

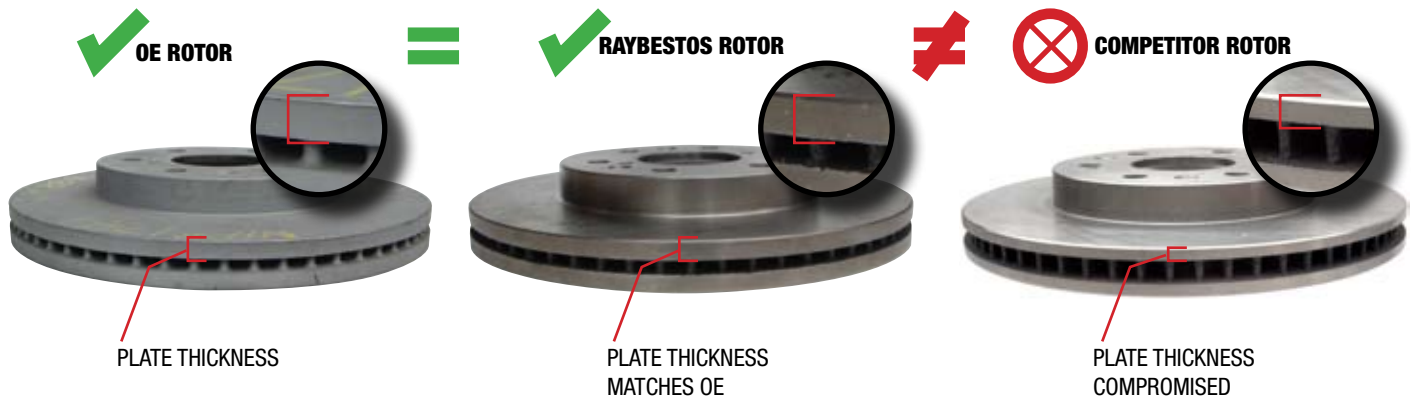
WARNING! WARNING!

Are You Really Getting What You're Paying For?

Raybestos® has discovered that many "lightweight" rotor companies have decided to reduce their plate thickness by expanding the air gap and reducing the weight of their rotors...all in the name of being "more competitive".

Ask yourself this:

Have you been tricked? Is the rotor you've been purchasing actually manufactured with reduced weight and less material than an OE equivalent?



Warp: common term that means lack of parallelism

"Airing" Our Grievance: Why More Air is a Problem

Increasing the air gap in a rotor reduces the product weight. With less mass to absorb and dissipate the heat, the rotor is likely to "warp" causing the driver to feel pedal pulsation.

These thinner surface plate rotors do not meet OE specifications and drastically increase the likelihood of "heat checking" (tiny cracks on the surface of the rotor). The reduction in the ability of the rotor to dissipate heat will cause the strength of the material to weaken and potentially cause the collar to crack. This loss of rotor mass may cause poor braking which can effect overall performance and safety.

RAYBESTOS ROTOR

COMPETITOR ROTOR

AIR GAP MATCHES OE

Properly dissipates and absorbs the heat

PLATE MATCHES OE

Maximum rotor life; can be machined; resistant to premature "warping"

VANE SIZE MATCHES OE

Maximized cooling and proper harmonic design reduces brake noise

MATERIAL MATCHES

OE SPECIFICATIONS (G3000)

AIR GAP INCREASED

Leads to "warped" rotors

THINNER PLATE

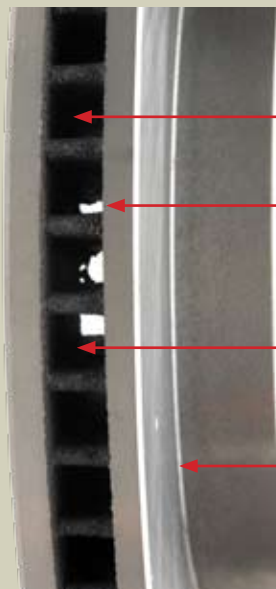
Increases the likelihood of heat checking and can lead to premature failure

VANE SIZE CHANGES

Reduced vane size can lead to early product failure

COST SAVING MATERIAL CHANGES

Inhibits noise reduction capabilities and causes brittleness (G2500)





ROTOR WITH SEVERE RUST IN THE VANES

In severe climate conditions where rust is prevalent and vane dimensions have been reduced, the deterioration rate of the vanes can be accelerated with exposure to salt or calcium chloride commonly used in winter road conditions. Such conditions, combined with reduced vane sizes, can seriously reduce rotor life while simultaneously increasing the potential for failure.

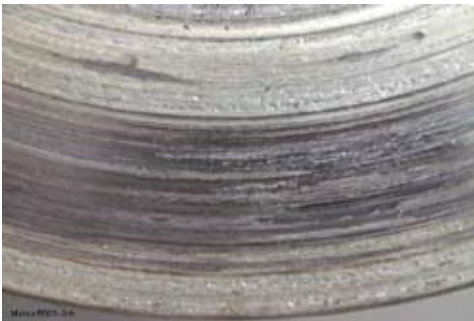
One aspect of the perceived value that needs to be considered when using “lightweight” competitors product with larger air gap and reduced plate thickness, is that this product is already close to minimal thickness. Installing such a product eliminates any possibility of extended life due to the impossibility of resurfacing.



EXCESSIVE HEAT CAUSES CASTING FAILURE

In addition to plate gap variations, Raybestos is seeing dimensional changes and reductions in “lightweight” competitors vane configurations. The reduction in vane mass causes material strength to decrease at the vane/surface plate interface and can lead to the possibility of early product failure.

In a braking system, the Raybestos® rotor acts as a conduit to dissipate heat. Brake pads are designed to perform best at optimal temperatures. As rotor dimensions and materials vary from Original Equipment specifications, brake pad performance is directly impacted by heat. Overheating of the brake system causes brake pads to have excessive and premature wear, friction material transfer, an unresponsive pedal caused by brake fade and the potential for significant increase in noise and poor brake performance.



BRAKE PAD WEAR/FAILURE AND ROTOR SCORCHING

Brake noise or squealing is most often associated with brake pads, but by increasing the air gap, changing the vane configuration, reducing the weight and changing the material (to take cost out)....the harmonics of the rotor have been changed from the OE design and as a result, the “lightweight” competitors product will be significantly more noisy!



REMEMBER...WATCH OUT FOR “LIGHTWEIGHT” ROTORS

Changing the mass of the rotor by reducing the brake plate thickness has a negative effect on the thermal resistance to conductive heat flow. Heat flux into the rotor is inversely proportional to thermal resistance to conduct heat flow. Reducing the heat flux by reducing the mass increases thermal resistance, therefore causing the rotor to become hotter during operation. This will result in brake fade, “warpage,” pedal pulsation, rotor cracking, uneven friction wear, material transfer and reduced friction pad life.

***...so was it really “cheaper”,
or did you get exactly what you paid for??***