A wood heater that meets this Standard will generally comply with the regulation in place.

How do I determine the size of heater I need and where should I install it?

Before answering this question, it is very important that you clearly identify what your needs are. Some people will buy a heater simply to enhance the ambiance of a room, while others will buy a heater as their main source of heat. There is no good or bad reason for buying a wood-heat system. If you simply want to enhance the ambiance of a room, most small to medium size heaters will suit your needs. Simply chose the style you like best, and put the unit in the room where you spend the most time. The heat and look of a glowing fire will create an atmosphere of warmth and coziness.

If your primary need is to heat, you must verify the heating capacity of your heater based on the technical data provided by the manufacturer. For instance, if you want to heat an 800-square-foot area on one floor, you need to buy a heater with a minimum capacity of 800 sq. ft.

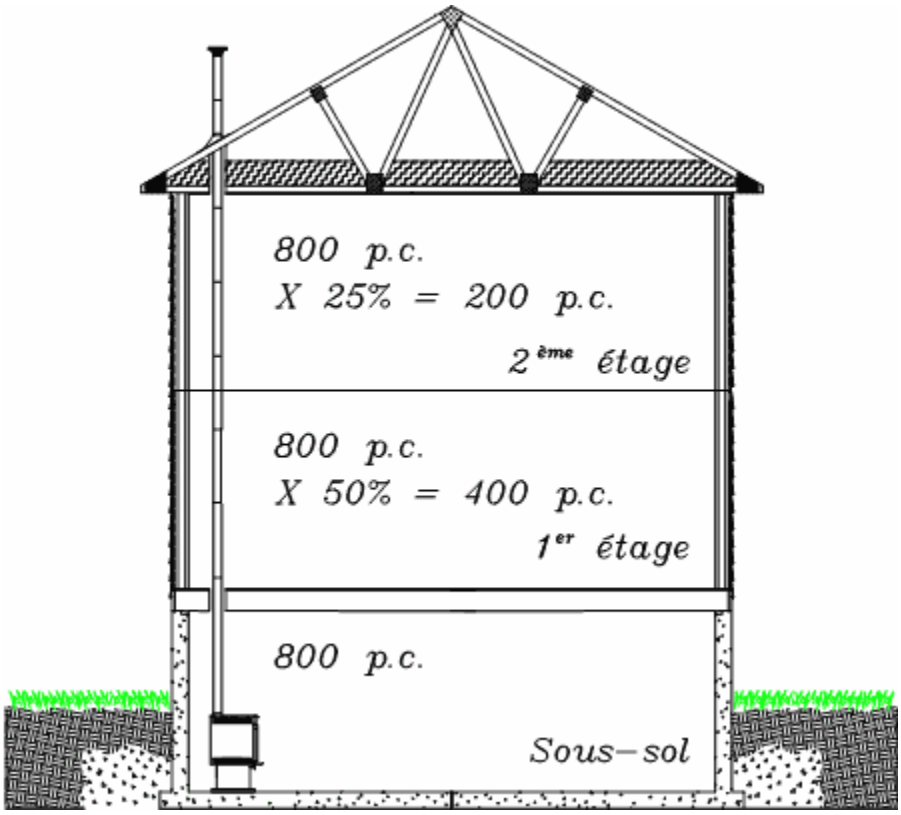
If you need to heat more than one floor, keep in mind that heat rises. Therefore, a heater located in your basement will help you heat the main floor as well. However, the contrary is not true; a heater located on the main floor (ground floor) will not heat the basement. Keep in mind also that the more divisions there are in the house, the harder it will be to distribute the heat evenly.

If you need to heat two floors, calculate the surface of the lower floor. Then, add 50% of the surface of the upper floor. For instance, if you install a wood-heating system in the basement

and you have 800 sq.ft., you will need a heater with a minimum capacity of 1,200 sq.ft. (800 + 400 = 1,200.

If you need to heat more than two floors, calculate the surface of the lower floor (where the wood-heating system is located). Then, add 50% of the surface of the middle floor, and 25% of the surface of the upper floor. For instance, if you install a heater in the basement and you have 800 sq.ft., you will need a heater with a minimum capacity of 1,400 sq.ft. (800+400+200= 1,400). Consult the drawing below. It will help you understand the explanations provided in this section.

REMEMBER: We are talking about "zone" heating, not central heating. The room where the heater is located and the rooms directly above it will always reach higher temperatures than the rooms distant from the unit. If you want an even temperature throughout the house, you need to consider a central heating system, such as a warm air wood furnace. Furthermore, you must keep in mind that the size of the heater you need may vary based on the insulation of your house, its exposure to wind, and the number of windows. It will always be prudent to buy a heater with a capacity that is slightly higher than the minimum capacity that you need. For instance, if you need a minimum capacity of 1,400 sq.ft., it will be more prudent to buy a heater with a capacity of 1,600 sq.ft., if not 1,800 sq.ft. There are three main advantages in buying a larger appliance: the increased heating capacity, the ease of loading more and larger logs (as a result of the greater firebox volume), and the increased combustion time (given the higher loading capacity).



Why is the efficiency as per the EPA's test data smaller than the publicized optimum efficiency?

EPA refers to the CSAB415.1-10 standard for the calculation of the appliance's efficiency. The efficiency reported as per EPA's directives consists of an average between four different burn rates, ranging from the lowest burn rate (air intake completely closed) to the highest burn rate (air intake completely open). The optimum efficiency that we publicize is the efficiency obtained according to the same test data, but for the low burn rate only. This efficiency is more realistic for a majority of users whose heating needs require that the unit be used to maximize burn times.

Does my heater qualify under the LEED program?

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ encourages and accelerates global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria. LEED is a third-party certification program and an internationally accepted benchmark for the design, construction and operation of high performance green

buildings. It provides building owners and operators the tools they need to have an immediate and measurable impact on their buildings' performance.

The Canadian Green Building Council (CGBC) certifies LEED projects. The Certification is based on the total point score achieved, following an independent review and an audit of selected Credits. With four possible levels of certification (certified, silver, gold and platinum), LEED® is flexible enough to accommodate a wide range of green building strategies that best fit the constraints and goals of particular projects. The Canadian rating systems are an adaptation of the US Green Building Council's (USGBC) LEED Green Building Rating System, tailored specifically for Canadian climates, construction practices and regulations. The rating systems are adapted to the Canadian market through an inclusive process that engages stakeholders and experts representing the various sectors of the Canadian industry.

Wood or pellet stoves, fireplaces, and inserts can qualify under LEED and obtain up to one point provided that they meet the following criteria.

Why doesn't my heater produce enough heat?

Possible causes and solutions:

1- The moisture content of your wood is too high.

Solution: Make sure you use good, seasoned wood. The wood you burn plays an important role in the overall performance of your heater. Your wood should have been properly dried for about one year. Furthermore, it is better to use hardwood, such as oak, maple, beech, or ash. For the same volume, hardwood will produce more heat. Storage is also very important. Wood that has been cut for one, two or even more years, will not necessarily be dry if it has been stored in poor conditions. Under extreme conditions, it may have rotted instead of drying. Smaller pieces of wood will dry faster. The wood should be stored in a place where the grass is not too long, and where the wind will be able to circulate between the logs. A 12-inch gap should be kept between the cords. The wood should be placed in the sunniest area and should be protected from the rain and snow on top, but not on the sides. Use a moisture reader to measure the moisture content of your wood. Ideally, it should be below 25%.

2- The air control mechanism is not open enough.

Solution: Adjust the air control mechanism in order to keep the flue temperature within the comfort zone (between 250 °F and 475 °F) on your chimney thermometer. The air control mechanism must always be closed gradually. You need to obtain a good bed of red embers and the logs must be completely lit up before you close the air control completely. This can easily take up to one hour.

3- The logs that you are using are too big.

Solution: Use smaller pieces of wood and place them to allow proper air circulation between the logs. The same weight of wood cut in many small pieces will produce more heat than fewer, larger logs. Only add big logs when you have a good bed of red embers. Logs with a diameter exceeding 6 inches should always be split. Avoid stacking logs to the top of the firebox.

4- The chimney draft is too weak.

Solution #1: In many cases, a weak draft is simply due to insufficient heat in the exhaust system. Build a small, intense fire, and leave the door ajar (never leave the heater unattended). Before inserting larger logs, use dry kindling to obtain a good bed of red embers. Gradually increase the size of the logs. Close the unit's door when you reach a flue temperature of approximately 475 °F on the chimney thermometer. Leave the air intake fully open for approximately 15 minutes. Then, gradually close the air intake control. Note that there is no danger in letting the temperature inside the flue reach approximately 700 °F during the start-up. This is even favorable in order to properly start your heater. You must, however, avoid maintaining excessive temperatures (above the comfort zone on your thermometer) during a long period of time. Your chimney thermometer should be positioned on the exhaust pipe, approximately 18 inches above the unit.

Solution #2: Your heater may not have all the oxygen it needs to allow for a sufficient draft. You first need to ensure that the room where the heater is located is sufficiently large and well ventilated. Open the nearest window by approximately 2 inches. If you notice a significant improvement, it is a sign that the unit needs more oxygen. The room may be too insulated or too small. Without an additional source of oxygen, the draft will remain weak and cause the glass stay dirty.

Solution #3: The chimney may be too short. In order to obtain a sufficient draft, your chimney must have a minimum height. Twelve feet (from the heater to the chimney cap outside the house) is a minimum. A height of 15 feet or higher is ideal.

Solution #4: Your exhaust system may be too restrictive or may lack a sufficient rise. Ideally, your exhaust system should not have more than one 90° elbow. Furthermore, all horizontal sections should be as short as possible and have a minimum slope of ¼" per foot.

Solution #5: Your exhaust system may be oversized. When your chimney is oversized, the volume of air that needs to be warmed-up is larger. It is therefore difficult to reach temperatures that will allow for a sufficient draft. Most advanced combustion systems (those certified to EPA/CSAB415.1-10) have a 6" flue outlet (152 mm). If your exhaust system does not have a 6" diameter, a solution is to insert a stainless liner with a 6" diameter inside the exhaust system.

If you have verified all the points mentioned above and your heater works fine, but still does not produce enough heat, you may be asking for more than what your appliance can realistically give you.

Stoves, fireplaces, and inserts are used for "zone heating”. It is normal that the heat is distributed unevenly inside your home. It will always be colder in the rooms that are distant from the heater. Furthermore, since heat rises, a heater located at the ground-floor level will not heat your basement.

Solution 6: It is possible to increase heat circulation between the floors by installing floor traps. The location of your heater is also important. Try to install it in a central location. If you want to heat both your basement and the ground floor, install your heater in the basement. The heat will rise to the upper floors. Verify that the area you try to heat respects your appliance’s heating capacity. Your appliance’s heating capacity can be found on the printed literature, in the owner’s manual, or in the technical data section on our web site. Keep in mind that your appliance's heating capacity assumes optimum conditions. It may be too low in situations where a house is poorly insulated, or highly exposed to wind. If you already have an appliance with a high heating capacity that works normally but does not heat enough, you probably need a central heating system, such as a warm air wood furnace.

Why does the fire go out when I close the loading door?

Possible causes and solutions:

1- The moisture content of your wood is too high.

Solution: Make sure you use good, seasoned cord wood. The wood you burn plays an important role in the overall performance of your heater. Your wood should have been properly dried for approximately one year. Storage is also key. Wood that has been cut for one, two or even more years will not necessarily be dry if it has been stored in poor conditions. Under extreme conditions, it may have rotten instead of drying. Smaller pieces of wood will dry faster. The wood should be stored in a place where the grass is not too long, and where the wind will be able to circulate between the logs. A 12-inch gap should be kept between the cords. The wood should be placed in the sunniest area and should be protected from the rain and snow on top, but not on the sides. Use a moisture reader to measure the moisture content of your wood. Ideally, it should be below 25%.

2- The air control mechanism is not open enough.

Solution: Adjust the air control mechanism in order to keep the flue temperature within the comfort zone (between 250 °F and 475 °F) on your chimney thermometer. The air control mechanism must always be closed gradually. You need to obtain a good bed of red embers and the logs must be completely lit up before you close the air control completely. This can easily take up to one hour.

3- The logs that you are using are too big.

Solution: Use smaller pieces of wood and place them to allow proper air circulation between the logs. The same weight of wood cut in many small pieces will produce more heat than fewer, larger logs. Only add big logs when you have a good bed of red embers. Logs with a diameter exceeding 6 inches should always be split. Avoid stacking logs to the top of the firebox.

4- The chimney draft is too weak.

Solution #1: In many cases, a weak draft is simply due to insufficient heat in the exhaust system. Build a small, intense fire, and leave the door ajar (never leave the heater unattended). Before inserting larger logs, use dry kindling to obtain a good bed of red embers. Gradually increase the size of the logs. Close the unit's door when you reach a flue temperature of approximately 475 °F on the chimney thermometer. Leave the air intake fully open for approximately 15 minutes. Then, gradually close the air intake control. Note that there is no danger in letting the temperature inside the flue reach approximately 700 °F during the start-up. This is even favorable in order to properly start your heater. You must, however, avoid maintaining excessive temperatures (above the comfort zone on your thermometer) during a long period of time. Your chimney thermometer should be positioned on the exhaust pipe, approximately 18 inches above the unit.

Solution #2: Your heater may not have all the oxygen it needs to allow for a sufficient draft. You first need to ensure that the room where the heater is located is sufficiently large and well ventilated. Open the nearest window by approximately 2 inches. If you notice a significant improvement, it is a sign that the unit needs more oxygen. The room may be too insulated or too small. Without an additional source of oxygen, the draft will remain weak and cause the glass stay dirty.

Solution #3: The chimney may be too short. In order to obtain a sufficient draft, your chimney must have a minimum height. Twelve feet (from the heater to the chimney cap outside the house) is a minimum. A height of 15 feet or higher is ideal.

Solution #4: Your exhaust system may be too tortuous or may lack a sufficiently steep slope. Ideally, your exhaust system should not have more than one 90° elbow. Furthermore, all horizontal sections should be as short as possible and have a minimum slope of 1/4" per foot.

Solution #5: Your exhaust system may be oversized. When your chimney is oversized, the volume of air that needs to be warmed-up is larger. It is therefore difficult to reach temperatures that will allow for a sufficient draft. Most advanced combustion systems (those certified to EPA/CSAB415.1-10) have a 6" flue outlet (152 mm). If your exhaust system does not have a 6" diameter, a solution is to insert a stainless liner with a 6" diameter inside the exhaust system.

Why is the BTU according to EPA test data smaller than the one advertised?

You will notice a difference between the BTU output as per the EPA's test data and what is advertised on the web site and/or product literature. The maximum BTU output advertise is what

will be obtained with a full load of seasoned cordwood inserted inside the firebox. The EPA output, on the other hand, is what has been obtained during emissions testing. The EPA test procedure requires that a special type of wood is used and positioned inside the firebox in a manner that does not represent the way the firebox volume would normally be utilized using seasoned cordwood. The EPA test load is typically much smaller. Hence, the BTU as per the EPA's test data is reduced. The BTU output that should be considered by a normal user is the one we advertise for seasoned cordwood.

What burn time will I get from my wood heater?

The combustion time for an EPA or CSAB415.1-10 certified, non-catalytic wood appliance depends on many factors, the most important being the size of its firebox. Heaters with a 2.0 cubic foot firebox or more will normally have longer burn-times. From 6 to 8 hours is about the burn time you will get. Some companies will advertise longer burn times, but be careful, this calculation is made from the time you light the fire to the time there is absolutely no combustible left into the firebox. No matter what the appliance model is, the maximum BTU output will be obtained over approximately 33% of the total burn cycle. This represents 2 to 3 hours for a medium-size stove. So realistically, you will have to reload the unit every 3 or 4 hours in order to get the maximum heat out of your appliance when you are home. If you don't reload the heater and let it burn the remaining fuel, your output will slowly decrease until there is no useful heat left to produce (we call this the "tail end" of the combustion cycle). This "tail end" will provide heat for another 4 to 5 hours. So if you are looking for a 6 to 8-hour burn time, make sure you choose an EPA or CSAB415.1-10 certified wood heater with a BTU output (using cordwood) of 60,000 BTU or more. Appliances with that kind of output all have fairly large fireboxes. If you are going to rely mostly on wood for heating and your house has more than 2,000 square feet, do not hesitate to choose one of our larger units (>85,000 BTU). Those appliances will have a burn time of approximately 8 to 10 hours.

Will my insert work in the case of a power failure?

Your insert can be used in a power failure. An insert is built like a wood stove. The only thing that will not work in a power failure is the blower. Operating your insert without the blower will not damage the unit. The disadvantage is that you will not benefit from the heat circulation around the insert's jacket. Inserts come with a blower because a large portion of the unit is inserted into a masonry opening. The heat that radiates from the portion of the firebox inserted into the masonry hearth does not reach the room as it would with a freestanding wood stove. This is why inserts have a jacket built around the back portion of their firebox. The heat is trapped inside that jacket and is pushed back in front of the stove and into the room with a blower. Without electricity, you will not recover as much heat from the unit. The radiating heat will come mainly from the glass and the front portion of the insert.

What is the advantage of installing a wood insert into a masonry fireplace?

An insert is a specially designed appliance intended for installation into a masonry fireplace. Inserts are used to convert conventional masonry fireplaces into effective heating systems. The insert firebox is surrounded by an outer shell. Room air flows between the insert body and the outer shell where it is heated before being returned to the room by natural convection or transferred mechanically. Most of the heat is delivered to the room instead of being trapped behind the insert in the masonry structure. A decorative faceplate covers the space between the insert and the fireplace opening.

Why does my wood insert blower not move a lot of air?

All of our inserts and blowers are designed to complement each other. It is a matter of achieving the greatest amount of heat transfer from the unit. The key is to design the insert so air can move and extract the greatest amount of heat without cooling the firebox and hindering the efficiency of the unit. If the blower velocity were to be increased, it would give the impression that the unit heats more. However, it would actually blow cooler air and reduce the unit's efficiency. A hot firebox will burn better and cleaner. A slower but hotter air displacement is therefore always preferable. The same principle applies to the heat sensor available on many models. It is better for the heat sensor to activate the blower later, when the unit is very hot, rather than activating it too early and blow cooler air when the unit is still completing its start-up phase.

Can I install a liner with a 5-inch or 5.5-inch diameter?

All of our inserts are designed to function with a 6" liner. However, it is adequate to install a 5" or 5.5" liner when the masonry chimney is too tight for a 6" liner. Under certain conditions, the probability of a drafting issue is increased, which could favor smoke spillage and/or reduce combustion quality. But generally speaking, the vast majority of homeowners who properly install a 5" or 5.5" liner and use good heating techniques will be very satisfied with the performance of their wood insert.