

A mixing plant that comes to the job site.

Mobile cold recycling mixing plant KMA 220 / KMA 220i



Outstanding features of the KMA 220 / KMA 220i cold recycling mixing plant

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2 | LARGE WATER TANK

4,500-litre water tank for reliable water supply during the recycling process.

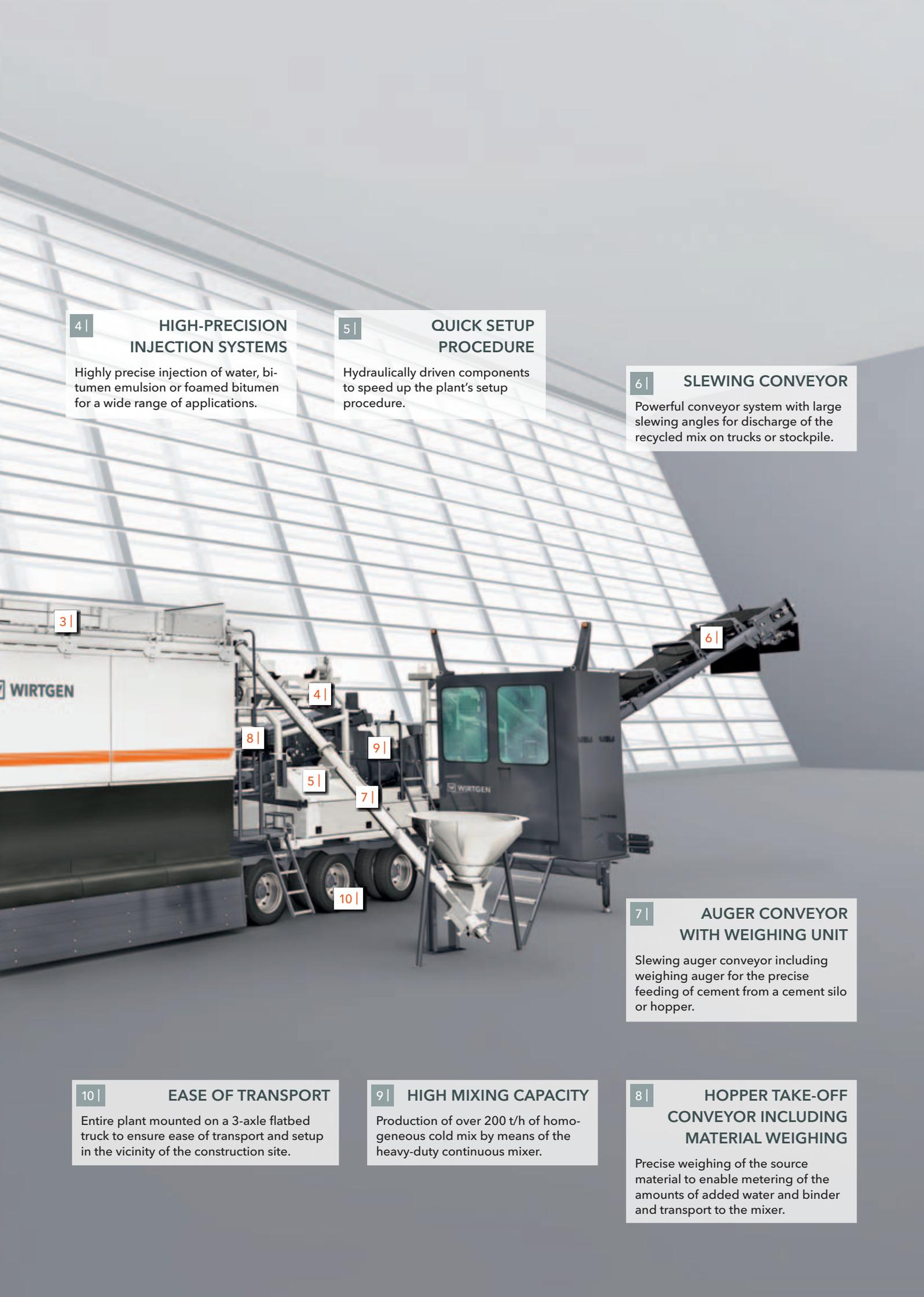
3 | LARGE, TWIN-CHAMBER PROPORTIONING HOPPER

Large proportioning hopper with hydraulically folding vibrating screens for reliable screening of oversize material.

1 | POWERFUL DIESEL ENGINE

High-performance diesel engine to ensure independence from public power supply.





4 |

HIGH-PRECISION INJECTION SYSTEMS

Highly precise injection of water, bitumen emulsion or foamed bitumen for a wide range of applications.

5 |

QUICK SETUP PROCEDURE

Hydraulically driven components to speed up the plant's setup procedure.

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SLEWING CONVEYOR

Powerful conveyor system with large slewing angles for discharge of the recycled mix on trucks or stockpile.

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WIRTGEN

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AUGER CONVEYOR WITH WEIGHING UNIT

Slewing auger conveyor including weighing auger for the precise feeding of cement from a cement silo or hopper.

10 |

EASE OF TRANSPORT

Entire plant mounted on a 3-axle flatbed truck to ensure ease of transport and setup in the vicinity of the construction site.

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HIGH MIXING CAPACITY

Production of over 200 t/h of homogeneous cold mix by means of the heavy-duty continuous mixer.

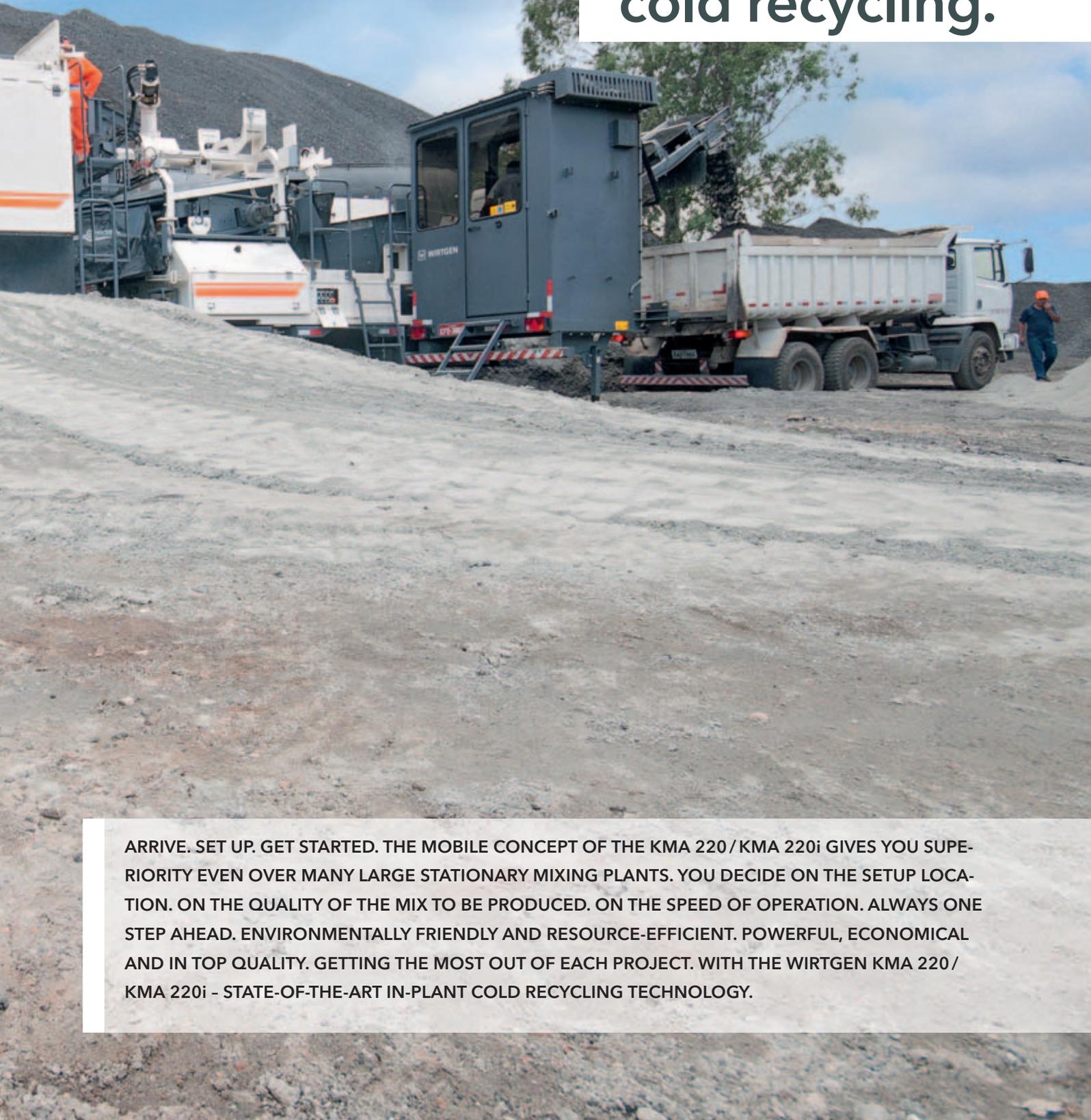
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HOPPER TAKE-OFF CONVEYOR INCLUDING MATERIAL WEIGHING

Precise weighing of the source material to enable metering of the amounts of added water and binder and transport to the mixer.



State-of-the-art in-plant cold recycling.



ARRIVE. SET UP. GET STARTED. THE MOBILE CONCEPT OF THE KMA 220 / KMA 220i GIVES YOU SUPERIORITY EVEN OVER MANY LARGE STATIONARY MIXING PLANTS. YOU DECIDE ON THE SETUP LOCATION. ON THE QUALITY OF THE MIX TO BE PRODUCED. ON THE SPEED OF OPERATION. ALWAYS ONE STEP AHEAD. ENVIRONMENTALLY FRIENDLY AND RESOURCE-EFFICIENT. POWERFUL, ECONOMICAL AND IN TOP QUALITY. GETTING THE MOST OUT OF EACH PROJECT. WITH THE WIRTGEN KMA 220 / KMA 220i - STATE-OF-THE-ART IN-PLANT COLD RECYCLING TECHNOLOGY.



Setup of the KMA 220/ KMA 220i is flexible and can be tailored to fully suit conditions on the job site.

Mobile mixing plant for cold-mix production

SHORT HAULAGE DISTANCES - BIG PERFORMANCE

Let's be honest: innumerable truck journeys between the mixing plant and remote job sites are not only very time-consuming, they're also a burden on your budget. WIRTGEN engineers have now designed the ideal solution to this problem with the mobile cold recycling mixing plant KMA 220/KMA 220i. The plant can easily be transported from one job site to the next and is quickly set up in the immediate vicinity of the site. This saves time and truck capacities, and is also highly beneficial to the

environment. The plant's integrated diesel engine makes it independent from public power supply.

What's more, the KMA 220/KMA 220i impresses with exceptionally high daily production rates of a consistently high quality. The cold mixes can be produced from various construction materials and used for high-quality construction projects. The result: this mobile concept represents economical road rehabilitation "par excellence".



The plant is transported by means of a standard tractor vehicle.



Mixing a wide variety of construction materials

WIDE RANGE OF APPLICATIONS

A particularly impressive feature of the KMA 220/KMA 220i is its capability to mix many different unbound source materials. The plant can produce cold mixes from a large variety of new aggregate mixtures, reclaimed recycling materials and binders. Reclaimed asphalt pavement and other construction materials recovered from existing road pavements are suitable for environmentally friendly recycling and reuse.

Suitable binders include cement, bitumen emulsion or foamed bitumen, which are delivered in special tanker trucks. The precise quantities of binders and aggregate to be added are determined by preliminary investigations in a road laboratory. The plant uses them to produce a homogeneous mix with the specified material properties. Foamed

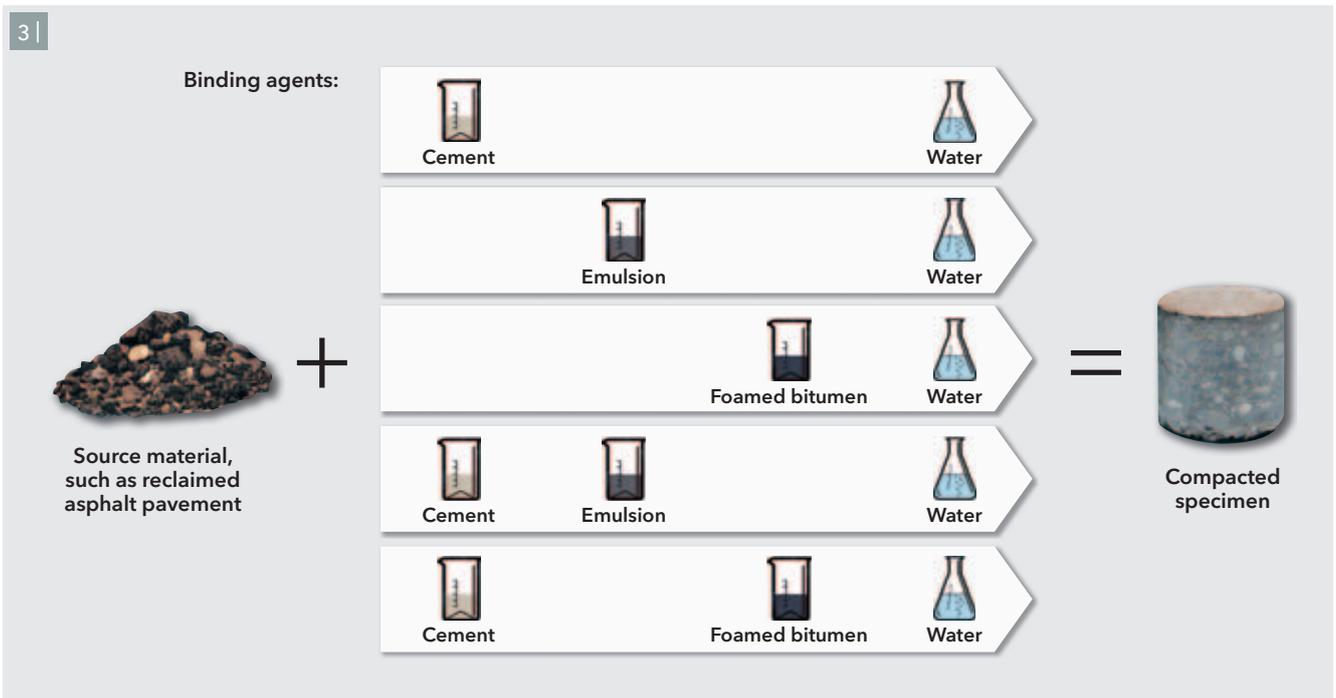
bitumen is a highly economical binder as it requires very low application rates.





1 + 2 | The performance of the specimens manufactured in the road laboratory is verified by means of mix design testing.

3 | Broad range of different construction materials and binders.





Trucks keep changing "on the fly", making short work of construction projects at a mixing rate of, for example, 200 t/h.

Compact plant offering high mixing performance

THE KMA 220 /KMA 220i TRIUMPHS IN PERFORMANCE COMPARISON

The discharge conveyor, which can be slewed about 55°, transports large quantities of mix.

At first glance, the KMA 220/KMA 220i appears comparatively small and inferior in performance to the stationary hot mixing plants. Quite the opposite is true, however: the

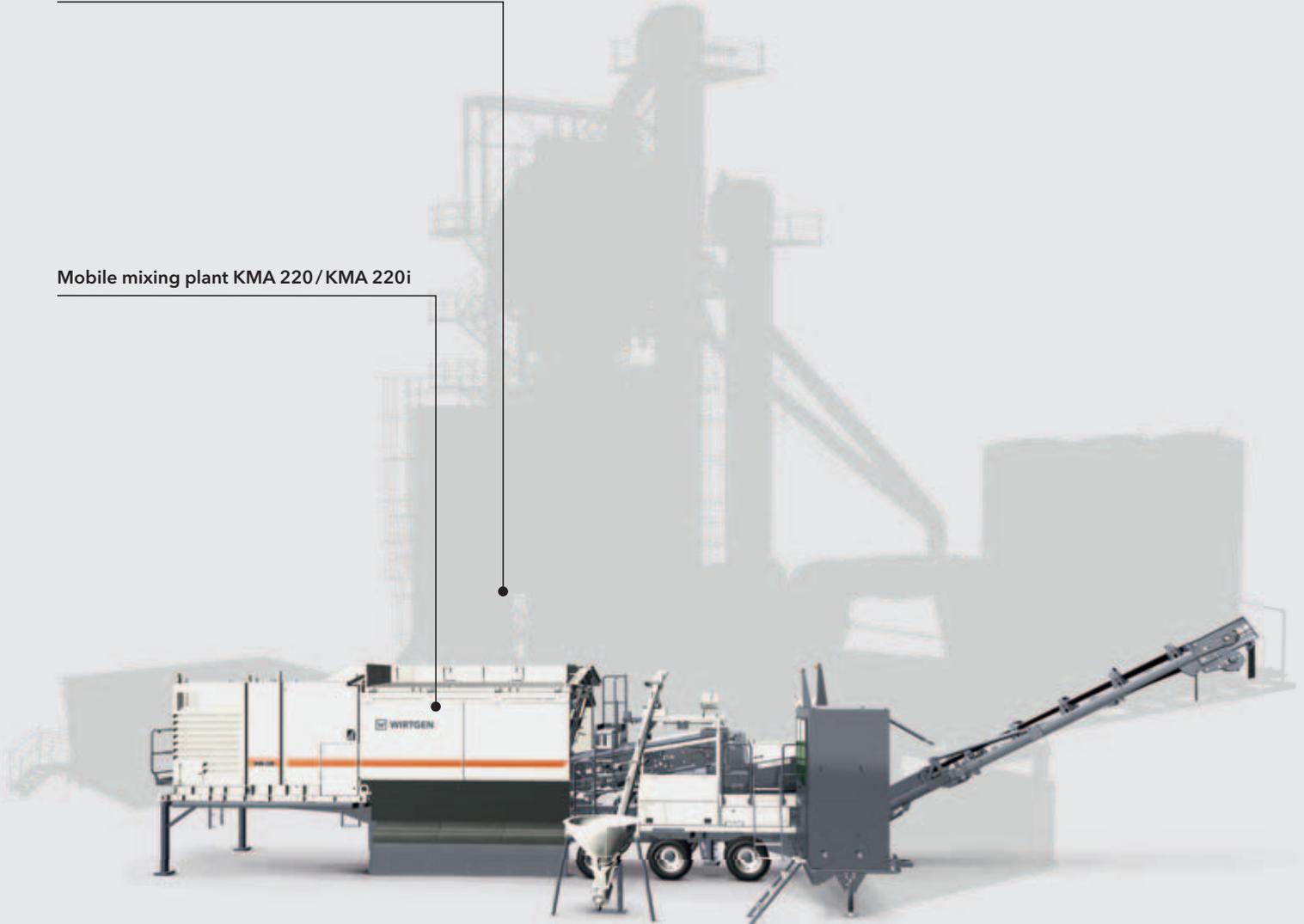
compact plant possesses ample power. Driven by a powerful diesel engine, it produces an astonishing 220 tonnes per hour of high-quality mix. This mixing performance surpasses even that of many large stationary plants. Performance is not all that counts, however. A continuous supply of material to the site is also of paramount importance. This is guaranteed by the KMA 220/KMA 220i's reliable loading system. The discharge conveyor has a wide slewing range, which enables even long semitrailers to be loaded to full capacity.

When operating at a mixing capacity of 200 t/h, one truck load of 20 tonnes of cold recycling mix is produced every 6 minutes. This amount of material enables a 150 m long, 4 m wide and 15 cm thick section of base layer to be paved every hour.



Stationary hot mixing plant

Mobile mixing plant KMA 220/KMA 220i





Mix production in the immediate neighbourhood of the site or stocking location facilitates the overall management of the construction project.

Mobility pays off – for the environment, too

IMMEDIATE SITE VICINITY - SHORT HAULAGE DISTANCES

The KMA 220/KMA 220i is a mixing plant that comes to the job site, making long haulage distances from the production site of the mix to the paving site and back a thing of the past. It enables you to save time and in particular costs, reducing expensive truck journeys and fuel consumption to a minimum. The environment benefits as well: the reclaimed material can be fully reused, which helps to save

natural resources. And what's more, the source materials need neither be dried nor heated to be suitable for mix production.

The mobile plant is equipped with an energy-efficient diesel engine that is capable of working up to two full days with just one tank filling.



Short truck haulage distances result in reduced fuel consumption and CO₂ emission.

Permanently mounted on a flatbed semitrailer

MOBILITY IS A REAL ACE

Unparalleled mobility is, of course, the hallmark of the KMA 220 / KMA 220i cold mixing plant. Its intelligent design enables the plant to simply be "packed up" and moved to the next job location quickly and efficiently. All that needs to be done is to swing in the cement auger, discharge conveyor and operator's cabin, and to connect the plant to the tractor vehicle. A standard tractor vehicle is fully sufficient for transport as the plant is equipped with standardized connections.

There are no individual components requiring separate transport. The complete mixing plant is securely fastened on the flatbed trailer. Reversing lights attached to the operator's cabin ensure safety on the road. The plant's transport dimensions adhere to the international directives for road traffic. A special permit is not required.

*The KMA 220/
KMA 220i sets out,
packed up to com-
pact dimensions.*



*Easily accessible
plug-and-socket
connections enable
simple connection
to the transport
vehicle.*



Set up for operation in no time at all

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ARRIVE, SET UP, GET STARTED

Yet another highlight: the KMA 220/KMA 220i has scarcely arrived on the job location before it is ready to take up production. Sturdy supports are folded out manually, thus ensuring the plant's stability. Hydraulically operated supports are additionally mounted in the areas below the water tank and between the axles, carrying the plant's weight. The hydraulic supports enable precise alignment of the entire plant. Sturdy panels are folded down to form an approach ramp and to protect the space underneath the KMA 220/KMA 220i. All that remains to be done now is swing

out the operator's cabin, discharge conveyor and cement auger at the push of a button, and here goes! You think the plant needs a foundation? It's not required. The KMA 220/KMA 220i stands secure.

The plant is set up and taken down easily and in next to no time at all. Special tools are not required.

Lower hydraulically operated supports.





1 |

1 | Fold out the front support legs manually.



2 |

2 | Position the operator's cabin at the mere push of a button.



3 |

3 | Fold out protective panels.



4 |

4 | Unfold the discharge conveyor hydraulically.

5 | Position the cement auger by means of a crane.



5 |

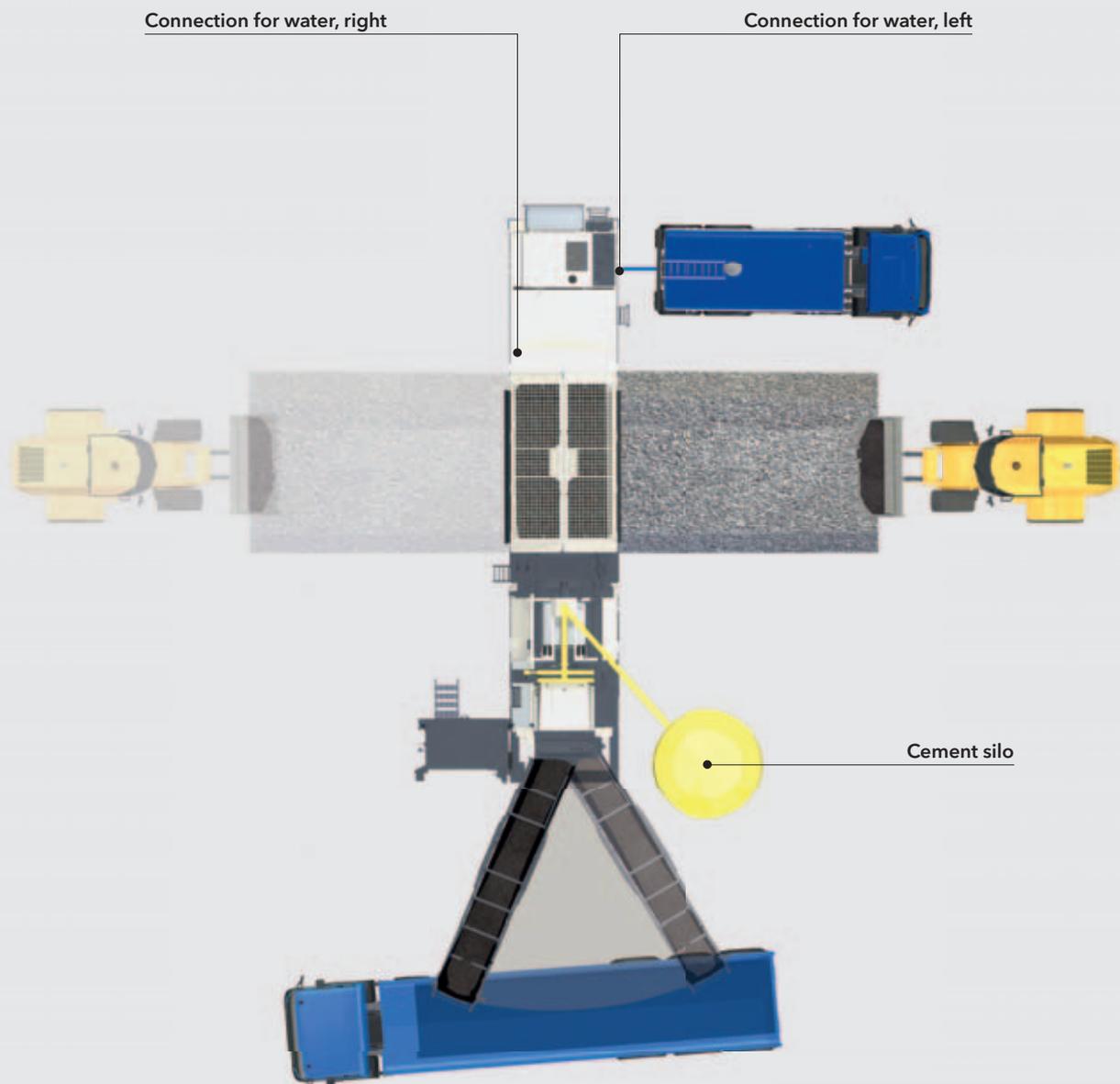
Mixing in the vicinity of the paving site

SETUP IN THE MOST FAVOURABLE LOCATION

“Flexibility at work” is yet another discipline that has taken our mobile mixing plant to the top step on the winner’s rostrum. Whether supplying water and emulsion from the left or the right side, feeding cement from the left or

the right side, feeding cement via a cement silo or manually via cement bags, or deciding on the position of the cement silo: all’s possible. This leaves much room for assembling the KMA 220/KMA 220i in the ideal position, as the immediate proximity to the job site or stocking location is an inestimable advantage when it comes to time, cost and energy savings.

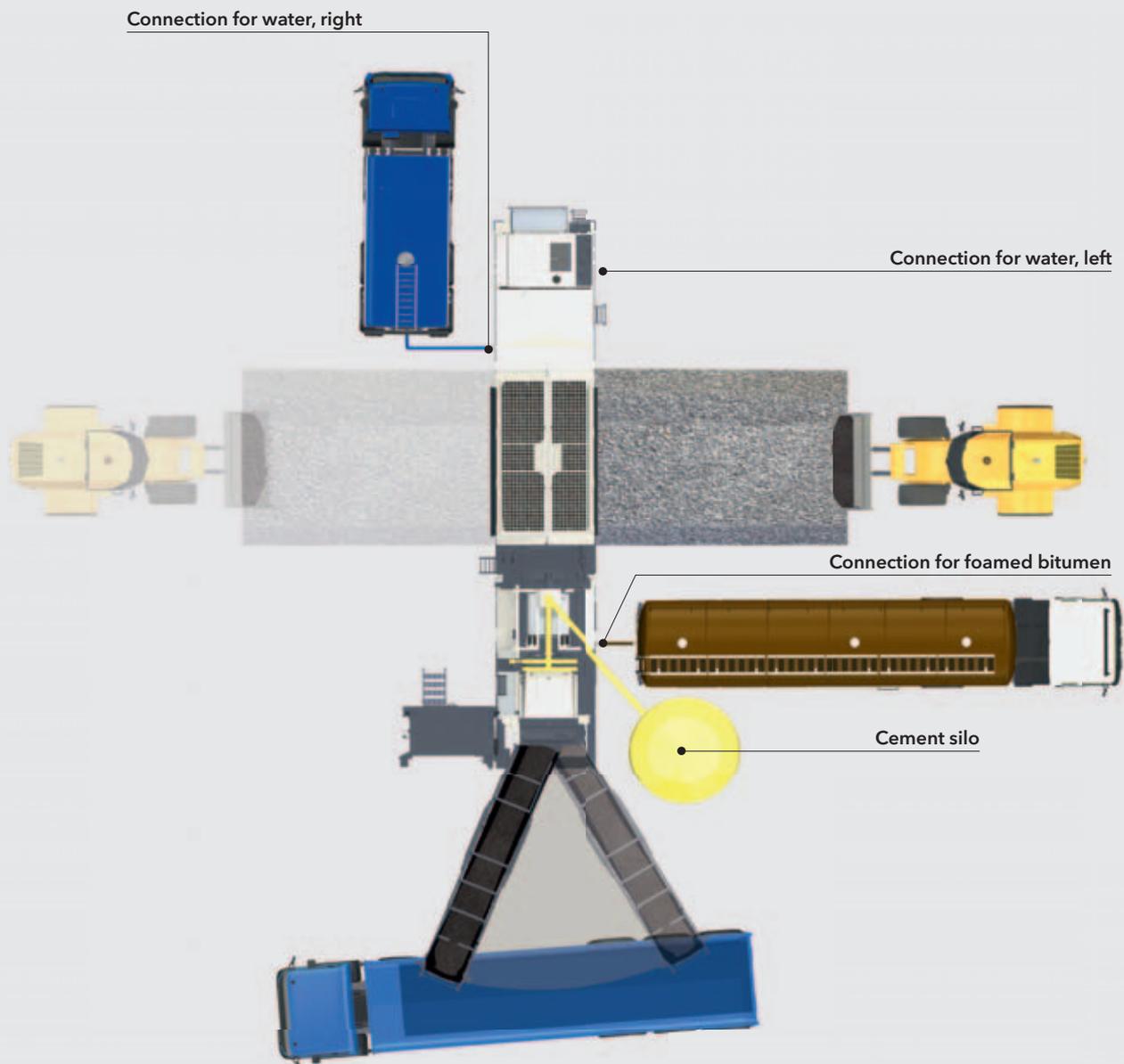
PRODUCTION OF A HYDRAULICALLY BOUND BASE LAYER WITH DIRECT LOADING ON TRUCKS. THE REQUIRED CEMENT IS PROVIDED VIA A STATIONARY SILO, WHILE WATER IS SUPPLIED FROM A WATER TANKER TRUCK.



The plant's compact dimensions of only 2.50 m in width and 19.20 m in length enable it to be operated even in extremely restricted space conditions. Tanker trucks for water or bitumen emulsion can be positioned on both sides of the plant. The cement auger conveyor can be positioned either on the right or on the left side. The discharge conveyor has a wide slewing range and is an additional, valuable option when it comes to ensuring the plant's independent choice of location.



PRODUCTION OF COLD MIX USING CEMENT AND HOT BITUMEN THAT IS FOAMED IN THE PLANT AND THEN INJECTED INTO THE MIXER.



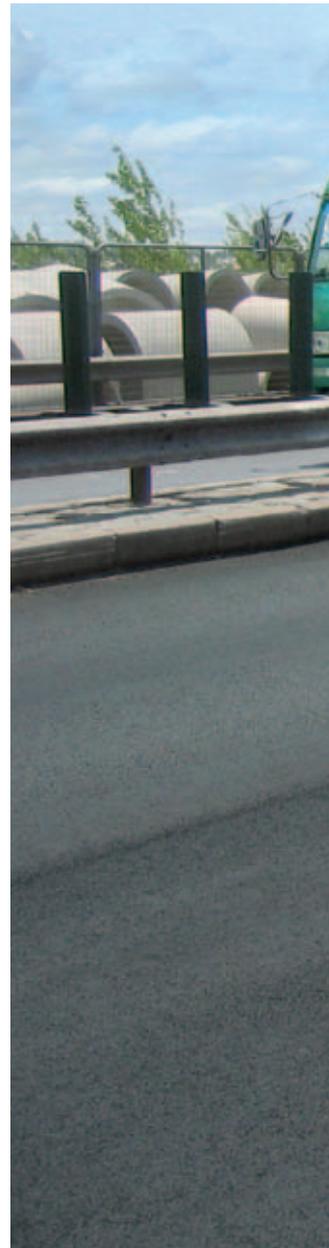
Recipe of success for high-quality pavements

FOR HEAVY-DUTY ROAD PAVEMENTS

The plant produces cold mixes suitable for a broad range of different construction applications, such as motorways, high-quality base layers in road construction, pavements for car parks and storage areas. The pavements built from these high-quality cold mixes impress with their resistance to deformation, improved flexibility and long service life. Cement, bitumen emulsion and foamed bitumen are the binders used for highly stressed road pavements.

Added cement produces hydraulically bound base layers of excellent structural capacity. A combination of bitumen emulsion and cement produces bitumen/cement-bound base layers of high quality. Added foamed bitumen and cement produce high-quality, stable base layers with excellent flexibility and durability properties.

1-2 | *A bitumen-bound base layer can be trafficked immediately after completion.*





3 | Two-lane carriageway without surfacing, produced from cold mix.



Maximum clarity ensures ease of operation

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GIVING OPERATORS THE FULL PICTURE - AT ALL TIMES

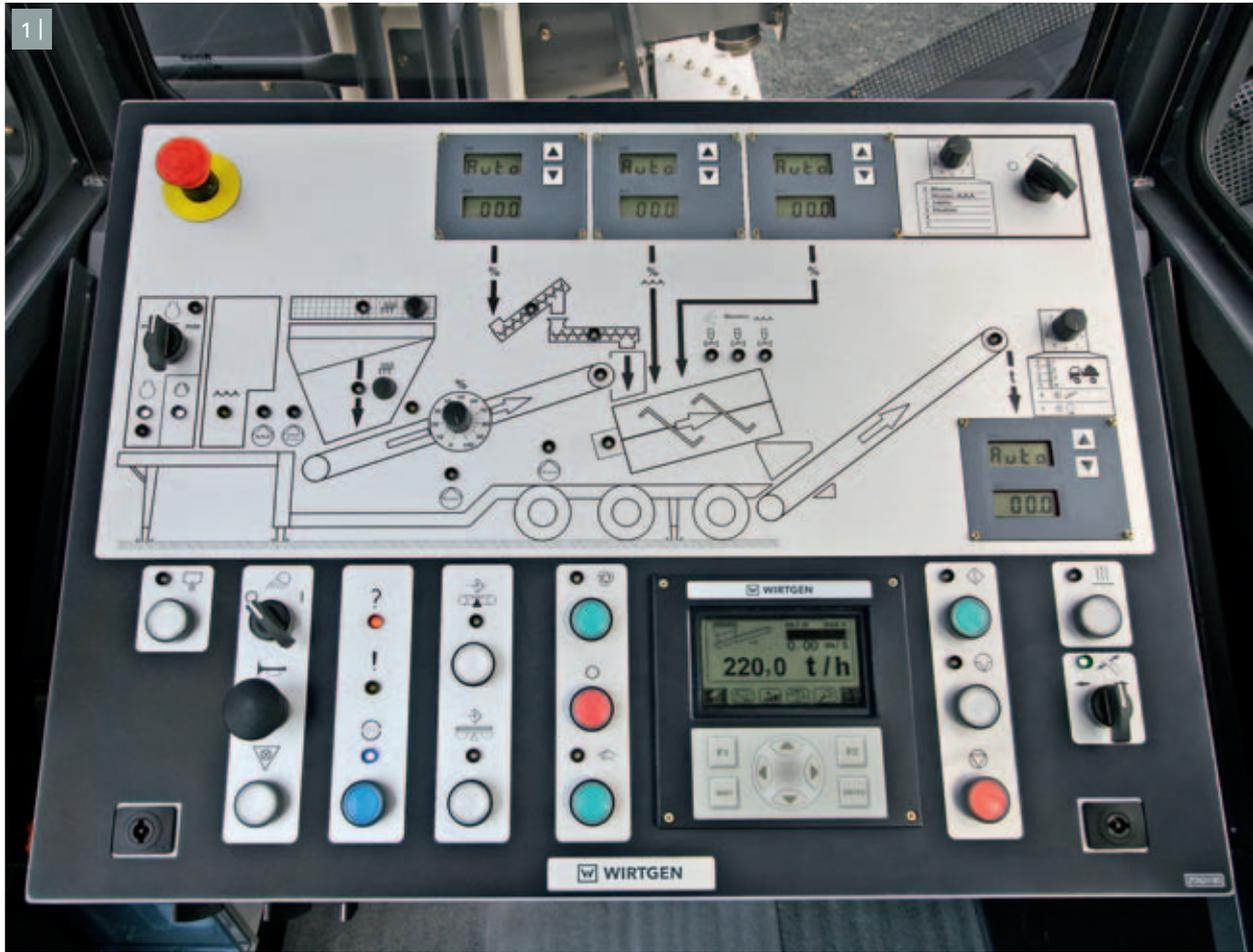
Easy and convenient operation is a key principle of the KMA 220/KMA 220i. Pure ergonomics on the operator's platform: the microprocessor unit with clearly arranged controls and illuminated display gives the operator full control of the plant at all times. All he has to do is key in the added quantities of water, bitumen emulsion, cement or foamed bitumen. The rest happens almost automatically. His spacious, weather-protected cabin offers an optimum view of the entire production sequence.

Displays keep the plant operator up to date on important production details, such as the quantity produced as part of a lot in batch production. The intelligent control system registers any malfunction or material shortage and stops the plant, if required. Functions relevant for loading - such as start/stop production, tilt/vibrate vibrating grids - can be carried out by means of remote control.

The operator has a good overview of the entire plant and can control all plant functions from the air-conditioned operator's cabin.



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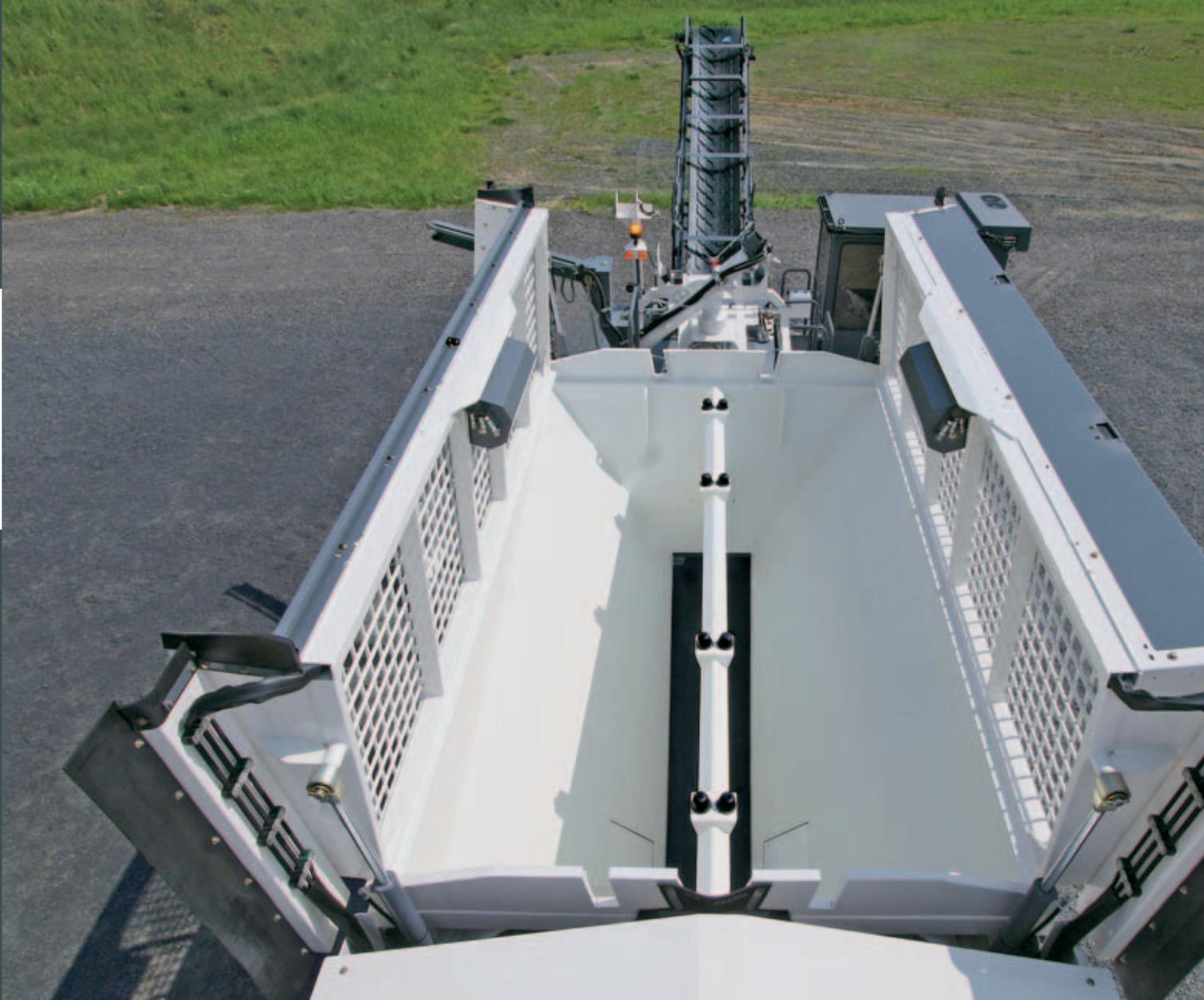


1 | The main panel provides comprehensive information on the plant status.

2 | Practical: remote control from the operator's cabin of the wheel loader.

2 |





The vibrating screens mounted on the proportioning hopper can be swung to a vertical position and vibrated for cleaning.

Intelligent functions facilitate work

WORK IN LINE WITH FIELD REQUIREMENTS

Field operation confirms that handling of the mobile mixing plant KMA 220 / KMA 220i is extremely easy. Many prudent detail solutions provide the time-saving effects and efficiency that are valuable assets. The screens on the proportioning hopper, for instance, are easy to clean and can be tilted continuously. The connection for the addition of hot bitumen is in an extra low position to ensure that the binder is drawn in properly even when the

tanker truck is nearly empty. The hose and all other components transporting hot bitumen for the production of foamed bitumen are, of course, heated.

The take-off conveyor below the material hoppers is completely covered, which helps to prevent the development of dust clouds. The belt of the take-off conveyor is continuously cleaned automatically by means of scrapers.



1 |

1 | The vibrating screens can also be tilted continuously and independently.



2 |

2 | Attention to detail: low position of the connection for hot bitumen.



3 |



4 |

3-4 | Large panels at the sides of the proportioning hopper prevent spilled material from piling up near the plant. Stable panels below the proportioning hopper support the approach ramp.



5 |

5 | Quick and easy access: replacing the hot bitumen filter.



6 |

6 | Wide-opening doors provide good access to all components for maintenance and cleaning.

Innovative technology mixes precisely to formula

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PERFECT MIXES GUARANTEED

A multitude of highly precise, easily accessible measuring and control instruments ensure that the formula is adhered to with pinpoint accuracy. Two gate valves at the outlet of the proportioning hopper permit the source material to pass onto the take-off conveyor where the material is weighed by means of the integrated belt scales and then transported to the mixer. Here, water and binders are added precisely in accordance with the weight of the source material. Water is drawn from tanker trucks or from the integrated water tank and is then injected via the flow meter and injection bar. Hydraulic binders such as cement are

proportioned via highly sensitive weighing augers, bituminous binders via flow meters.

Water and bitumen emulsion are injected at the inlet of the take-off conveyor into the mixer. An electrically heated injection bar for the addition of foamed bitumen is positioned directly above the material inlet to the mixer.

The well-protected injection bar produces foamed bitumen, a highly innovative binding agent.



1 | Material addition is monitored by adjustable metering gates with limit switch.



2 | Belt scales at the take-off conveyor continuously determine the precise weight of the material currently being conveyed.



3 | The test nozzle is used to check that the foamed bitumen is of perfect quality.

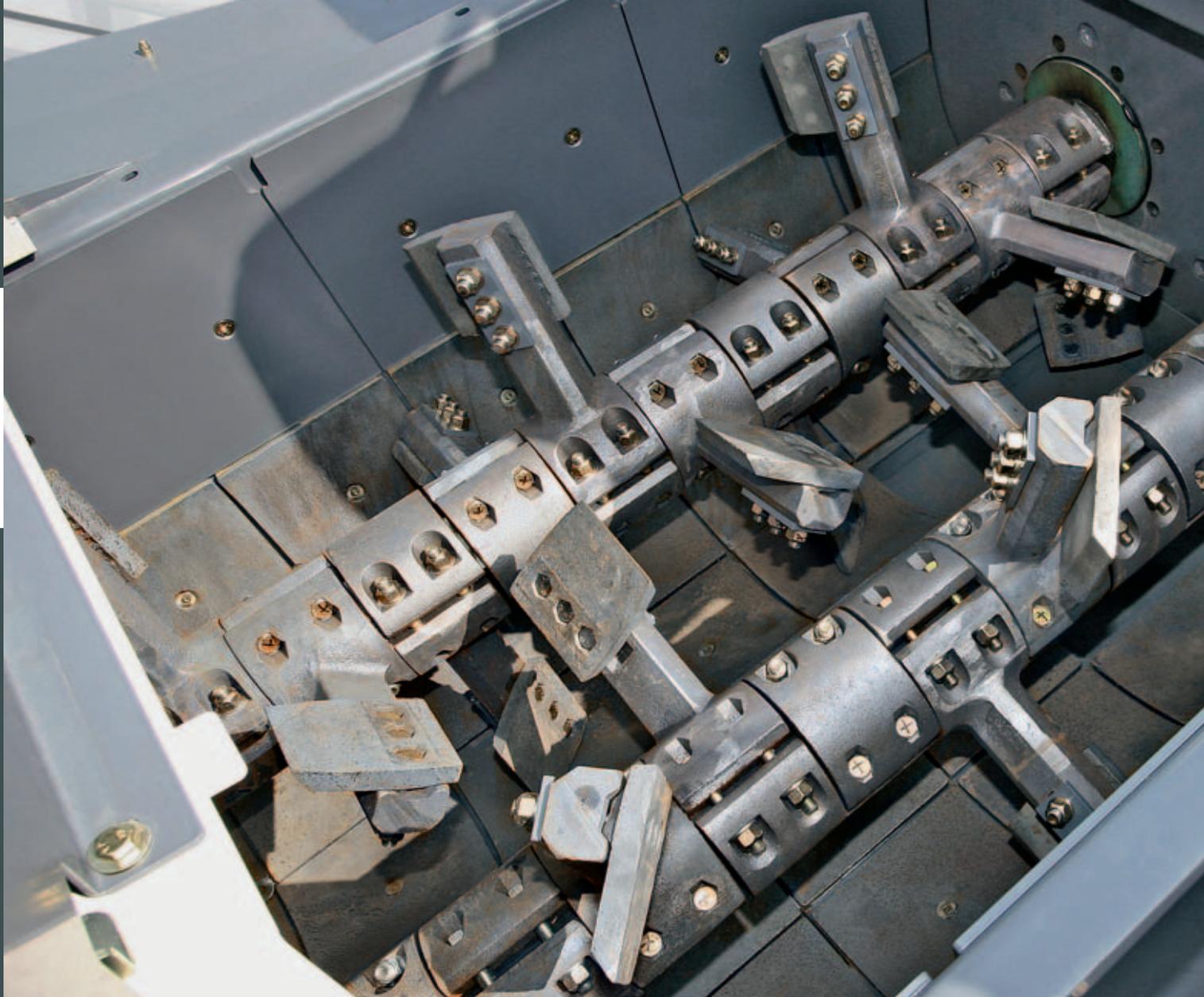


4 | The slewing auger conveyor enables cement to be fed from a cement silo or hopper.



5 | The weighing auger determines the weight of the cement being conveyed.





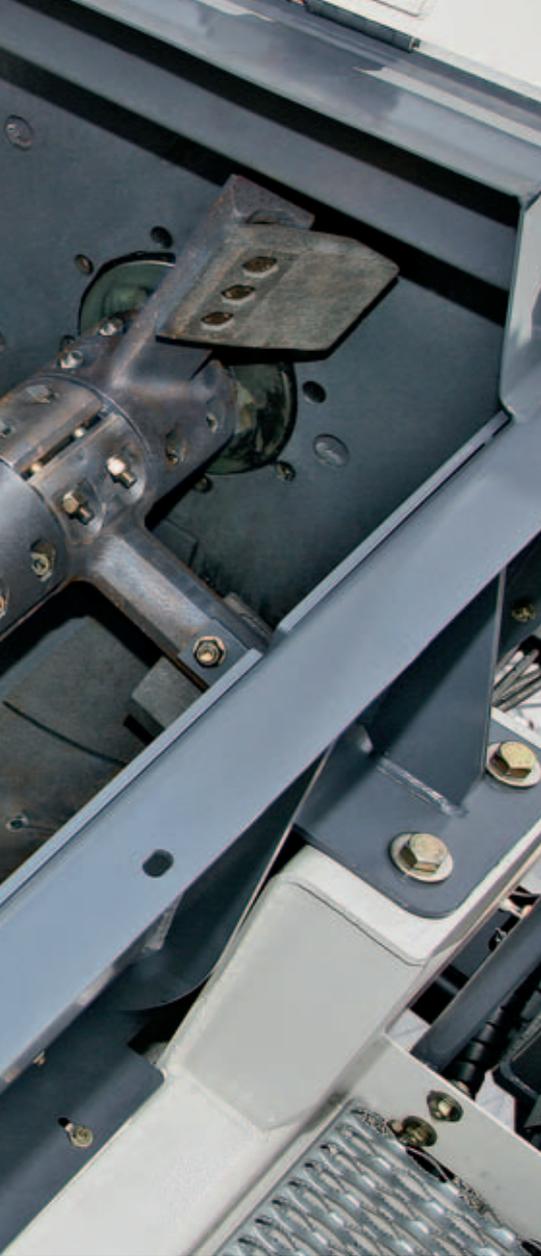
Equipment tailored to performance requirements - a class of its own

GENEROUSLY DIMENSIONED COMPONENTS

The main components of the KMA 220/ KMA 220i are generously dimensioned and of heavy-duty design, enabling the plant to achieve the tremendous production rates it is capable of. The robust twin-shaft continuous mixer is undoubtedly a highlight, having a homogeneous mixing capacity of 220 tonnes per hour. The mixing blades and interior of the compulsory mixer are manufactured from highly wear-resistant material. The mixing blades allow independent adjustment and can be replaced individually. All plant compo-

nents, including the mixer, are driven hydraulically via a powerful diesel engine. Beneficial to the environment: the engine is accommodated in a sound-insulated housing.

The supply of water, indispensable for any mixing plant, has also been organized in the best way possible: a permanently installed, 4,500-litre water tank guarantees continuous supply when water tanker trucks have to change.



1 | The plant can hold two different types of mineral aggregate in its large, twin-chamber proportioning hopper.

2 | Fuel saver: the diesel engine can be switched to the efficient eco mode during non-productive times.

3 | The slewing discharge conveyor guarantees smooth material transport even when working to full capacity.



State-of-the-art, efficient cold recycling

TOTAL ECONOMIC EFFICIENCY

With the development of the KMA 220/ KMA 220i, WIRTGEN has set the bar high once again when it comes to the performance, efficiency and quality of cold recycling mixing plants. Its mobile concept turns the KMA 220/ KMA 220i into a transportable production plant. The KMA 220/ KMA 220i can produce mixes either in batch mode with subsequent loading on trucks (pre-selection of tonnage) or in continuous mode for subsequent stockpiling. The secret is in its tried-and-tested microprocessor control system. The discharge conveyor has a wide slewing range

and is suitable for producing large stockpiles and loading large trucks.

Stockpile production is particularly suitable for mixes produced with foamed bitumen, as these can be stored over extended periods of time. Changing several trucks "on the fly" guarantees high production rates even when loading the material on trucks.



1 | Precise metering of the additives is monitored by the plant's micro-processor control system.

2 | Changing trucks "on the fly" in batch mode: the next truck is waiting already.

3 | Continuous production is suitable for subsequent stockpiling.

Technical specification

	KMA 220	KMA 220i
Plant capacity		
Mixing performance	max. 220 t/h	
Max. particle size	45 mm	
Proportioning of mineral aggregate		
Hopper capacity	2 x 6 m ³	
Feeding width	3,710 mm	
Feeding height (average)	3,600 mm	
Mixer		
Design	Twin-shaft compulsory mixer	
Operating principle	Continuous mixer	
Drive power	2 x 30 kW	
Wear protection	Full wear-resistant lining	
Engine		
Manufacturer	Deutz	Deutz
Type	TCD 2012 L06 2V	TCD 6.1 L6
Number of cylinders	6	6
Rated power at 2,100 min ⁻¹	129 kW/174 HP/176 PS	129 kW/174 HP/176 PS
Displacement	6,060 cm ³	6,060 cm ³
Fuel consumption, full load	36 l/h	33 l/h
Emission standards	EU Stage 3a/US Tier 3	EU Stage 4/US Tier 4f
Electrical system		
Electrical power supply	24 V	

	KMA 220	KMA 220i
Tank capacities		
Fuel tank	400 l	
Hydraulic oil tank	400 l	
Water tank	4,500 l	
Feeding capacities		
Auger conveyor for hydraulic binding agents	13 m ³ /h	
Addition of water	200 l/min	
Addition of emulsion	180 l/min	
Addition of hot bitumen to produce foamed bitumen	160 l/min	
Hot bitumen heating system	42 V	
Conveying system		
Belt width of mixer feeding conveyor	1,000 mm	
Belt width of discharge conveyor	800 mm	
Slewing angle of discharge conveyor (right / left)	20° / 35°	
Transport dimensions		
Length excluding cabin/including cabin	13,400 mm / 14,710 mm	
Dimensions of cabin (L x W x H)	2,000 x 1,310 x 2,450 mm	
Width	2,500 mm	
Height	4,000 mm	

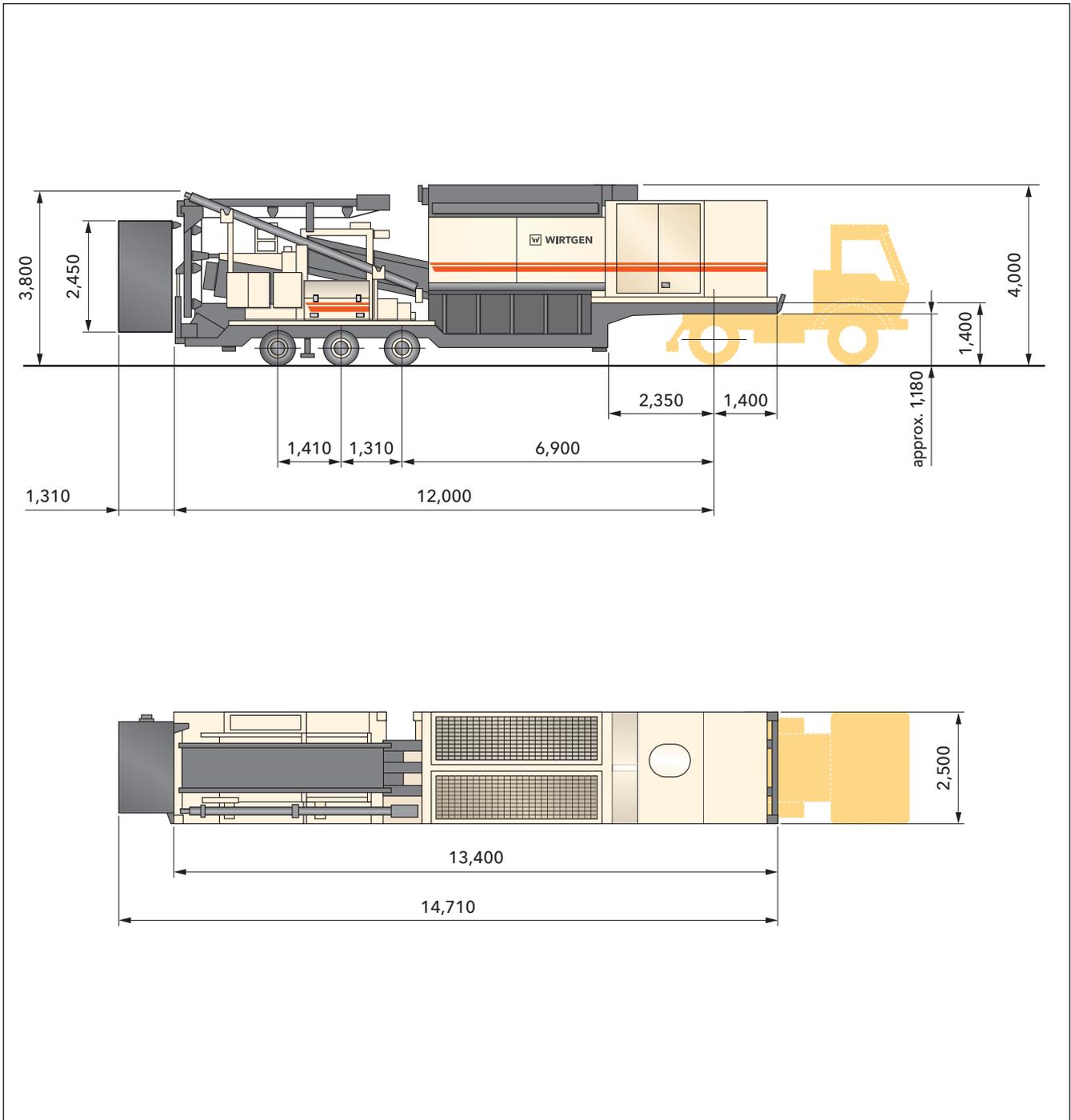
Technical specification

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	KMA 220	KMA 220i
Machine weights		
Empty weight of machine in standard design without filling media	27,350 kg	27,500 kg
Operating weight, CE*	29,800 kg	29,950 kg
Operating weight, max. (full tanks, full range of equipment)	34,750 kg	34,950 kg
Weights of tank contents		
Water tank filling	4,500 kg	4,500 kg
Diesel tank filling (0.83 kg / l)	330 kg	330 kg
AdBlue® / DEF tank filling	-	50 kg
Optional equipment features increasing / reducing empty weight		
Injection system in lieu of standard		
ESL bitumen emulsion: Injection system for bitumen emulsion		260 kg
ESL foamed bitumen: Injection system for foamed bitumen		740 kg
ESL foamed bitumen and bitumen emulsion: Injection system for foamed bitumen and bitumen emulsion		970 kg
Additional equipment		
Setup aid for auger conveyor		190 kg
Cabin		990 kg

* = Weight of machine with half-full water tank, half-full fuel tank and on-board tools, excluding optional equipment

Dimensions



Plant in transport mode
Dimensions in mm

Standard equipment

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Base machine	
Basic machine with engine	■
Mixing plant capacity of 220 t/h for manufacturing cold mixes with the use of asphalt granulate (recycling) or new mineral mixes	■
Simple transport because the entire unit is mounted on a trailer	■
Trailer with three air-sprung axles and automatic, load-dependent two-line compressed air brake	■
Registered according to European road transport directives, length 13.40 m, width 250 m, height 400 m	■
Hydraulic and mechanical supports for easy set-up of the mixing plant	■
Generously dimensioned dosing unit, with vertical division for double-sided loading of two different raw materials with a capacity of 2 x 6 m ³ . The entire dosing unit with volume of 12 m ³ can be used for production with only one material. The filling can be from either one side or both sides.	■
Oversize granulate separation by shaker grids on the dosing unit for maximum granulate size of 45 mm. The grids can be folded up hydraulically for cleaning.	■
Mixing unit	
Integrated belt conveyor scales for continuous recording of the minerals	■
Twin-shaft continuous pugmill mixer for homogenous material mixing	■
Adjustable metering gate for optimising the mixer filling level	■

- = Standard equipment
- = Standard equipment, replaceable with optional equipment
- = Optional equipment

Spraying unit/binding agent addition	
Regulated feed auger for hydraulic binders; maximum feed volume: 13 m ³ /h	■
Connection for binder addition from a silo	■
Weighing auger for continuous monitoring and dosing of the hydraulic binder	■
Spraying system for water	■
Lock parts instead of other spaying systems	□
Auger conveyor without setup aid	□
Operator's stand	
Main control panel with integrated displays in the process diagram	■
In automatic mode, the microprocessor control monitors and controls the pre-set volumes of the binders and additives	■
In service mode, the individual drive and control units can be activated manually	■
Operator's stand without cabin	□
Others	
Hydraulically swiveling loading conveyor for transport onto a stock-pile or for direct loading onto a truck (can be folded in for transporting)	■
Lighting system for nighttime working	■
Safety package with emergency stop switches	■
Tool box with extensive set of tools for maintenance and servicing	■
European type test certificate, Euro Test-mark and CE conformity	■
Paint standard cream white RAL 9001	□

■ = Standard equipment
 ■ = Standard equipment, replaceable with optional equipment
 □ = Optional equipment

Optional equipment

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Spraying unit/binding agent addition	
Spraying system for bitumen emulsion	<input type="checkbox"/>
Spraying system for foam bitumen	<input type="checkbox"/>
Spraying system for foam bitumen and bitumen emulsion	<input type="checkbox"/>
Setup aid for auger conveyor with	<input type="checkbox"/>
Loading hopper for loading the cement auger conveyor with cement bags	<input type="checkbox"/>
Binder monitoring and aeration system in the transfer hopper	<input type="checkbox"/>
Operator's stand	
Operator's stand with cabin	<input type="checkbox"/>
Air conditioner	<input type="checkbox"/>
Cabin heater	<input type="checkbox"/>
Printer for recording the job data	<input type="checkbox"/>

- = Standard equipment
- = Standard equipment, replaceable with optional equipment
- = Optional equipment

Others	
Paint in one special colour (RAL)	<input type="checkbox"/>
Paint in two special colours (RAL)	<input type="checkbox"/>
Paint in maximum two special colours with substructure in special colour (RAL)	<input type="checkbox"/>
Loading conveyor stripping-off brush	<input type="checkbox"/>
High-pressure water cleaner, 200 bar 26 l/min	<input type="checkbox"/>
LED additional lighting	<input type="checkbox"/>
Connection hose for water or bitumen emulsion	<input type="checkbox"/>
Heated connection hose for hot bitumen	<input type="checkbox"/>

= Standard equipment
 = Standard equipment, replaceable with optional equipment
 = Optional equipment



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