



BREINING
FAYAT GROUP

SLURRYPAVER AND NOVASEALER

COLD ASPHALT SLURRY APPLICATION MACHINERY



Cold asphalt slurries: a modern solution to road maintenance

Cold asphalt slurries have been in constant progress for the past 30 years. They meet a need that is both economic and environmental and are an essential part of the maintenance of a country's road assets.

BREINING, world leader and pioneer in the manufacture of cold asphalt slurry machines proposes, via the maintenance department of the FAYAT group, a complete and innovating line of application machines - the Slurry Pavers and Novasealers.

Reasonable maintenance

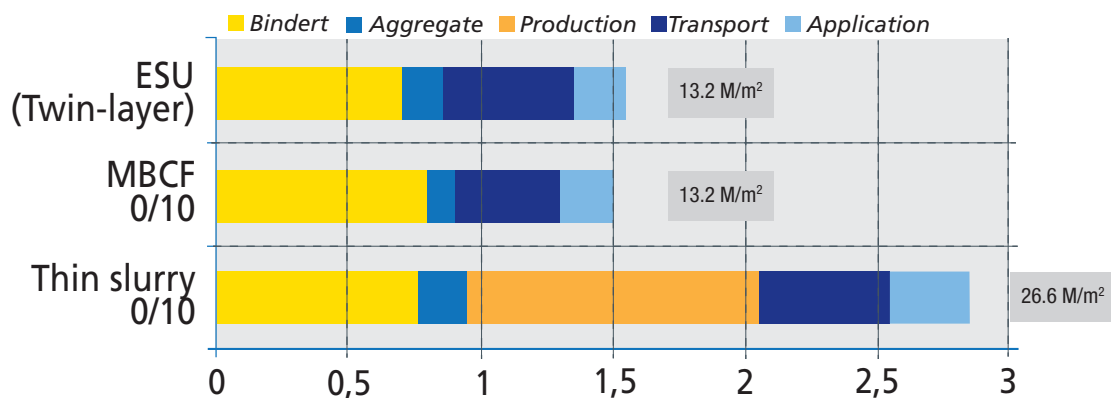
- Less material consumption, cold asphalt slurries are thin road surfaces
- Less energy consumption, cold asphalt slurries are applied at ambient temperature (without heating the materials)

A must-have road maintenance solution

- Extend road service life
- Return the road surface to its original characteristics
- Low cost solution making it possible to treat more square metres for a given budget
- Technique applicable to all traffic and all types of roads (main, rural, urban, etc.)



Energy consumption



Energy costs and polluting emissions are very low.

Cold asphalt slurries can be applied as maintenance on all types of road surface.





A technique without waste materials

The Cold asphalt slurry method is composed of a mixture of emulsion and aggregate.

The aggregate is emulsion-coated, and therefore there are no “loose aggregates”.

Compacting is carried out by the traffic itself.

Advantages of cold asphalt slurries

Cold asphalt slurries offer a large number of advantages both for users and operators.

This technique fulfils several road maintenance needs.

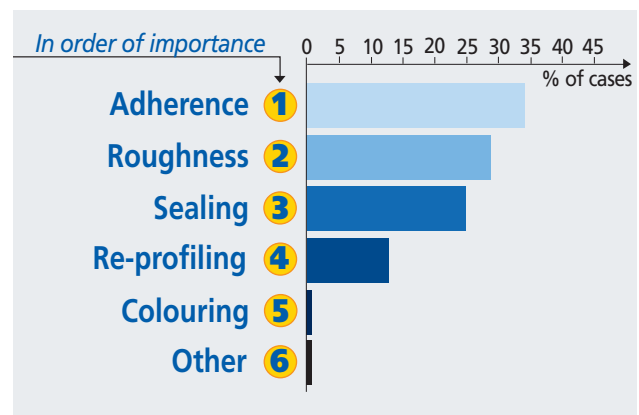
Sealing, for which cold asphalt slurries can be a solution, but also adherence and roughness are obtained using the cold asphalt slurry technique.

Immediate opening of the road

As the breaking of the mix is very quick, the road can be re-opened on average half an hour after application.

Road closures are therefore not required, as the work is often done lane by lane.

Cold asphalt slurries can also be used for functions such as light re-profiling, hard shoulders, accident prone zones, cycling tracks, sites with high tangential strains (crossroads, braking zones).



Operator safety and hygiene

- An aggregate mixed with the emulsion without releasing dust
- An emulsion at ambient temperature
- No emulsion spraying
- A highly compact working unit (only one machine) allows discrete and safe movement for operators





A production and application unit

Machine that simultaneously produces and applies cold asphalt slurries. It is a highly mobile plant that has control over the entire process.

Component storage

All the required materials for the technique are united in the same machine:

- An emulsion tank
- An aggregate hopper
- A water tank
- An additive tank
- A cement hopper
- A colour hopper (option)
- A fibre cutting system (option)

Production of the final mix

The components are transported to a mixer which ensures the consistency of the mix.

Liquids can be sprayed using air pressure or pumps.

Application

The Spreader attached to the rear of the vehicle can spread and distribute the mix on a working width of up to 4 metres.

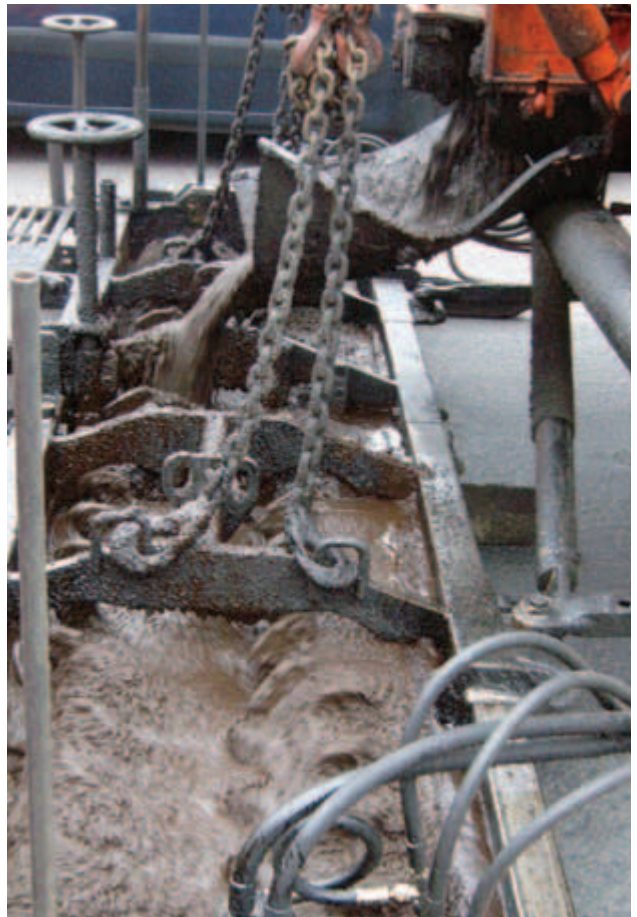


Pressure Slurry Paver

Pump Novasealer



Consistent mix



The control station on the rear platform makes it possible to perfectly control the mix thanks to a direct and safe view of the ongoing work.

The ergonomic console gathers together all functions (flows and spreader handling).



Machine operation

The cold asphalt slurry formula includes at least emulsion, aggregates, an additive (or dope), water, cement (or lime milk). It is also possible to add glass fibres or colouring to the mix. All these ingredients must feed the mixer in accurate doses. The mixer guarantees the finished product's quality. The spreader provides the finish.

Liquid tanks

The tanks are located at the front of the vehicle.
The flow of the different fluids is provided by air pressure or by lobe pumps for the water and additives and by a gear pump for the emulsion.

The aggregate hopper

The hopper can stock from 6 to 12 m³ of aggregates.
A weighing belt provides the flow of materials to the mixer.
A 3 dimension weight sensor under the belt guarantees continuous dosage whatever the machine position.

The cement hopper

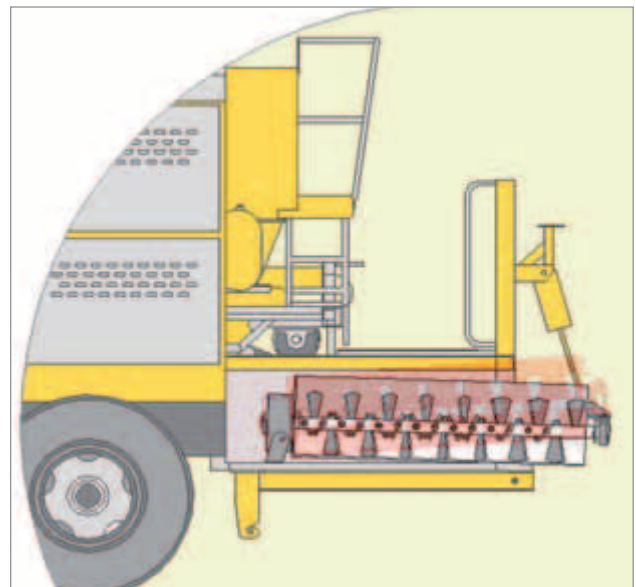
The capacity (600 litres) of the hopper guarantees one day's production.
Cement dosage and distribution are carried out by an extractor screw.

Mixer

The 2-shaft mixer guarantees the perfect mix.
The mixer container is in 2 parts to avoid clogging problems.
Slope compensation is provided using a hydraulic cylinder.
The mixer blades have 3 different angles (ingredient intake, mixing, extraction towards the spreader).

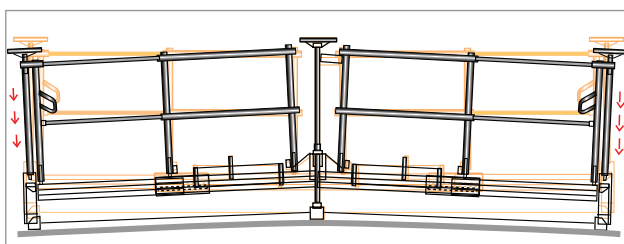
Application table

The width is adjustable from 2.50 m to 4.00 m.
The table adapts perfectly to road surface geometry and is fitted with multi-pin quick connectors.

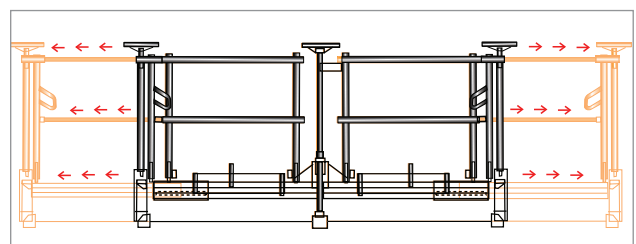


Mixer

Adaptation to the road surface profile



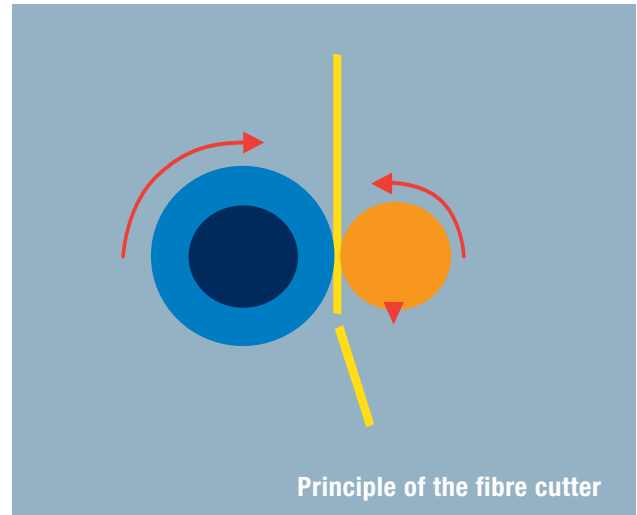
Variable width



Novasurfacing: a new concept for cold asphalt slurries

Novasurfacing is the combination of several components on a single machine. The Novasealer is the only machine capable of meeting the standards for this technology. The Novabox is the new application table, specially designed to apply large grade (0-10 mm) cold asphalt slurries. The table is heavier and makes it possible to avoid oscillation phenomena. It also has the hydraulic application height system as a standard. Novasurfacing also includes the introduction of glass fibres into the mix, as well as the possibility of spreading a bitumen glue at the same time as the mix.





The bitumen glue layer

In the same way as hot asphalt binders, it is possible to apply a bitumen glue layer as the interface with the cold asphalt slurry.

This linking coat can be spread at the same time. BREINING has developed a machine that groups together a slurry spreader and a cold asphalt slurry machine.

Besides the fact that the life span of the road surface is extended, the bitumen glue layer is used to prevent peeling phenomena, especially on scraped or concrete roads.

The introduction of glass fibre

NOVASURFACING also consists in adding glass fibres to the mix.

These fibres ensure several functions. Firstly, the significant increase in adherence thanks to the possibility of a discontinuous recipe.

Furthermore, the fibres increase the product's rheological properties thereby reducing run-out.



NOVASYSTEM, the computerised dosing and machine control management system

The success of cold asphalt slurry works is especially based on the capacity of the operators to apply the correct formula to obtain the required mix.

Computerisation is the guarantee of correct dosing throughout the works.

NOVASYSTEM makes it possible to control all the formula ingredients (aggregate, water, emulsion, additive, cement, glass fibres).

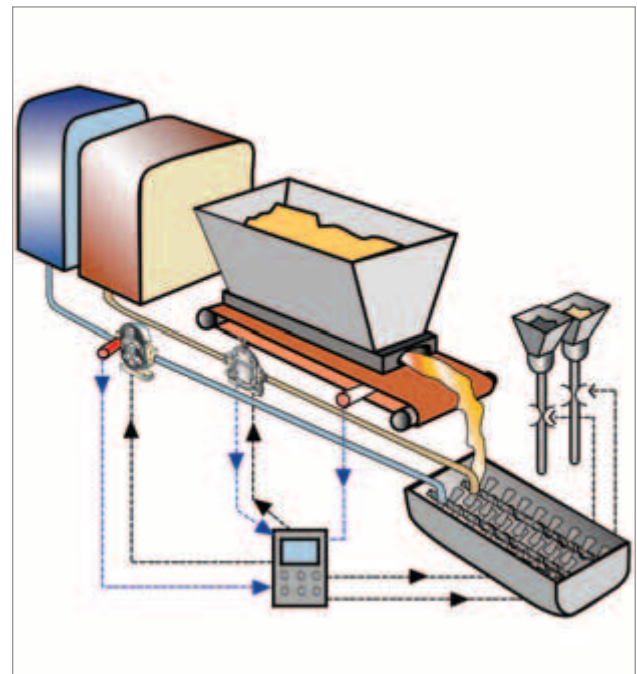
The dosing computer is ergonomic and very intuitive for the operators.

BREINING also proposes a machine calibration service. The regular inspection (after each season) is essential to successfully complete the works. Regular calibration makes it possible to optimise machine maintenance costs. The inspection bench is fully autonomous and mobile, it can be transported in a container.



Dosing computer

Calibration bench



NOVASYSTEM operation principles

Traceability

The EC marking of cold asphalt slurries applicable since January 1st 2011 implies not only the precise regulation of doses, but also the traceability of the quantities applied and their application conditions.

Indeed, as cold asphalt slurry is applied on site by the machine, it is essential, in the framework of this new standard, to check production quality directly on the machine when it is operating.

The 7 advantages of a traceability system

- Make the production control system reliable
- Improve communications with the customer
- Make a difference in a competitive environment
- Share a line of existing management tools (SIG type)
- Prove to the customer that the investment is profitable
- Optimise movements and thus reduce polluting emissions
- Benefit from a privileged relationship with the equipment supplier



Examples of supplied data

- Site cartography
- GPS position, date and time
- Transport, waiting and spreading time
- Instant dosing
- Surfaces and quantities
- Temperatures
- Humidity



Data transfer

There are several types of data transfer depending on the needs:

- Retrieval of an Excel file (using a USB stick)
- Retrieval of an Excel file and integration into operating software
- Transfer by GSM with access to a web platform, associated to the sending of an email summarising the works

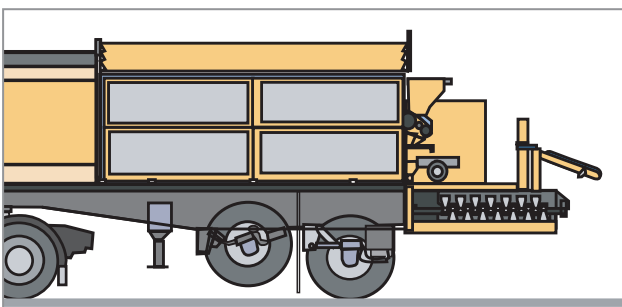


Productivity

The choice of a cold asphalt slurry machine will determine the productivity of the works to be carried out. It must be a compromise between the necessary versatility on certain structures, and the daily estimated production. The choice of the machine will also depend on the associated logistics. Furthermore, compliance with on-board loads, especially on major production works, implies quick, effective and versatile loading tools.

Truck mounted machines

When versatility, and especially the need for compactness, are required, a truck mounted vehicle is best. Making it easier to move in restricted spaces (city centres).

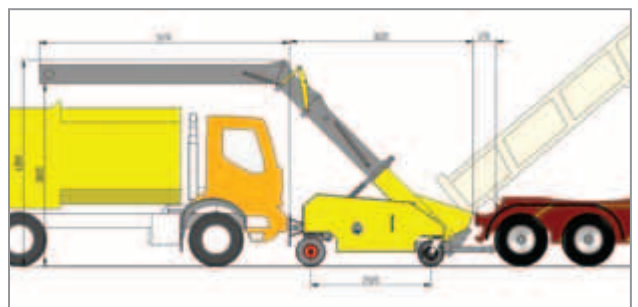


Raised axles on articulated trailers

The raised axle system makes it possible to propose a "works" configuration with 1 raised axle giving better manoeuvrability and limiting the risk of skidding. During transfer the 2 axles are on the ground to maximise the load.

Machines on semi-trailers

The articulated trailer is especially recommended on linear road works requiring a high daily production. Its capacities make it possible to limit the number of loads.



Topfeeder re-supply

For certain high productivity works, it is possible to combine a "standard" machine with a frontal re-loader. This system makes it possible to optimise machine profitability on major works while keeping the versatility for other applications.



Models	Capacities	Available options				
		NOVASPRAY	NOVASYSTEM	GLASS FIBRE	NOVABOX	TOPFEEDER
SLURRY PAVER	On carrier 6,000/8,000			●	●	●
	On semi-trailer 10,000/12,000			●	●	●
NOVASEALER	On carrier 6,000/8,000	●	●	●	●	●
	On semi-trailer 10,000/12,000	●	●	●	●	●

Models	Capacities in litres	Daily production at 10 kg/m ²
NOVASEALER 6000 SLURRY PAVER 6000	Aggregate: 6,000 Emulsion: 3,000/2,000 Water: 2,200/2,000 Cement: 600 Dope: 300	1,200 m ² or 7,200 m ² per day
NOVASEALER 8000 SLURRY PAVER 8000	Aggregate: 8,000 Emulsion: 3,000/3,500 Water: 2,200/3,500 Cement: 600 Dope: 300/500	1,500 m ² or 9,200 m ² per day
NOVASEALER 10 000 SLURRY PAVER 10 000	Aggregate: 10,000 Emulsion: 5,000 Water: 4,000 Cement: 600 Dope: 500	1,800 m ² or 10,800 m ² per day
NOVASEALER 12 000 SLURRY PAVER 12 000	Aggregate: 12,000 Emulsion: 5,000 Water: 4,000 Cement: 600 Dope: 500	2,100 m ² or 12,600 m ² per day

www.breining.fayat.com

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BREINING

Maschinen- und Fahrzeugbau GmbH

Uferstraße 24

73630 Remshalden-Grunbach

Deutschland

Tél. : +49 (0) 7151 977 100

Fax : +49 (0) 7151 977 111

info@breining.fayat.com

SECMAIR

Rue des Frères-Lumière

BP 10042

53230 Cossé-le-Vivien

France

Tél. : +33 (0)2 43 98 27 76

Fax : +33 (0)2 43 98 86 49

info@secmair.fayat.com

