



TESTING DEPT.
WIND TUNNEL DATA REPORT
FOR KATECH C6 CORVETTE AERO COMPONENTS



This report is intended to provide customers with clear data in order to make informed decisions about which aero components are right for them. While many choices for aerodynamic upgrades can be purely cosmetic, it is reassuring to know the data behind the products you are providing. Katech Performance is leading the way in aerodynamic upgrades for the C6 Corvette and is committed to providing more data to back up these products more than any manufacturer in the industry. Katech's over 30 years of supporting factory race teams has given the company a superior knowledge of what it takes to build a well balanced car.

In this report we will be looking at three products. One of those products, the front splitter has two variations. The products are as follows:

<i>Part number</i>	<i>Description</i>
KAT-4979	Carbon fiber front splitter
KAT-A4979	Carbon fiber front splitter with undertray and brake ducts
KAT-A6041	Carbon fiber side skirts
KAT-4978	Carbon fiber rear spoiler

All of the carbon products our pure carbon fiber, not carbon layered over fiberglass and they are made in the USA.

In this report we will be looking at the increase in front downforce, rear downforce, F&R downforce distribution, and overall aerodynamic efficiency (L/D). All aerodynamic data are expressed in terms of percent improvement over the stock (baseline) configuration. Since every car is setup differently and minor changes in setup such as ride height can affect the absolute numbers, the best way to properly convey the improvements is to compare them to a baseline done on the same car.

The test subject is a 2007 Katech Street Attack Z06 equipped with coil-overs and set to a standard baseline ride height used by Katech. The car is not equipped with the optional World Challenge louvered hood which greatly increases front downforce, but we wanted to show the gains made to a stock car without the hood.

First let us take a look at the products to better understand how they function.

KAT-4978 is a full length carbon fiber rear spoiler. It is a simple bolt on part. It uses the production CHMSL (Center High Mount Stop Lamp) that is taken from the production spoiler during installation.



KAT-A6041 is a carbon fiber side skirt kit. It is installed using some production mounting bolts and some holes that are drilled into the body and fastened with rivets. It includes a plastic mud flap / attachment from GM. This is the same piece that is on the ZR1.



The Katech carbon fiber front splitter will be sold two ways. One is a simple bolt on chin splitter sold under part number **KAT-4979**. The second, **KAT-A4979** is the same splitter, but with a full length undertray extending to the radiator and with integrated brake cooler ducts. The upper portion of this splitter is the same as the **KAT-4949** so if you wish to upgrade to the undertray version at a later date you may do so. A 1" lip is built into the bottom of the splitter and features thread inserts to fasten the undertray to the upper splitter. Brake cooler ducts are also a bolt in with no modification required. The brake cooler inlet is a direct path from the front of the vehicle rather than trying to pull air from the bottom of the vehicle like the stock car. Wind tunnel smoke testing (pictured below) shows that this very effective way of getting air to the brake system. A stainless steel hardware kit is also included.



IMPORTANT!

Also recommended with the Katech carbon fiber front splitter is the ZR1 front fascia reinforcement (GM part number 25954152). Wind tunnel testing shows that this reinforcement is needed at any speed and should be purchased with every splitter.

Cfg.	Description	PN	DF Increase Front	DF Increase Rear	Drag Increase Total	Overall Aero Efficiency Improvement	Comments
1	Katech spoiler Stock splitter	KAT-4978	0.4%	291%	9.2%	87%	
2	Katech spoiler Katech splitter	KAT-4978 KAT-4979	32%	268%	8.6%	101%	
3	Katech spoiler Katech splitter w/ undertray	KAT-4978 KAT- A4979	153%	202%	17.0%	158%	Second best aero balance (55.4%/44.6%)
4	Katech spoiler Katech splitter w/ undertray Katech side skirts	KAT-4978 KAT- A4979 KAT- A6041	150%	234%	15.4%	165%	Best aero balance (47.2%/52.8%) Most total downforce Best L / D
5	Katech spoiler Katech splitter Katech side skirts	KAT-4978 KAT-A979 KAT- A6041	26%	279%	7.6%	100%	
6	Katech spoiler Stock splitter Katech side skirts	KAT-4978 KAT- A6041	1%	308%	9.4%	92%	Highest rear downforce

The baseline test showed that in stock form the car produced front and rear lift. The table above shows the increase in downforce expressed as a percent of the baseline.

Configuration 1

For the first test we installed a Katech carbon fiber rear spoiler. We saw a nominal increase in front downforce and a large increase in rear downforce as to be expected. This configuration increases the rear to front downforce ratio by seven times. While we feel this configuration is fine for legal highway speeds, racers will likely find that the car now needs more front downforce to balance the car and prevent understeer.

Configuration 2

For the second test we added a Katech front splitter. This is the splitter only, without the undertray. Downforce in the front increased by 32% over the baseline and also balanced the rear downforce by bringing it down to 268% over baseline. The decrease in front lift reduces rear downforce and starts to balance out the car

Configuration 3

In the third test we added the undertray and found this to be the most effective way to increase front downforce and further balance the car. Front downforce increased 153% over stock and rear increased 202% over stock. This was the second best aero balance overall

Configuration 4

This configuration is the full Katech aero package with splitter and undertray, side skirts and spoiler and also was the best balanced of all of our tests. The baseline test showed the car had lift of 70% more in the front than in the rear. With the full Katech package, we were able to get downforce (negative lift) to a near 50% balance front to rear. This is the package for the road racer who is looking for a nice and balanced set of aero parts, or for the street car that just needs more downforce as well as a balanced aesthetic body kit. Also this configuration had the lowest lift / drag ratio. The test resulted in a negative number, showing that with this package you are gaining more downforce at a lesser expense of drag. Lift / drag improvement over stock is 165%.

Configuration 5

For this test we removed the undertray from the splitter to test a typical street package that does not include the undertray. As you can see there was a large expense of front downforce and rear downforce was increased similar to configuration 2. When you compare configuration 5 to configuration 2 we found that the side skirts also improve rear downforce.

Configuration 6

For this test we removed the Katech splitter and returned it to a stock Z06 splitter. Due to the rear spoiler and side skirts adding rear downforce and nothing in the front to balance, this was the most extreme rear to front downforce ratio.

Conclusion

The factory car starts with lift in the front and the rear with 70% of that lift in the front. Configuration 3 and 4 are the only two that cross the barrier into the negative and provide downforce. We've balanced that downforce to near 50% with both these configurations with number 4 being the closest to 50%. We have provided this data to better inform you the customer and you can make a more enlightened decision of what is best for you. Aerodynamic upgrades are much like suspension upgrades in that the slightest change can affect the dynamics of the car and there are many variables which can be tuned. We can provide an excellent baseline and all the data you need to begin tuning your car to suit your needs. Remember, many other variables will affect the aerodynamics of the car including ride height, rake, and spring rates. We hope that this report gives you a great starting point for you aero and suspension tuning and we thank you for choosing Katech Performance products.

