



GETTING THE MOST FROM YOUR SMARTBURNER™

Temperature Limiting Control technology has been installed on over 120,000 ranges in multi-residential and private residences throughout North America. It has a proven track record when used properly, of saving energy, protecting tenants, saving lives and properties AND cooking efficiently and effectively. There are a few simple, but important factors to remember in order to achieve optimal cooking performance with your SmartBurner™.

COMPARING SMARTBURNER TO OPEN COIL ELEMENTS

The SmartBurner™ is carefully engineered to balance cooking performance with fire safety. Some of the benefits include fire prevention, energy savings and more even heat distribution which helps eliminate hot spots on the plate surface. Although use of the SmartBurner™ does increase the cook time slightly vs a bare coil, the difference in cooking time is typically small. Testing by Pioneering Technology and independent laboratory testingⁱ have shown that an aluminum pot/pan in good condition, with a reasonably flat bottom, when combined with proper cooking techniques will result, on average, in approximately an 11% increase in total cooking time (See Chart below). **In real terms this is an increase of only a few minutes or less.**

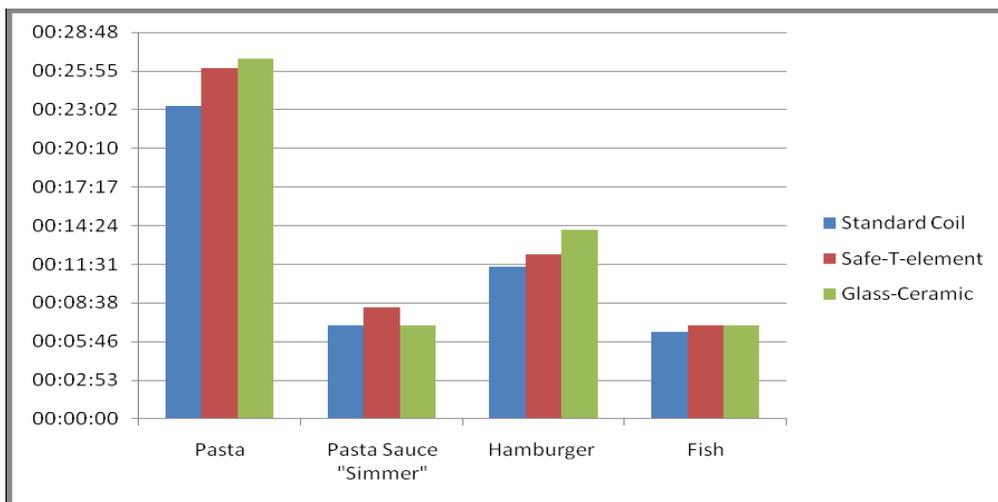


Figure 1: Independent Laboratory Testing

FACTORS AFFECTING COOKING PERFORMANCE

A. COOKWARE FLATNESS

The flatness of the bottom of a pot or pan has the single largest effect on cook times and cooking performance. Most range elements rely on direct contact with the pot/pan in order to transfer heat to the cookware. Electric elements in particular (coil, solid, smooth-top) rely on contact for heat transfer. Pots and pans that are warped, convex or concave and/or have a small contact area will conduct heat very poorly compared to pots and pans with relatively flat bottoms.

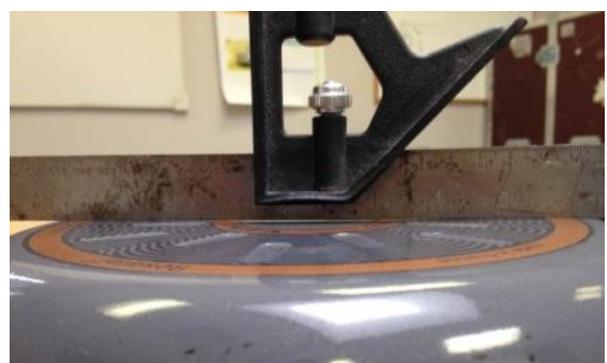
RECOMMENDATION

The SmartBurner™ is proven to work best with cookware having flat bottoms. Many pots and pans become warped over time when cooking on a regular coil. Also, new pots and pans that are sold in retail stores today sometimes come out of the package with a bottom that is **not** flat. You can test the flatness of the bottom of the pot or pan by placing a ruler diagonally across it (see images below). If there is a noticeable gap between the ruler and the bottom of the cookware (see yellow arrow in image one) then the pot or pan will likely not be a good conductor of heat and will result in longer cooking times. To ensure optimal cooking performance **flat bottomed pots and pans** should be used with the SmartBurner™.

Not Flat



Flat



B. COOKWARE TYPE

Cookware is made from many different materials. An understanding of the differences in cookware will assist in making the right choice for use with the SmartBurner™ product.

Aluminum

Aluminum cookware is fairly inexpensive and is lightweight and strong. It is a good conductor of heat. Today, most aluminum pots and pans are typically coated with a protective layering to help prevent deterioration as a result of cooking.

Stainless Steel

Stainless steel is a popular material for pots and pans because it does not corrode, keeps its bright shine and is more resistant to breaking down over time with repeated cooking. Stainless steel is an average conductor of heat. It is not as good as aluminum but it is superior to ceramic or glass. To improve the conductivity of stainless steel many manufacturers today use a heavy aluminum or copper core in the bottom of their stainless steel pots and pans to improve heat flow. These cores are bonded to the bottom of the pot or pan.

Cast Iron

Cast Iron is inexpensive. It is fairly heavy and heats food evenly but heat flow is slower than aluminum. This is good for slow cooking but can result in slightly longer cook times.

Tempered Glass and Ceramic

Tempered glass and ceramic are available as flameproof and are suitable for use on a burner. Both conduct heat slowly and unevenly resulting in significantly longer cook times and hotspots. This type of cookware is better suited to use in the oven.

RECOMMENDATION

Use pots/pans that are made from **aluminum or stainless steel**. If using stainless steel try to use cookware that has a heavy aluminum or copper core bonded to the bottom. Of the choices available on the market today aluminum and stainless steel are the best conductors of heat. Glass and ceramic are very poor conductors of heat.

If your cookware is warped and/or is not made from a material that is a good conductor of heat you may require new cookware to maximize your cooking performance with SmartBurner™. If new cookware is required it does NOT need to be expensive. Some of the best pots/pans are available at most well-known retail outlets and range in price from \$9.99 to \$19.99 depending on make and model.

C. USE OF LIDS

Because an electric coil can reach temperatures as high as 1400F (760C) many consumers today do not use a lid when cooking. This typically results in longer cooking times and can waste electricity.

RECOMMENDATION

Using a lid when boiling water will help the water reach a boil quicker. Also, using a lid when cooking other food items will help the food cook faster and will also prevent grease from splatting out of the pan which is safer and cleaner.

D. COOKWARE BOTTOM

Some cookware can be made in such a way that the bottom of the cookware is a light gauge. Cookware with this type of bottom is easier to warp after heat-up, and will extend cooking times

RECOMMENDATION

When using the SmartBurner™ a good quality heavy-gauge bottomed aluminum pot/pan is recommended. These types of pots/pans can be identified by the flatness of the bottom and the heavy gauge of the bottom of the cookware. This cookware does not need to be expensive.

E. MATCH POT/PAN SIZE TO ELEMENT SIZE

Sometimes consumers can mismatch pots/pans to the proper element size. This can result in longer cooking times.

RECOMMENDATION

Always try to match the pot/pan size to the element size. For best results the cookware should have a diameter at the bottom of the pot/pan that is at least equal to but not more than 1 inch wider than the plate surface. This ensures optimal coverage and will result in better heat conductivity and better cooking performance. On most stoves the small element is typically 1250 watts and the large element is typically 2100 watts. If preferred, a small pot/pan can be used on a large element to improve cooking times but it is not recommended that a large pot/pan be used on a small element as this will usually increase cooking times.

FREQUENTLY ASKED QUESTIONS

Will the SmartBurner™ affect how I cook?

There is no behavioral change required when cooking with the SmartBurner™ .However, like any new cooking appliance, a little experimentation may be required to get familiar with the various temperature levels while using the stovetop.

Do I need to buy new cookware?

New or expensive cookware is typically not necessary. As indicated above, in some cases existing cookware may be of a type or age which can result in poor cooking performance. However, with the proper cookware and cooking techniques most users experience only a slight increase in cook times when using the SmartBurner™

Do I need to use a lid to get water to boil?

A lid is recommended to achieve highest energy efficiency and shortest heat-up times. This is good practice whether the SmartBurner™ is installed or not.

Will I still be able to sear meat?

The SmartBurner™ will limit the temperature in the pan to a level just below the auto-ignition point of cooking oil. This is well above the temperature required to sear meat and should not impact the ability to cook any meat product.

Will the SmartBurner™ affect the oven?

The SmartBurner™ interacts with the stovetop only. It will have no effect on the operation of the oven.

ⁱ COOKING PERFORMANCE COMPARISON, Technical Report Number 30013030, OnSpex Consumer Product Evaluation, Feb. 12, 2010