

***Is it time to look into  
replacing your home heating and or cooling equipment?***

# Heating & Cooling Efficiencies

FOR  
**HOMEOWNERS**

**A Reference for  
HOMEOWNERS!**

*How to understand  
heating and cooling  
efficiencies without  
going crazy!*



**D&L MECHANICAL**  
Heating & Air Conditioning



## Is it time to look into replacing your home or office heating and or cooling equipment?

You ever notice that the terms HVAC professionals use are a bunch of acronyms, confusing as heck, and tough to understand? While they may sound like Spanish or Pig Latin to begin with, it does make sense that you understand HVAC energy efficiency ratings.



**A little bit of in-depth understanding really goes a long way in helping you make informed decisions about your purchase, and helps you pick the best possible system for your needs.**

Needs are different in the home than the office. The type of HVAC systems needed in northern states will differ from southern states. With a basic understanding of these efficiencies you can make the correct choice and end up saving quite a few dollars when you understand exactly what each product offers and how well it fits with your unique requirements.

### **What is an energy efficient home?**

Energy efficient homes reduce unnecessary energy consumption, greenhouse gas emissions and demands for nonrenewable resources. They simultaneously provide healthier living conditions and offer homeowners significant money savings over conventional homes.





## List of Different Energy Efficiency Ratings

A few parameters are important to evaluate during the purchase of equipment such as air conditioners and heat pumps, and these include:

# SEER - Seasonal Energy Efficiency Ratio

SEER is the measure of energy efficiency of cooling equipment. It is calculated by dividing cooling output (measured in BTU or British Thermal Units) by electricity usage (measured in kilowatt-hours). In other words, it indicates the electrical input that is needed to run the air conditioner over a season, compared to the amount of cooling that it generates in a real-time environment.



*Now, how about terms we can understand?*



**JARGON FREE ZONE**

**The higher the SEER rating, the more efficient the cooling equipment.**

If you are living in a state in which you use your air conditioner much of the year, like southern states, you should put serious thought into getting the highest rated unit your budget allows. This will allow you to save money monthly over a lower SEER unit.



## List of Different Energy Efficiency Ratings

### EER - Energy Efficiency Ratio

EER is measured over higher temperatures and over a period of time, to evaluate the operating efficiency of a cooling unit. EER is arrived at by dividing the output cooling energy by input electrical energy (measured in BTU and kilowatt hours respectively).

*Huh? What the heck is the difference between SEER and EER?*



**While SEER and EER are both displayed on cooling units, the actual measuring of these is different.**

The "S" in SEER stands for seasonal. That means it takes into account a variety of temperatures throughout the year to arrive at that rating. An EER rating is measured at one temperature, 95 degrees F. In other words, EER is the efficiency you can expect at peak cooling times during the summer.

So which one do you pay attention to? The U.S government only mandates that air conditioners display SEER. Since that accounts for an overall average, it's best to pay more attention to SEER when deciding on an air conditioner.





## List of Different Energy Efficiency Ratings

# HSPF - Heating Seasonal Performance Factor

Just as SEER and EER help measure the cooling efficiency of a unit, HSPF helps measure the heating efficiency. This efficiency measure is used for heat pumps. Heat pumps provide cooling in summer and heating in winter. HSPF is calculated pretty much on the same lines as SEER and EER, and is essentially the ratio of total heating needed divided by the total electricity utilized by the heat pump. Just as a higher SEER indicates greater cooling efficiency, a higher HSPF value indicates better heating efficiency.



*Can you tell me so I understand what it means?*

**The higher the HSPF, the more efficient the performance of your heat pump.**



Heat pumps in most parts of the country run year round. When determining if a higher-efficiency heat pump is cost-effective for your budget, you should evaluate how long you intend to live with your new heat pump. Your anticipated length of home ownership may help to determine how long it would take to recuperate initial costs of a higher HSPF model heat pump.



## List of Different Energy Efficiency Ratings

# AFUE - Annual Fuel Utilization Efficiency

During the process of converting fuel (gas) into heat energy, some percentage of energy is always lost in that conversion. AFUE basically measures the efficiency with which a certain fuel transforms into heat. A higher AFUE rating means that more heat energy is produced, and conversion losses are minimal. A decrease in fuel losses only means more dollars saved!

*What does this actually mean for my home?*



### Most of us have heard of a 80% furnace right?

These furnaces are the lowest costing, but the least efficient. The reason they are called 80% is that only 80% of the fuel is converted in heat. In other words, 20% of the fuel is wasted during conversion.

90% efficient or better furnaces waste less during conversion. Some furnaces actually achieve 98% efficiency and waste visually nothing!

**How does a more efficient furnace help you save money?** It's simple. Your home or office needs a certain amount of heat to keep it at the optimum temperature. Let's say your home needs an output of 80,000 BTU's of heat to keep that temperature. If you installed an 80% efficient furnace, it would need to input 100,000 BTUs to output that 80,000. If you installed a 90% furnace, it would only need to input 90,000 BTU's to get an output of 80,000. That is a difference of 10,000 BTU's, which are your savings!



## List of Different Energy Efficiency Ratings

# Energy Star

Energy Star is a program run by the U.S. Environmental Protection Agency and U.S. Department of Energy that promotes energy efficiency. Energy Star provides information on the energy consumption of products and devices, using standardized methods.

A cartoon illustration of a man with a beard and brown hair, wearing a blue button-down shirt, with his hand on his chin in a thinking pose. He is set against a yellow circular background.

*What makes a product  
Energy Star?*

**ENERGY STAR products are the same or better than standard products, only they use less energy.**

To earn the ENERGY STAR, they must meet strict energy efficiency criteria set by the US Environmental Protection Agency or the US Department of Energy. Since they use less energy, these products save you money on your electricity bill and help protect the environment by causing fewer harmful emissions from power plants. And you get the features and quality you expect.

The ENERGY STAR label guarantees significant energy savings. ENERGY STAR appliances do not cost any more than standard appliances. Compared to same-year, non-certified models, ENERGY STAR products **can save over \$100 a year.**





## List of Different Energy Efficiency Ratings

### Government Requirements

The government has laid down standards for energy efficiency of products. The SEER rating was expected to be minimum of 10 prior to 2006 and was subsequently revised to 13 and 14 in 2006 and 2015 respectively. EER is expected to be a minimum of 10, with the exception of a few states.

There is some variation in the required SEER and EER values depending on the location. For the State of California, government guidelines specify that a bare minimum value of SEER 14 and EER 11 must be maintained for air conditioning units. While these are the bare minimum values, efficient energy systems have SEER values in the range of 20-28 and EER in the range of 12-16.

*What does this actually mean for my home?*



#### What does this actually mean for my home?

Government regulations generally are to increase energy efficiency and that may significantly increase the cost of heating and air conditioning replacements. ... However, before any savings can be achieved, homeowners will have to bear the higher costs of repairing and replacing their HVAC equipment.

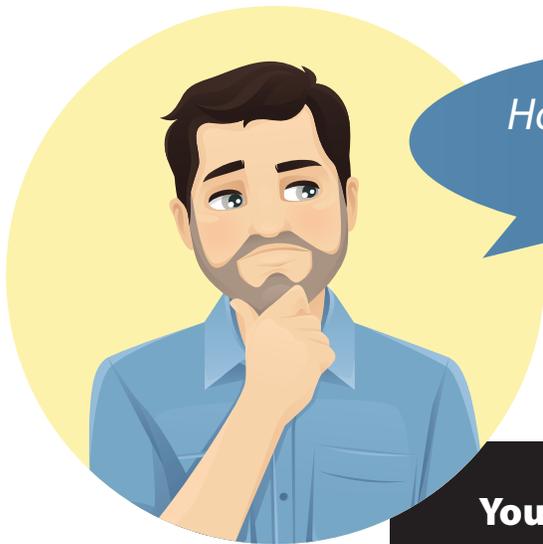


## List of Different Energy Efficiency Ratings

# SEER and EER - The Cost Impact

The relation between cost and SEER & EER value is directly proportional. The higher the SEER and EER, the more expensive you can expect the equipment to be.

The cost component that goes up is typically reflected in the upfront payment you make, whether you're buying it outright or paying for the HVAC unit in installments.



*How do I know if I should buy higher rated equipment?*

**You must take into account the fact that higher SEER and EER-value equipment will be more energy-efficient, and will help you save on monthly power bills.**

This actually lowers the cost of your investment over the long term. Take a judicious call on striking the right balance between paying an optimum price upfront and curbing your operational expense.



**GET YOUR HOME ENERGY EFFICIENT**

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## MAKING YOUR HOME COMFORTABLE



*D and L Mechanical Services provided prompt, friendly service and communication. I was notified when and who would arrive to provide services including a name and picture of the person who would be providing services. They arrived in a company van and provided cards upon arrival. I will be recommending this company. Thank you Stephanie, Jeremy and Sean for getting my heat back on.*

Diane



*Received a referral for D and L Mechanical Services from a friend, because my heat was not working. Technician was on time. Very friendly and provided me his card of the company. Before he even stepped in my home, he put on these blue booties. He quickly found my unit was making some weird noise. Informed me that the motor was in need of replacing. Provided a reasonable price and fixed it right on the spot. I cannot thank my friend enough for telling me about this company. I will be recommending this company to my friends, because you know a girl needs heat and now I am warm and toasty thanks to D and L.*

Sharon



*Prompt service, friendly office staff and field technicians. They fixed my issue promptly at a fair price.*

Scott



*Amazing Service!!!! this is what a service company is supposed to be like. The A/C went out I reached out to the company not expecting a return call or anything until the next business day. But, less than 30 mins later Leisa contacted me and in no time Darren was on site working my issue getting the AC working and making the entire family including the 2 dogs happy through out the night. Thanks D&L Mechanical*

Dave



*D and L came out after hours this evening and got my oil furnace up and running so my family could have heat during this cold weather season. Very personable and a very pleasant experience.. I would highly recommend this local company for your needs! Wonderful experience... Thank You D and L!*

Tiffany



*Impeccable customer service! I can not thank Darrin, the office staff and technicians enough! Under promise and over deliver must be their motto! Thank you all so much!*

Wendy

**Call Now For Same Day Service 540-295-6697**