



SURFACE SYSTEMS & INSTRUMENTS, INC.

Custom Test Equipment • Mobile Technology Solutions

California	Kansas
1845 Industrial Drive Auburn, California 95603 ☎ (530) 885-1482	307 Plymate Lane Manhattan, Kansas 66502 ☎ (785) 539-6305
📍 38.9295236N, -121.0945153W	📍 39.1852186N, -96.6082708W



smoothroad.com

Product Overview

CS8800 Walking Profiler:

A precision surface profiling device for roads, bridges, airports and floors. The CS8800 has the proven ability to perform as a reference device with 98% repeatability. The CS8800 reports numerous profile indexes (IRI, MRI, HRI, PRI, RN, and FF/FL) and outputs precise dimensions of localized roughness. Using a default sampling interval of 1 inch (25 mm), the CS8800 generates a high resolution surface profile. With technology and experience drawn from SSI's other profiling devices, the CS8800 is the only walking profiler with feature rich Windows software onboard the device. Raw data exports to many formats: ERD/PPF (for ProVal), Excel, PDF). The CS8800 collapses into a reusable container for storage and transit.



High Speed Inertial Profilers: SSI produces several traditional high speed profiling systems, all of which are Class I devices under ASTM E950. SSI's systems collect true 1 inch (25 mm) data. SSI guarantees compliance with industry specifications, including AASHTO M328, R054 and R056-057, and State DOT requirements. The systems install onto industry standard trucks, vans, or sport-utility vehicles. Profile data can be exported to PDF, ERD/PPF (compatible with ) and  spreadsheets. The SSI high speed system is available in several configurations:

1. CS9300 Portable Profiler, Bumper Mount
2. CS9100 Mid-Mount Profiler
3. CS9400 Simple Profiler



Zero-Speed Inertial Profiler: SSI is the first vendor to offer an AASHTO r56 compliant low-speed profiler. Collect data at 0-100 mph with certifiable data through stoppages. All SSI inertial profiler models (CS9100, CS9300, CS9400, CS8700) are compatible with the Zero-Speed upgrade. The Zero-Speed also comes standard with a dual antenna GNSS and cross-slope reporting. The GPS receiver can use over 35 satellites at once.



Lightweight Profilers:

The CS8700 Lightweight Profiler can access green concrete quicker than profiling systems mounted on full size vehicles. Like SSI's other profiling systems, the CS8700 is an ASTM E950 Class I device that is guaranteed to comply with agency specifications. For testing grooved concrete or coarse textured pavements, a wide footprint Gocator laser is used for lower ride values and fewer areas of localized roughness as compared to single point lasers. The CS8700 have the same proven capabilities as SSI's high speed profilers, as the collection system is the same – and can be interchangeable.



Machine Control Scanning and Pavement Management

SSI offers the CS9500 Full Lane Survey Scanner to collect ~13-foot wide transverse profiles of the surface at a fixed interval, determined by the operator. The CS9500 doesn't use a rotating LiDAR scanner, so variable speeds don't affect the data density. Since the lasers are pointed at the ground, no post-processing is required on the raw point cloud. **Only one pass per lane is required** for machine control operations. Point clouds use PPK GPS corrections and may use survey correction points for true 3D surfaces with more than 95% of the point cloud within 6mm accuracy.

Machine Control Scanning and Pavement Management (con't):

Since the data is collected at a fixed interval over the entire width of the lane, transverse rutting profile reports are available immediately after the collection. Along with reports for ride quality, cross-slope, road geometry, and localized roughness. The CS9500 is also an ASTM E950 compliant inertial profiler that be integrated with the Zero-Speed inertial profiler upgrade.

For a more portable solution, ask us about our CS9550 portable survey system.



SSI Software

SSI has unique software modules to assist with daily profiler operations. These modules can be added into SSI Profiler with a license key. SSI is proud to install perpetual licenses on collection computers for SSI Profiler which do not require annual fees for data collection, reporting, or exporting.

- **Intellicut:** Creates corrective grind plans automatically and iterates difficult grind locations.
- **Profile Design:** Smooths out machine control models based on smoothness parameters, cut depth, and cross-slope.
- **Network Manager:** Use Shapefiles from street centerlines to collect data automatically and report road characteristics in a custom report that can be imported into GIS programs.

CS1100 GPS-DMI

The CS1100 is a portable GPS-DMI that does not require connection to a driveshaft or the OBD port. Connect the GPS antenna and mag-mount it to the vehicle. Then provide power to the CS1100 GPS-DMI through a supplied USB or cigarette lighter plug. The CS1100 allows the user to count up or down station and choose the starting station. If GPS outages will be encountered, ask us about our OBD or wheel-DMI enabled options.



CS7900 GPS Navigation

The CS7900 is made to connect to the SSI Profiler program for grind correction navigation on a mill or diamond grinder. Connect the USB or serial connect to the SSI Profiler laptop and the program displays the grind locations and your current position. This allows for corrective grinding without the need for paint marks. The CS7900 contains an onboard battery, but also allows for 12-36V charging.



CS8500 Computerized Profilograph:

The CS8500 profilograph is widely used worldwide for road, bridge and airport smoothness testing. The CS8500 is the original California profilograph, complying with industry specifications, including ASTM E-1274, USACE, and State DOT requirements. The CS8500 features patented technology with reversible data collection and dual wheel track reports. The easy

Windows software runs on a Toughbook touchscreen computer. Raw surface profile data is encrypted and can be infinitely re-analyzed with different analysis parameters. Profile data exports to formats including PDF, Excel, and ERD/PPF (ProVal). The detachable operator control housing runs on AC or DC power supplies for use in the field or office.



CS8550 Bridge Profilograph:

For testing bridge surfaces, SSI offers the specialty CS8550 bridge profilograph. With a 12' (3.6m) frame, the CS8550 complies with specifications for bridge structure testing (California DOT 547).



Equipment Rentals and

Testing Services:

SSI's full line of surface profiling system devices are available for rental or hire. We have options for equipment-only rental with delivery and on-site training. SSI can also provide certified equipment and technicians for your project testing requirements. Discounts on equipment purchases are offered to customers who rent equipment or use SSI for project testing. Rentals and testing services are available worldwide. Virtual training is also available for new and current customers.



California
 1845 Industrial Drive
 Auburn, California 95603
 ☎ (530) 885-1482
 📍 38.9295236N, -121.0945153W

Kansas
 307 Plymate Lane
 Manhattan, Kansas 66502
 ☎ (785) 539-6305
 📍 39.1852186N, -96.6082708W