High-performance technology for road rehabilitation

Cold Recycler WR 4200
A power package for better roads

If an acid test were to take place for the fastest, most economical and high-quality recycling of large road pavements, then our cold recycler WR 4200 would most certainly be the superior champion. The machine scarifies large quantities of the distressed asphalt pavement, blends additives into the granulated material and mixes it to produce a high-quality, homogeneous construction material mix, all in one single working pass. The newly produced mix is then laid down true to grade and slope and can be trafficked again immediately once final compaction has been completed. The WR 4200 is the flagship of Wirtgen’s fleet of cold recyclers, offering a multitude of application-related advantages. You can profit from this array of cutting-edge technology, and conquer the roads of the world.
The WR 4200 is a particularly valuable asset when it comes to recycling roads efficiently over the full width of the individual carriageways.

Its continuously adjustable working width, ranging from 3.00 m to 4.20 m, offers a broad scope of possible applications.

The twin-shaft pugmill mixer has a capacity of up to 400 tons/hour and produces a homogeneous construction material mix with long-term high bearing capacity.

The innovative cold recycling technology is beneficial to the environment and saves natural resources.

The WR 4200 has a passion for the efficient rehabilitation of large roads.

High-quality pavements are produced in one single working pass.

The future belongs to recycling.
All-in-one road rehabilitation leads the way ahead

The following equipment is needed for rehabilitating a road pavement:

**Conventional method**
- Asphalt paver
- Trucks
- Wheel loader
- Mixing plant
- Cold milling machine
- Trucks

**Modern cold recycling**
- Cold recycler WR 4200

Many work steps combined into one machine

One thing is certain: Conventional, high-effort methods of road rehabilitation will be outdated very soon, and “all-in-one” will be the magic word. What used to be accomplished with much effort and high costs in many individual work steps is now mastered in a one-step operation by cold recycling. The smallest possible number of machines and low labour requirements, combined with a tremendous time-saving potential, result in unbeatable cost advantages. These strong features will fill your order books, and the competition will go away empty-handed. The cold recycler WR 4200 is a real ace, providing you with an excellent footing for any job to come.
The WR 4200 combines many work steps, thus saving machine capacity and labour requirements on a grand scale.

The overall concept guarantees fast completion of any job and minimum traffic disruptions.

No costs are incurred for stockpiling or dumping material in disposal sites.

The recovered material can be fully reused, thus saving both energy and natural resources.
Recycling carriageways in full width: top quality in one machine pass

Large, wide roads are the WR 4200’s natural habitat: The power package made in Windhagen recycles them with neither joint nor seam. While other, comparable machines have difficulties with road pavements of this size, needing several machine passes, the WR 4200 produces a seamless high-quality base layer in just one machine pass.

What’s more, the WR 4200 features a variable working width: The two front milling drums can be adjusted continuously and independently to working widths ranging between 2.80 m and 4.20 m, even during the recycling operation. The advantage is obvious, as it makes the WR 4200 a real asset by offering a wide range of possible applications.

A perfect solution for motorway construction

Motorway project: The centre and left lanes are immediately reopened to traffic as soon as recycling is complete

All components adapt to the specified working width
The paving screed and spreading auger are adapted to the specified working width quite as easily.

Lateral displacement of the front milling drums is effected quite simply at the push of a button.

The pugmill mixer thoroughly mixes the entire milled material with the binding agents, irrespective of the working width.

Variable working width of up to 4.20 m included

Operating with the tremendous working width of 4.20 m
Innovative technology sets the standard

Lots of high-tech in the cold recycler

The design of our highly modern WR 4200 reflects our long-standing experience as pioneers in cold recycling. All components are perfectly adapted to one another. The milling drums granulate the damaged road pavement very effectively to a depth of up to 200 mm. The pugmill mixer mixes the scarified material thoroughly with the injected quantities of binding agent and water, producing a new, homogeneous mix in situ. The spreading auger spreads the material uniformly across the full width, enabling the paving screed to place and pre-compact it with maximum precision. After compaction by rollers, the recycled layer serves as a base layer for the new road.
The binding agents are carried along separately in tanker trucks and are delivered to the injection bar at the integrated pugmill mixer via hose connections.

The machine’s design enables it to easily push the tanker trucks.

An integrated crusher bar reliably prevents slabs from breaking out of the asphalt pavement during the milling operation.

The engines comply with the strict exhaust emission standards stipulated by the US Environmental Protection Agency (EPA, Tier III) and the EU (EU-97/68/EG Stage 3a).
400 tons of homogeneous mix per hour – a class of its own

The WR 4200’s centrepiece is certainly its powerful twin-shaft pugmill mixer, which is dimensioned in accordance with the well-known maxim that one can never have too much power. Binding agents and water are added to the milled material in the mixer, precisely metered via a microprocessor unit. After that, the mixer can demonstrate what it is capable of: Its two shafts mix all materials very thoroughly, producing a highly homogeneous construction material mix. Last but not least: It produces top quality results even when mixing pavement materials of different origin.

Top mixing quality even when using different source materials
For high daily production rates

Both the speed of the mixing shafts and the arrangement of the mixing arms and blades are fine-tuned to achieve optimum mixing results.

A robust, failsafe drive guarantees high power even when operating at full load.

The mixing arms, mixing blades and interior lining of the mixer housing are made from highly wear-resistant material.

Mixing arms, blades and interior lining are easily accessible and can be replaced individually.

The mixing blades are easily accessible and can be replaced individually.

The mixer has lots of power.
Paving true to grade and slope is part of the repertoire

Direct paving with pre-compaction

Only the best is good enough for our WR 4200: This principle also applies when it comes to placing the recycled material. We have equipped the cold recycler with Vögele’s highly professional paving screed type AB 500 TV. Once the spreading auger has spread the homogeneous mix produced in the mixer uniformly across the entire working width, the Vögele screed places and pre-compacts the new base layer directly and in one single pass. Rollers effect final compaction in a last operating step, completing the impressive work result.
Several highly modern levelling systems are available to guarantee that the recycled material is placed true to grade and slope.

The paving screed leaves behind a pre-compacted layer for rollers to effect final compaction.

A non-contact ultrasonic system scans the height, providing highly accurate results.

The paving screed dispenses with the need to employ graders.

The road can be trafficked again as soon as rolling has been completed.
Mature engineering offers top-quality results

The WR 4200 produces homogeneous mixes that comply with a specified quality by using different construction materials and binding agents in the recycling process. To be able to do this, the recycler is equipped with different injection systems. These deliver the liquid binding agents from tanker trucks to the recycler’s twin-shaft pugmill mixer via hose connections and inject them into the material to be recycled. Suitable binding agents include cement, bitumen emulsion or the innovative foamed bitumen. Foamed bitumen is produced by injecting water and compressed air into hot bitumen immediately prior to its entrance into the pugmill mixer, thus increasing its original volume many times.

Use different binding agents as required
The injection of binding agents is governed by a microprocessor unit which ensures that the mix has a consistently high quality.

The bearing capacity of hydraulically bound base layers can be improved by adding cement.

Bitumen emulsion and cement produce bituminous / hydraulically bound base layers of high quality.

Foamed bitumen and cement produce high-quality, stable base layers of high flexibility, which can be trafficked again soon after completion.
Simple operation – a valuable asset in the bargain

Clearly labelled control elements in the operator’s platform and easily accessible panels at the milling drums and the paving screed facilitate work for the machine operators and ensure the cold recycler’s economical operation. The operating personnel is always in full control as the operation progresses almost automatically, governed by the SPS which intelligently links all relevant sub-processes. Its microprocessors keenly monitor all process parameters and regulate the addition of binding agents with maximum accuracy. It’s no wonder, therefore, that only a small crew is needed to operate the machine.

Automatic processes ensure full control
Hydraulically adjustable service flaps provide good access to all points of maintenance and inspection, enhancing the machine’s user friendliness.

Displays keep the machine operator up to date on important production details.

Current actual and target values of the quantities to be added are displayed continuously.

The high level of automation enables the operating crew to fully concentrate on monitoring the recycling operation.

The tried and tested Wirtgen levelling system supports the operating crew in adhering to the specified working depth.
Traffic disruptions are inevitable when carrying out road rehabilitation measures. Reducing them to a minimum was an important point, however, in the requirement specifications of the WR 4200’s design engineers. When foamed bitumen is used as a binding agent, for instance, the road pavement can be trafficked again immediately once final compaction has been completed. The generously dimensioned lighting system enables the recycler to operate continuously even in darkness. A practical example: A main road is recycled overnight, and the machine’s working lights provide excellent visibility. The concept works out: The early morning rush-hour traffic flows smoothly.
When recycling individual traffic lanes, the traffic can flow along smoothly on the remaining lanes.

Working lights illuminate the vital points on both the recycler and the road when operating in darkness.

Comprehensive safety features ensure the recycler’s safe operation on the job site.

Guaranteeing smooth flow of traffic

Perfect illumination of the job site at night

Traffic can flow safely along the job site