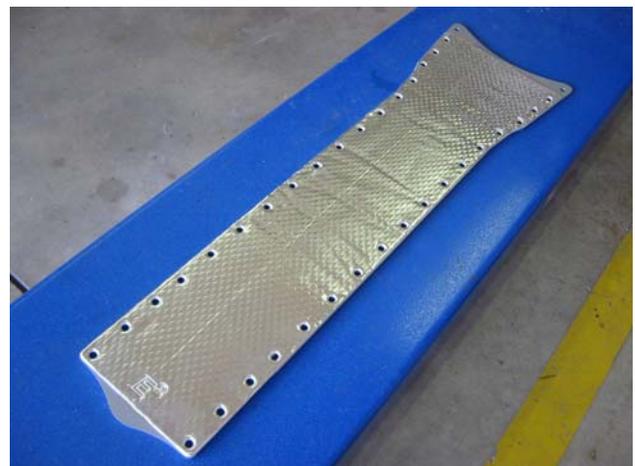
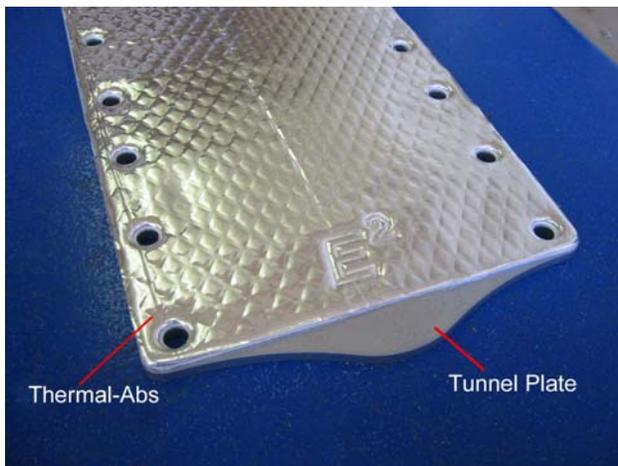


## **E<sup>2</sup>** Elite Engineering's Tunnel Reinforcement Plate Installation on a C5 and C6 Corvette

**E<sup>2</sup>** Elite Engineering's "**Thermal-Abs, Abs-of-Aluminum, and Abs-of-Steel**" products replace the stock stamped-steel tunnel reinforcement plate (C5) or thin aluminum plate (C6) for the express purpose of stiffening and heat shielding the C5 and C6 chassis. In addition the added ceramic coating and "Thermal-Abs" heat shielding does an amazing job of reflecting the heat radiated by the exhaust system away from the central tunnel to help keep the passenger cabin cooler.

Below are a couple pictures of the Thermal-Abs. The **Thermal-Abs** is comprised of one of our Tunnel Reinforcement Plates bonded with a specially engineered aluminized heat shielding. Its primary purpose is to greatly reduce the amount of heat transfer to the Tunnel Reinforcement Plate. Our temperature tests have shown a decrease in as much as 70 degrees F at the Tunnel Plate.



Whether the installation is on a C5 (1997-2004) or C6 (2005 - ), the procedure is the same. The first order of business is to jack up the car and place it securely and safely on jack stands, ramps or a combination of the two to allow access to the central exhaust section and tunnel plate. Ed (aka Patches), a member of the Corvette Forum was kind enough to offer this picture of his beautiful C5.



Below you see the section of the exhaust system which needs to be removed to gain access to the stock tunnel plate. This section is a single large, piece consisting of the Header Tri-bolt flanges that connect to the exhaust manifolds, the catalytic converters (including the 2 pup cats on some later models), the main h-pipe section and the flanges which connect it to the rear muffler over-axle pipes.



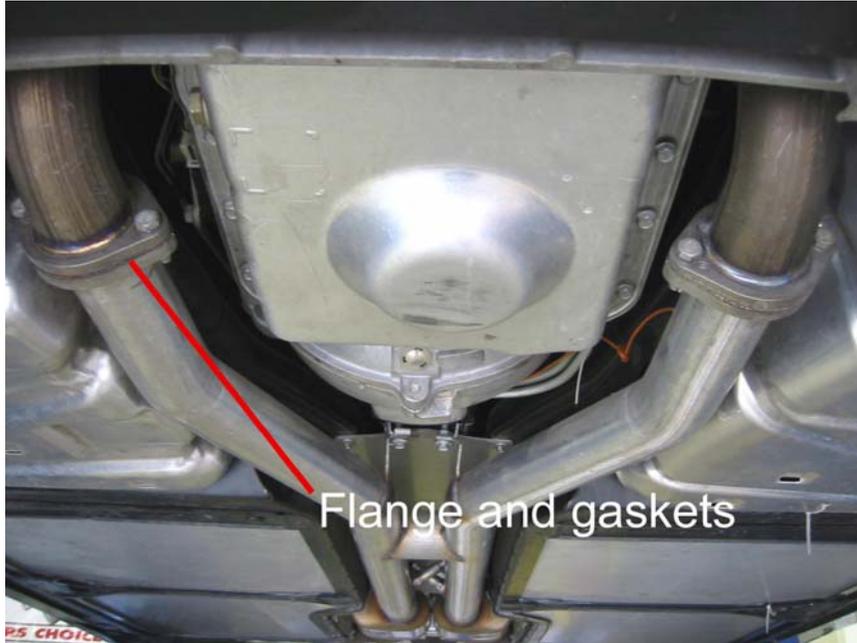
First, use a 22 mm wrench to unscrew the rear O2 sensors from behind the cats. Be careful removing them to avoid damage. Allow them to hang free and be aware of them when you get to the steps where you lower and raise this section of exhaust past them.



Next, you will need to remove the (6) bolts from the driver's side and passenger side Header 3-bolt Tri-Flange shown below. These bolts may need a little extra effort to loosen.



This view below, from the rear of the car, shows the (2) sets of muffler bolts that need to be removed.



Next, use a 13 mm socket and wrench to loosen, but don't remove yet, the (2) spring hanger bracket bolts pictured below. Don't remove them yet. You'll want to leave these until last so that the exhaust stays in place until you're ready to lower it. Remove the bolts on the front and rear flanges that connect the h-pipe (or x-pipe) to the exhaust manifolds and to the catback over-axle pipes.





Below is a shot of the stock H-pipe and center exhaust section removed. At the very top bottom of the picture, you can also see the flanges of the exhaust manifolds. Remember, the exhaust manifolds do not need to be removed for the installation of Elite's Tunnel Plate. You can also see the location of the O2 sensors and mounting brackets.



Here is a picture of the tunnel and stock plate. As you can see the stock tunnel plate is exposed and ready for removal. There are 36 6-mm screws holding it in place. This view is looking from the rear of the car.



The stock plate is held in place by (36) 6x1.25 mm bolts. To remove the stock plate, use an 8 mm socket on a 6-inch extension to first loosen, but not remove, two of the center-most screws, one on each side opposite each other. Then completely remove the other 34 screws. See the picture below. Finally, remove the two you first loosened while supporting the plate to prevent it from falling. Then carefully move the plate away from the car.



This is essentially what your tunnel should now look like. A great opportunity to inspect the torque tube and central tunnel area and to clean up a bit while it's exposed. Note: The blue thermocouple wires in the pictures are left over from our Tunnel Plate Temperature Testing.



You are now ready to install your "New" Tunnel Reinforcement Plate!

Installation is in reverse order of the removal. If you ordered your Tunnel Plate with the Thermal-Abs (as shown in the picture), be sure the **heat shielding is facing downward towards your exhaust and towards the ground.**



You should be able to read the **E<sup>2</sup>** logo from underneath and it should be at the rear of the tunnel. Carefully lift it into place and start two of the screws on opposite sides near the center of the plate to hold it in position and to bear its weight. You **WILL** reuse the original (36) screws that we removed during the first section. Even with the 3/8" thick plate, there is plenty of thread left in the original screws.



Start the rest of the screws and then carefully **hand-tighten** them using the 6-inch extension with the 8-mm socket. Snug them all down sequentially until they are completely seated.



Don't force a screw in if it feels as if there is an unusual amount of resistance. A drop of Tap Magic or machine oil might help to thread it in more easily. Push the plate up against the frame rails to relieve tension on the screws as you turn them in by hand. Turn them in evenly as you go to avoid binding one side relative to the other. Once they have all seated by hand, you're cleared to torque them.

Starting at the center of the tunnel and working side to side and then front to back, torque the screws to 89 in.- lbs. in. (yes, that's **89 Inch-Pounds or 7.4 Foot-Pounds**). Don't over-torque as the screw heads are likely to break off.

As viewed from the rear, here is a picture of what the Thermal-Abs looks like torqued into place.



Congratulations!! Now go out and enjoy the new ride and cool cabin temperatures!

Here are a few more pictures you might find useful:

