Directory

Track & Infrastructure

Keeping the World on Track

Minimise the impacts of slip-slide conditions and keep performance, maintenance and safety on track.

The fall of leaves from nearby trees makes autumn a dangerous time for rail vehicles. Rail traffic is interrupted as low friction stops trains from accelerating and braking normally, leading to severe delays and accidents. Coefficient of Friction (COF) levels are significantly affected when leaves are compressed into the rails by train wheels and become an oily film on both sides. Train wheels slip and block more easily, creating flat spots on wheels that can result in high maintenance bills.

LPS products help rail networks detect and improve the COF levels of a slip-slide environment and minimise the impacts of weather events to provide safe braking and stopping distances and reduce autumn maintenance costs.

Slip Away from Your Safety Issues

Designed to deliver quality results, the LPS LaserTrain deep cleans the railhead with a laser, securing optimal COF for drivers and 24 hours of slip-slide-free conditions. Improved friction levels prevent train wheels from blocking, which reduces the number of flat spots – resulting in less maintenance, better punctuality and happier passengers!

The technology is the most sustainable rail cleaning option in the market today, with the lowest long-term running costs and CO2 emissions, through its use of pure energy and no by-products. Key features include:

- **Control system:** the control system is easy to operate and combines all the hardware and software for an autonomous clean, so there's no need to hire any extra hands. GIS data enables the

system to switch automatically between modes and avoid hitting rail obstacles.
- **Laser safety:** the system is safe for use without any protective equipment. It will automatically shut off at low speeds to avoid damage to the railhead.
- **Client dashboard:** to keep track of progress LPS clients can access details like the live position of the train, where it has been, slip slide results and miles cleaned.

Tailored to Meet Your Needs

Various LaserTrain features can be customised to suit each rail network's unique needs:

- **Model type:** the technology can either be built into a pre-existing train wagon or installed on to a separate wagon with a container. Both models require a locomotive to operate, lasers clean the rails while the wagon is pulled.
- **Cleaning speeds:** choose between three speed options: 25mph, 45mph and 60mph.
- **Contract:** the system can be purchased outright or on a lease contract.

Due to variations in the design and contract, pricing is based on individual requests.

Proven Track Record

Since 2018, the LaserTrain has helped the MTA Long Island Rail Road (LIRR) tackle the slip-slide season. In 2020, LIRR added a second 25mph system to cover more territory. The trains were in action up to 18 hours per day, covered 2/3 of the network and cleaned vital areas every 24 hours.

Treatment was effective, with an 88 percent reduction in slip-slide events after 12 hours and a staggering 38 percent reduction in wheel truing labour costs in October-November alone.

"The initiative has yielded major year-over-year improvements in service while ultimately paying for itself through reduced labour and material costs." LIRR President Philip Eng.

Keeping Innovation on Track

LPS engineers have developed two new products to effectively detect and measure COF levels on the rail. Each product can provide full network coverage and a heat-map of key problem areas. The analysis empowers operators to monitor rail safety more easily and to maximise LaserTrain activity (and other treatments).

Originally designed for Network Rail, the LPS Tribometer is a modern update to the traditional hand tribometer. It employs moving trains to provide accurate readings of COF levels on the rail in real-time and is available to fix on any train that allows certified test equipment to be mounted. The device measures wheel slip during (de)acceleration, covering COF over a range of 0.01–0.50.

By analysing friction loss data, networks can detect low adhesion at any location and confirm with ease if rails have been cleaned successfully. Standard and premium models are offered depending on the availability of equipment and level of accuracy and scale required.

The LPS Track Contamination Detection System (TCDS) utilises pre-existing track circuits in the network to monitor demanding areas around the clock. A Track Contamination Device is attached to multiple track circuits, turning each section of rail into a sensor. The sensors calculate the level of contamination by measuring the short-circuiting of the signalling systems. This is a rough but real-time estimate of the rail contamination.

The TCDS is easy to install and is long lasting, providing insights for years to come. Due to the variation in pre-existing track circuits in the field, LPS offers a selection of non-invasive and invasive options to choose from.

Contact LPS for more information and keep up to date with them on LinkedIn.


Keeping
trains
on track
Minimize the impacts of slip-slide conditions and keep performance, maintenance and safety on track with high speed rail cleaning laser technology.
LPS
LASER PRECISION SOLUTIONS
laserprecisionsolutions.com