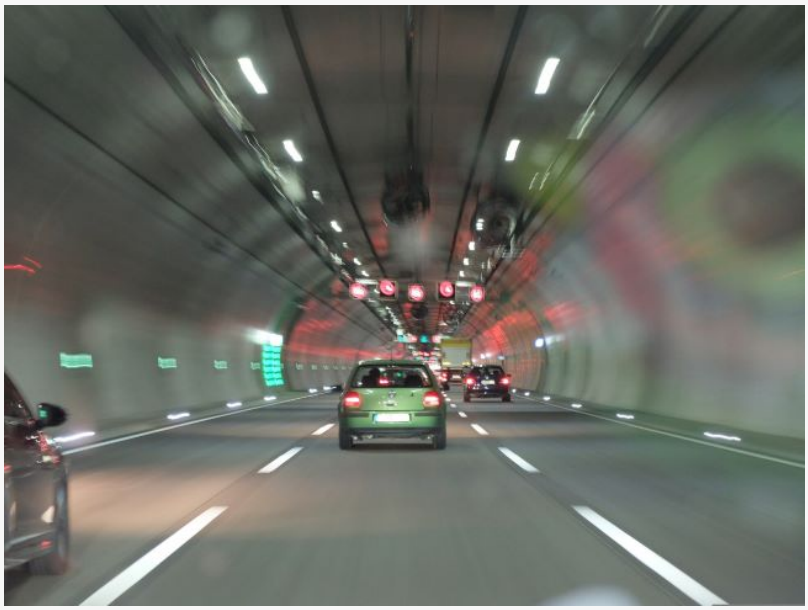
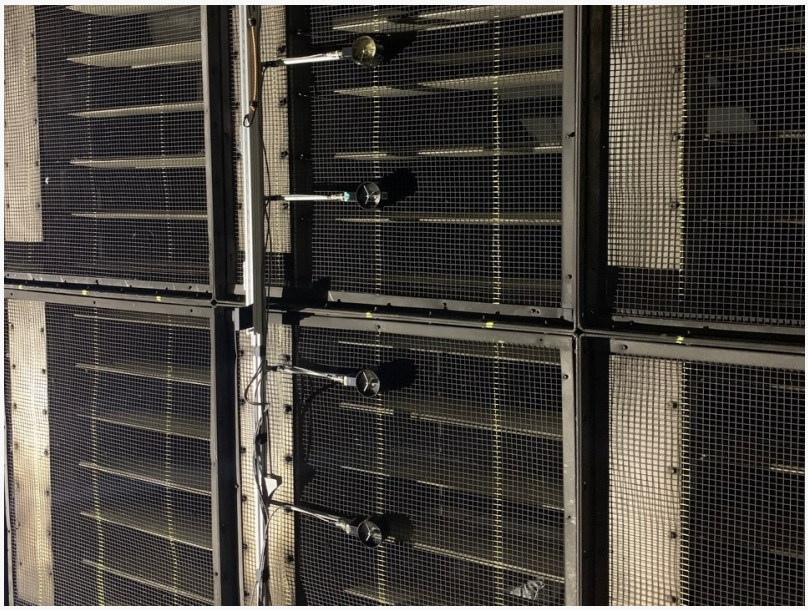
Protecting Your Daily Commute: Why Highway Tunnels Need Air Flow Testing

Airflow Sciences Corporation offers a wide range of field testing services including fan performance testing of highway tunnels.

LIVONIA, MICHIGAN, UNITED STATES, October 20, 2022 /EINPresswire.com/ -- As a fluid dynamics solutions company, Airflow Sciences Corporation has decades of experience with fan performance testing and ventilation system design. The company's leading engineers evaluate HVAC systems, perform numeric modeling of air flow in buildings, and analyze fan performance. Proper ventilation is an important factor in many different industries, and one area of testing they conduct is in the transportation industry, where they test air flow in tunnels.



U.S. road tunnels are used by over 15 million motorists every day



Vane anemometers being used to test the flow rate of a fan in a tunnel

Highway tunnels play a vital role in the transportation infrastructure of the United States. Not only do tunnels create safer, more efficient travel routes for commuters, but they also support the movement of goods and services nationwide. The Federal Highway Administration reports that over 500 roadway tunnels are in operation today, covering over 130 miles and carrying over 15 million vehicles every day. These routes often

facilitate travel in otherwise difficult geographies, helping key travel continue in spite of mountain terrain and waterways.

Tunnels on roadways need to have sufficient air flow to prevent buildup of exhaust emissions. In many cases, tunnels are equipped with sensors that detect carbon monoxide and make automatic adjustments to dissipate harmful vapors. Ventilation systems can consist of a few simple fans, or they can include entire air supply and return systems that run above or beneath the tunnel. Inadequate ventilation can have some serious consequences, especially when it comes to risk events like vehicle fires, when smoke and heat must be cleared quickly. In emergency situations, proper airflow can make the difference between life or death for trapped travelers.

The Federal Highway Administration requires regular inspection of tunnels throughout the United States. Similar to the National Bridge Inspection Standards, the National Tunnel Inspection Standards ensure that tunnels are checked for structural and operational health, including ventilation systems. When Airflow Sciences evaluates these systems, their engineers assess the flow rate and static pressure rise generated by fans at various operational settings. They can also assess an entire ventilation system, including supply and return plenums. The company tests any type of ventilation system, whether longitudinal, traverse, or semi-traverse, and any type of fan, whether centrifugal, propeller, or axial.

As a flow testing service provider, Airflow Sciences offers state-of-the-art equipment accompanied by the highest level of industry experience. They determine the most ideal test set-up, furnish all measurement devices. Most importantly, they provide tunnel owners and transportation departments with the accurate flow data they need to keep their roadway assets protected and maintained.

About Airflow Sciences Corporation
Airflow Sciences Corporation is a fluid dynamics solutions company. They specialize in the design and optimization of equipment and processes involving flow, heat transfer, combustion, and mass transfer. Since 1975, the company has focused on testing and simulation of air, gas, liquid, or particulate flows. They also manufacture standard and custom test equipment, including probes and wind tunnels, so customers can collect data accurately and efficiently. Their primary CFD software, Azore®, is also available for those customers with in-house CFD personnel. ASC offers comprehensive flow solutions and optimization and serves a wide range of industries including HVAC, power, auto, rail, and food processing.

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