



# Surface Treatments

## Captive Bidirectional Abrasive Friction Enhancement

Retexturing road surfaces to a safe condition in a quick, environmentally responsible, and cost-effective way

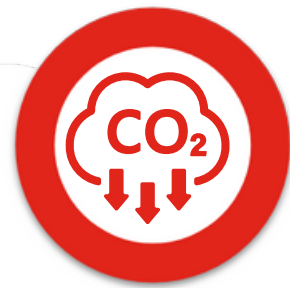
Captive bidirectional abrasive friction enhancement is a reliable, **cost-effective**, **environmentally friendly** surface treatment that will **extend the life** of your highway asset, and is therefore a valuable process when adopted and used as part of an effective asset management strategy.



Reduces  
Costs



Improves  
Safety



Lowens  
Carbon



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# Captive Bidirectional Abrasive Friction Enhancement

WJ has specialist equipment and experienced people to deliver exceptional surface captive bidirectional abrasive friction enhancement techniques to our highways and runways that improve skid resistance on slick surfaces and keep people safe.

Skid resistance is dependent on both the micro-texture and macro-texture of a given substrate. Over time, trafficking and other factors cause skid resistance to degrade through binder bleed, aggregate embedment, and/or the polishing of exposed aggregate. Inadequate skid resistance will lead to higher incidences of skid-related accidents, especially in wet conditions.

It is recognised that road surface micro-texture and macro-texture are the primary influencing factors in effective braking. At vehicle speeds of 30mph or higher, the effect of macro-texture, as measured by texture depth, becomes increasingly significant whilst micro-texture is the primary influencing factor in effective braking at lower speeds.

The maintenance of both properties is key to sustaining effective skid resistance across the road network.

WJ is committed to excellent customer service and ensures that engineers are available across the USA to inspect and recommend the most appropriate captive bidirectional abrasive friction enhancement technique.



## Services

- Captive bidirectional shot blasting retexturing.
- Micro GripTester surveys.
- Truck mounted for rapid treatment of large areas.
- Surface preparation

## Remedial Works

WJ can also provide remedial works and can guarantee we will raise skid resistance to achieve specified levels. We cover a range of remedial work issues that include:

- Not enough texture depth
- Over rolled
- Loose chippings
- Not achieving specifications





# Uses and Benefits

- Cost-effective solution to increase skid resistance and extend asset life.
- Enhances road safety and reduces accidents.
- Ideal for all asphalt and concrete substrates.
- Environmentally friendly, materials recycled and a very low carbon footprint.
- Quick single vehicle process with no sweeper required providing minimal traffic disruption.
- Provides initial skid resistance on new asphalt and concrete surfacing.
- Restores original colour to decorative resin-based surfacing systems.
- Does not damage road striping, inset pavement markers or expansion joints.
- Delays the need for resurfacing.
- Micro GripTester surveys to identify and report on surface condition.

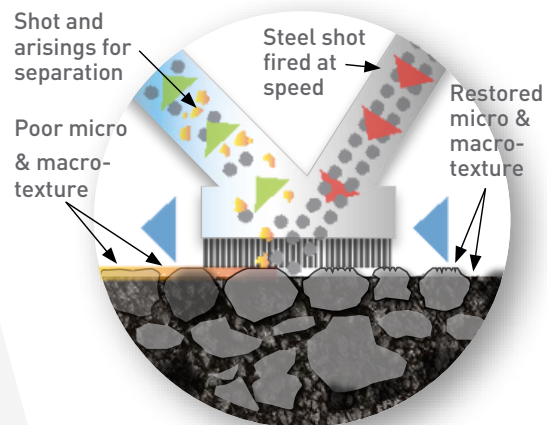


# Asphalt Retexturing

The captive shot blasting abrasion system can be used on all asphalt substrates. Graded steel shot fired at an optimum velocity is used to abrade and reprofile the exposed aggregate in the substrate.

The captive bidirectional abrasive friction enhancement process is managed from the cab, using a computer system and touchscreen with high-quality onboard cameras monitoring the activity. The operator has a close view of the blast head and the surface throughout the process and can make fine adjustments.

The spent shot, excess bitumen, aggregate fines, and other detritus are collected by a powerful suction system, separated and the shot is reclaimed and reused.



# Concrete Retexturing

WJ has adapted its captive bidirectional abrasive friction enhancement system for use on concrete surfaces. By varying the speed of the vehicle, increasing the size of the shot, and the velocity at which it is propelled, a substantial increase in both micro-texture and macro-texture can be achieved.



# Environmental Benefits

WJ's surface captive bidirectional abrasive friction enhancement processes are environmentally advantageous maintenance options.

In a lifecycle analysis report on WJ's captive bidirectional abrasive friction enhancement process, it was found that there is a saving of 96% in carbon emitted compared to resurfacing a road.

Captive bidirectional abrasive friction enhancement processes are quick to complete, they extend asset life and delay the need for full resurfacing. The environmental benefits are significant with no natural aggregates being consumed, low carbon emissions, and arisings being recovered and recycled.

Our captive bidirectional abrasive friction enhancement equipment blasts, recovers, and recycles the steel shot along with other detritus from the substrate. Recovered fines can be used as a filler for Type 1 granular sub-bases.

All other arisings are captured and disposed of as non-hazardous waste in accordance with waste regulations.

# Good Asset Management

Captive bidirectional abrasive friction enhancement of a highway can either be carried out across the full width of the carriageway or in the vehicle wheel tracks only, as required by the client.

All sites are pre-inspected to ensure that they are suitable.

In accordance with best practice under the asset management approach, texture depth and skid resistance values are measured both before and after treatment using a Findlay Irvine micro GripTester and a full report is then produced for the client.

