



TOP TOWER

THE FUTURE IS NOW



F A Y A T M I X I N G P L A N T S

TOP TOWER

“Long-lasting roads and energy saving are the primary concerns of road constructors today. The materials used must be recyclable, suitable for modern low-energy formulas, and integrate the latest technical developments for producing low-cost asphalt. These principles are the foundation of our TOP TOWER, the complete range of state-of-the-art plants.



INTRODUCTION	02
THE TOP TOWER RANGE	04
◆ Configurations and Technical Specifications	10
WHAT MAKES OUR PLANT UNIQUE	12
◆ Energy-saving	14
◆ Sustainability	16
◆ Recycling	18
◆ Transport, Assembly, Maintenance, and Safety	20
◆ Return on investment	22
EVOLUTION	24
CYBERTRONIC	26
ECO-RESPONSIBILITY	28
AFTER-SALES SERVICE	30



THE TOP TOWER RANGE

Our global presence



Top Tower 4000 - Bulgaria



Top Tower 3000 - Kuwait



Top Tower 3000 - Latvia



Top Tower 4000 - UAE



Top Tower 2500 - Italy



Top Tower 4000 - UK

TOP TOWER: RANGE UP TO 200 T/H

Type	TT 2000	TT 2000 P	TT 2500	TT 2500 P
Maximum output	160 t/h		200 t/h	
Plant capacity (3% humidity)	160 t/h		200 t/h	
Plant capacity (5% humidity)	120 t/h	160 t/h	180 t/h	200 t/h
Cold feeders: capacity and number	on customer request			
Dryer drum	E180 (L=8.5 m/D=1.8 m)	E206 (L=8.5 m/D=2.06 m) E206-XL EvoDRYER (L=10.3 m)	E220 (L=9 m/D=2.2 m)	
Burner power	9 MW	13.4 MW		16.8 MW
Recovered fines hopper	22 t	25.3 t		27.5 t
Filter surface	525 m ²	663 m ²		750 m ²
Total screen surface	4 sel.= 16.5 m ² / 5 sel.= 20.8 m ²		5 sel.= 26.9 m ² / 6 sel.= 32.1 m ²	
Under screen compartments	4 (5 optional) + 1 by-pass		5 (6 optional) + 1 by-pass	
Hot aggregate storage under screen	20 t / 52 t			
Mixer capacity	2 t		2.5 t	
Imported filler storage	on customer request			
Bitumen storage	on customer request			
Product storage / compartments	direct loading; under mixer 30 t in 1 compartment; 60 t in 2 compartments; 140 t in 2 compartments; storage on side 36 + 45 t in 2 compartments; (optional up to 221 t)			
Recycling up to 35%	Recycling ring			
Recycling up to 40%	Recycling ring and EvoDRYER			
Recycling up to 40%	MARINI special metering system for high % in the mixer			
Recycling up to 60%	Ring + mixer			



TOP TOWER: RANGE UP TO 320 T/H

Type	TT 3000	TT 3000 S	TT 3000 P	TT 4000
Maximum output	240 t/h		260 t/h	320 t/h
Plant capacity (3% humidity)	200 t/h	240 t/h	240 t/h	320 t/h
Plant capacity (5% humidity)	180 t/h	220 t/h	240 t/h	280 t/h
Cold feeders: capacity and number	on customer request			
Dryer drum	E206(L=8.5 m/D=2.06 m)	E220 (L=9 m/D=2.2 m) E220-XL EvoDRYER (L= 11 m)	E250 (L=10 m/D=2.5 m) E250-XL EvoDRYER (L= 11.5 m)	
Burner power	13.4 MW	16.8 MW	19 MW	
Recovered fines hopper	27.5 t	27.5 t	40 t / 80 t	
Filter surface	663 m ² / 750 m ²	750 m ²	1012 m ²	
Total screen surface	5 sel.=27 m ² / 6 sel.= 32.5 m ²	5 sel.= 32.0 m ² / 6 sel.= 38.4 m ²	5 sel.= 37 m ² / 6 sel.= 45 m ²	
Under screen compartments	5 (6 optional) + 1 by-pass			
Hot aggregate storage under screen	25 t / 60 t		80 t / 140 t	
Mixer capacity	3 t / 4 t			4 t
Imported filler storage	on customer request			
Bitumen storage	on customer request			
Product storage / compartments	direct loading;			
	under mixer 25 t in 1 compartment; 2 x 50 t in 2 compartments; up to 320 t in 6 compartments;		under mixer 25 t in 1 compartment; 2 x 50 t in 2 compartments; up to 604 t in 6 compartments;	
	storage on site from 126 t in 2 compartments up to 504 t in 8 compartments (load cells/long storage on request)			
Recycling up to 35%	Recycling ring			
Recycling up to 40%	Recycling ring and EvoDRYER			
Recycling up to 40%	MARINI special metering system for high % in the mixer			
Recycling up to 60%	Ring + mixer			

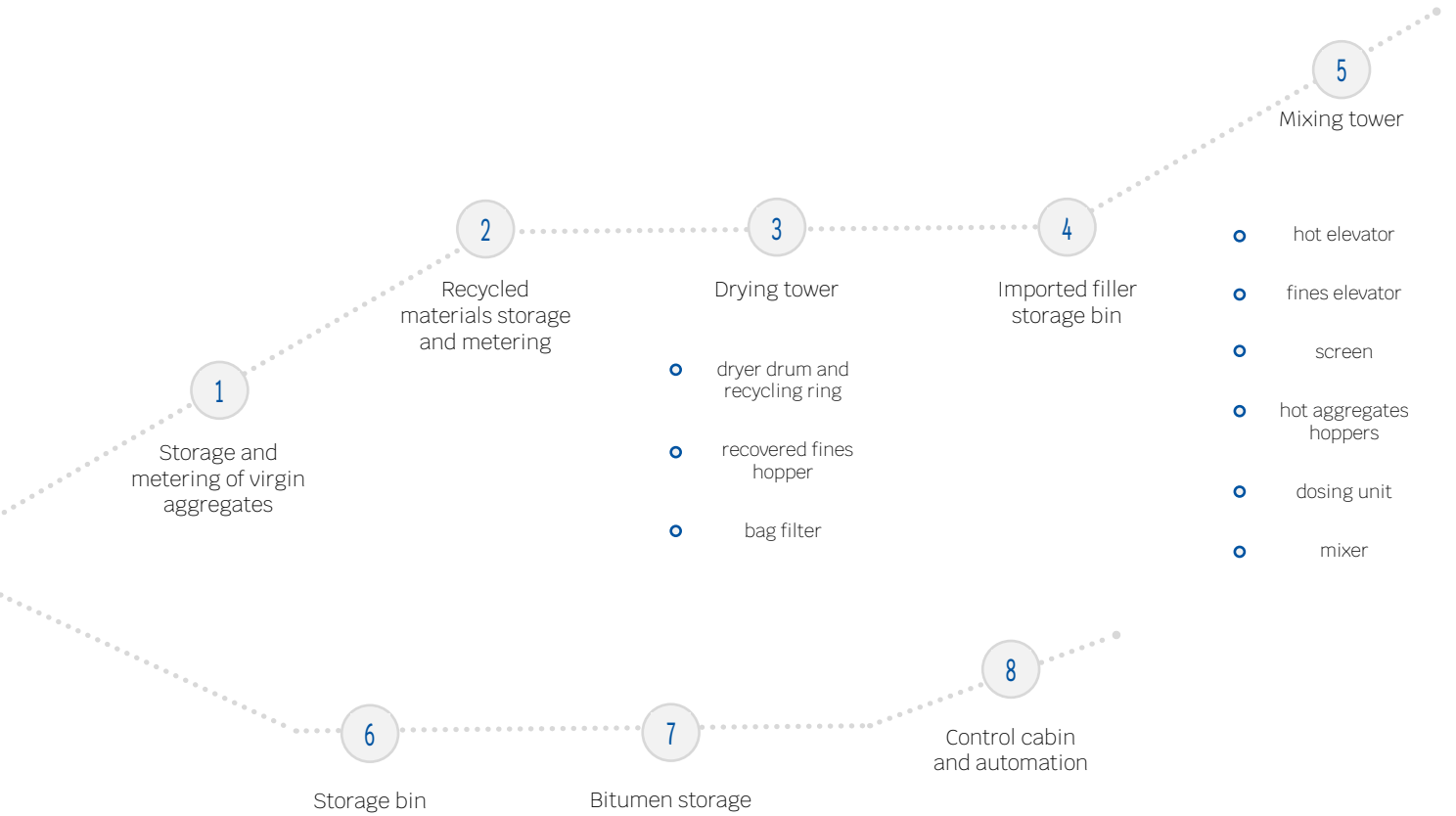


MARINI
CORRUGATED METAL
ROOFING & CLADDING

Top Tower 3000 S - Australia

CONFIGURATIONS AND TECHNICAL SPECIFICATIONS

Overall operation





1 Cold feeders with hopper – width: 3.5 m / 4 m
capacity: 11 m³ / 18 m³ / 20 m³



2 RAP cold feeders (with the third cold feeder)



3 Dryers with a diameter of 180 cm / 206 cm / 220 cm / 250 cm
Bag filter placed above the drying drum



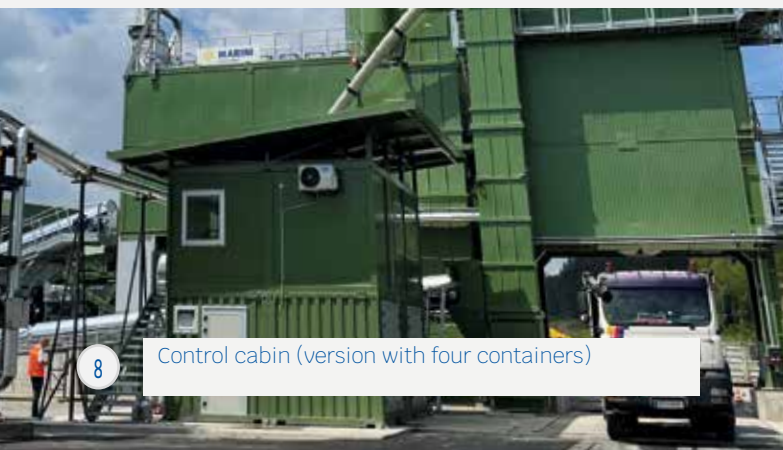
5 Mixing tower with a side silo



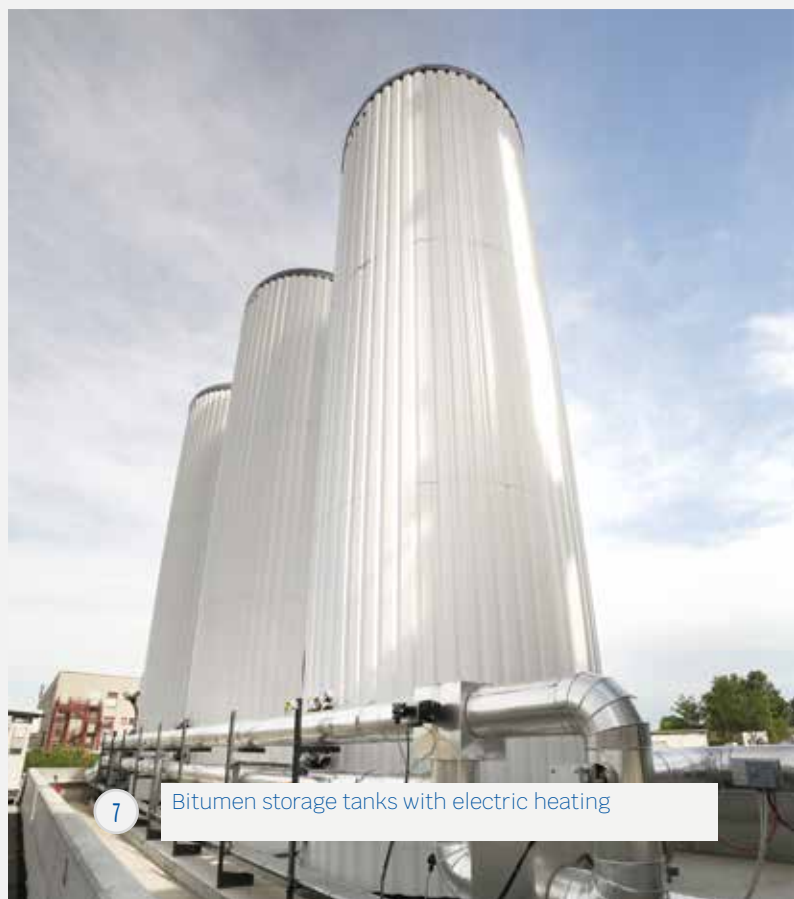
4 Filler silos (special "Tower" version)



5 Mixing tower in the "Tower" version



8 Control cabin (version with four containers)



7 Bitumen storage tanks with electric heating



WHAT MAKES OUR PLANT UNIQUE

Top Tower 3000 P - Italy



ENERGY-SAVINGS

Our technology ensures low energy consumption



SUSTAINABILITY

Care to emissions and odours



RECYCLING

High RAP use percentage to optimise binder and aggregate consumptions.



TRANSPORT, ASSEMBLY, MAINTENANCE, AND SAFETY

Plants designed with users for you



EVOLUTION

New software developments for the client



ROI

Savings on the overall cost of each component per HMA ton



ENERGY-SAVINGS

for lower operating costs of the plant

THE INNOVATIVE CONCEPT BEHIND TOP TOWER

The filter above the dryer drum allows for substantial savings in electricity and fuels.

This plant helps reduce CO₂ emissions considerably.



MAIN CHARACTERISTICS

HIGH-PERFORMANCE BURNERS

HEAT EXCHANGE OPTIMISATION

OPTIMISED INSULATION

CONSUMPTION CONTROL

- 1 OPTIMISED PERFORMANCE**
reduced heat loss thanks to the Top Tower configuration
- 2 HIGH-EFFICIENCY BURNERS**
The electronic control and the compressed air-assisted spraying allow the burner to provide high efficiency regardless of the operating conditions and fuel type (possible use with bio-oil, wood powder, hydrogen, etc.)
- 3 WARM MIX ASPHALT**
the plant can be equipped with a high-pressure foam kit and can produce any type of HMA. This kit (on request) is incorporated into the production process, allowing the plant to save up to 30% of energy
- 4 OPTIMISED INSULATION**
The plant's main points (screen, under-screen hoppers, storage bins, bag filter, etc.) and binder storage tanks are clad with oversized insulating material with reduced thermal bridges
- 5 CONSUMPTION CONTROL**
advanced software and inverters optimise the plant's consumption, keeping it under control



SUSTAINABILITY

Thermal protection

EMISSIONS

Emissions and odours are the most remarkable challenges asphalt production plants must take on nowadays.

Emissions can be conveyed or fugitive.

- 1 CONVEYED EMISSIONS:**
conveyed emissions result from the drying and mixing stages. They come from well-defined emission tables and have limit values that depend on the asphalt production technology
- 2 DIFFUSE EMISSIONS:**
diffuse emissions are produced when materials are loaded and unloaded and during secondary plant operating stages. These emissions do not have a specific point of measurement but can be reduced by using special solutions

AEROFILTER, THE FUME TREATMENT SYSTEM

MARINI has developed and installed AeroFILTER, the new fume and blue smokes.

The AeroFILTER treats fumes and blue smokes produced along the mixer exhaust point, the skip track if the plant is fitted with a side storage bin, and the truck's discharge point.

This device filters fumes and blue smokes in several steps. Oils are then recovered in the lower part of the hopper before being evacuated through special tanks without any external dispersion.

The treated fumes are sent to the main stack of the plant.



EVODRYER, THE FUME HEAT TREATMENT SYSTEM

The new EvoDRYER system provides numerous benefits and ensures higher performance related to the use of RAP. It also thermally treats fumes that may contain VOC.

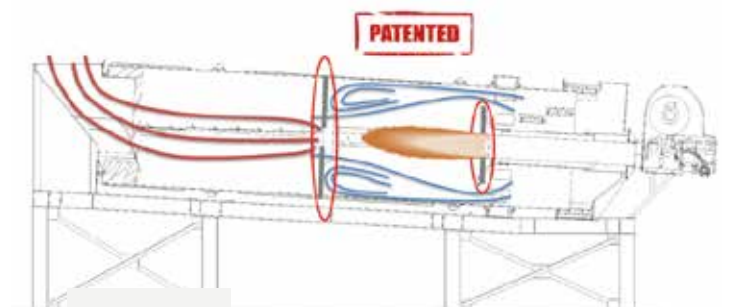
RAP (Reclaimed Asphalt Pavement) is introduced in the dryer drum after the burner flame, preventing the bitumen in the RAP from deteriorating. Even odours and emissions are considerably reduced.

The air conveyed by the mixing tower is fed behind the burner flame through an inlet at the front of the cylinder.

This patented system distributes air to the outer periphery of the combustion chamber and purifies the fumes from the residual organic compounds in gases.



AeroFILTER



EvoDRYER



EvoDRYER

RECYCLING

An essential step in plant management

THE REASONS FOR MARINI'S CHOICE

All over the world, the government authorities work to ensure the protection of the environment for a number of reasons:

waste reduction resulting from the deterioration of the road network

high amount of RAP with related storage problems

reuse of raw materials: aggregates are lacking due to the decreasing number of active quarries on a national and international basis

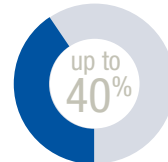
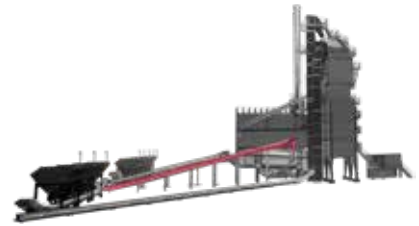
energy savings: consumption is lowered due to the reduction in aggregate quarrying, transport and traffic hold-ups

bitumen recycling: because not just aggregates are reutilized, but also the bitumen is partially reused



METERING SYSTEM THROUGH RECYCLING RING

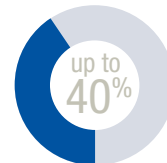
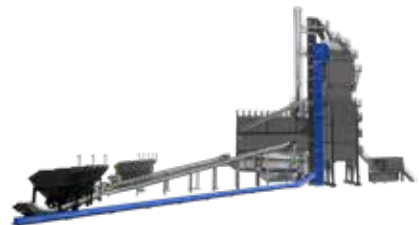
The recycling ring placed after the burner flame allows RAP (Reclaimed Asphalt Pavement) to be fed at the ideal point of the dryer drum without infiltration of parasitic cold air. RAP does not come in direct contact with the hot gases produced by the burner's flame but is gradually heated in the drum by means of heat-recovery flights and mixed with the virgin aggregates previously heated up to a suitable temperature. Most importantly, this technology prevents bitumen from being damaged.



METERING SYSTEM IN THE MIXER

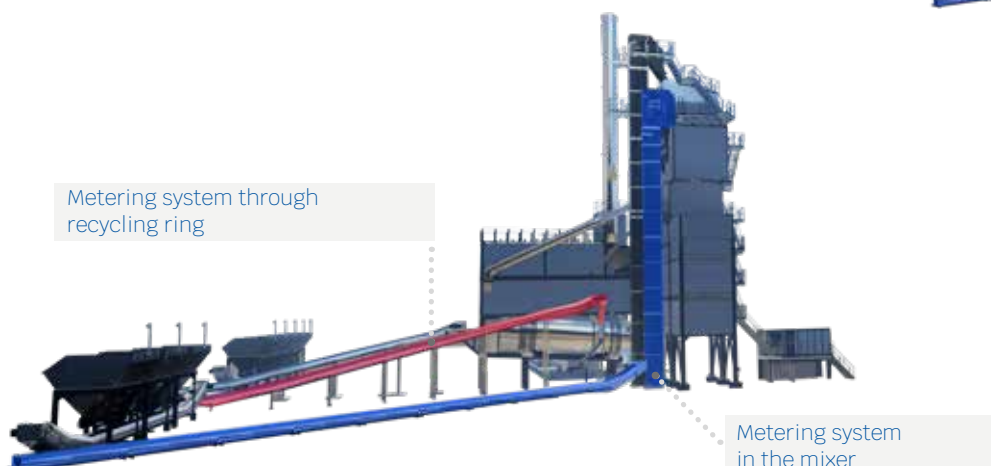
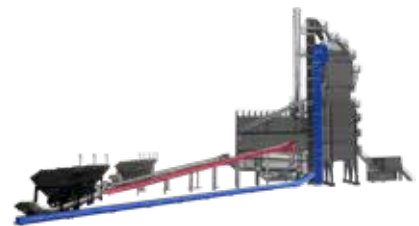
RAP can be fed in the mixer through a special feeding line, which consists of:

- cold feeder and feeding belt
- cold RAP metering unit, which includes a bucket elevator, a surge hopper, and a weighing conveyor belt with a variable RAP metering management system based on the moisture content
- modular exhaust system for the RAP produced in the mixer, with a fume stopping system from the virgin dryer drum to the filter



COMBINED TECHNOLOGY: RING + MIXER

The combination of the two technologies (Ring + Mixer) is the best solution in terms of flexibility and RAP performance.



TRANSPORT, ASSEMBLY, MAINTENANCE, AND SAFETY

Plants designed for operators

- 1 TRANSPORT:**
TOP TOWER 2000, 2000 P, 2500 plants can be loaded in containers for quick, affordable and safe transport.
Even more complex plants can be easily transported thanks to their modularity and the pre-wiring system
- 2 ASSEMBLY:**
all modules are pre-assembled at the factory to save time and prevent problems at the assembly jobsite
- 3 MAINTENANCE AND SAFETY:**
we create plants keeping the safety of your personnel in mind. Moreover, we strive to ensure safety to prevent accidents and unpleasant situations





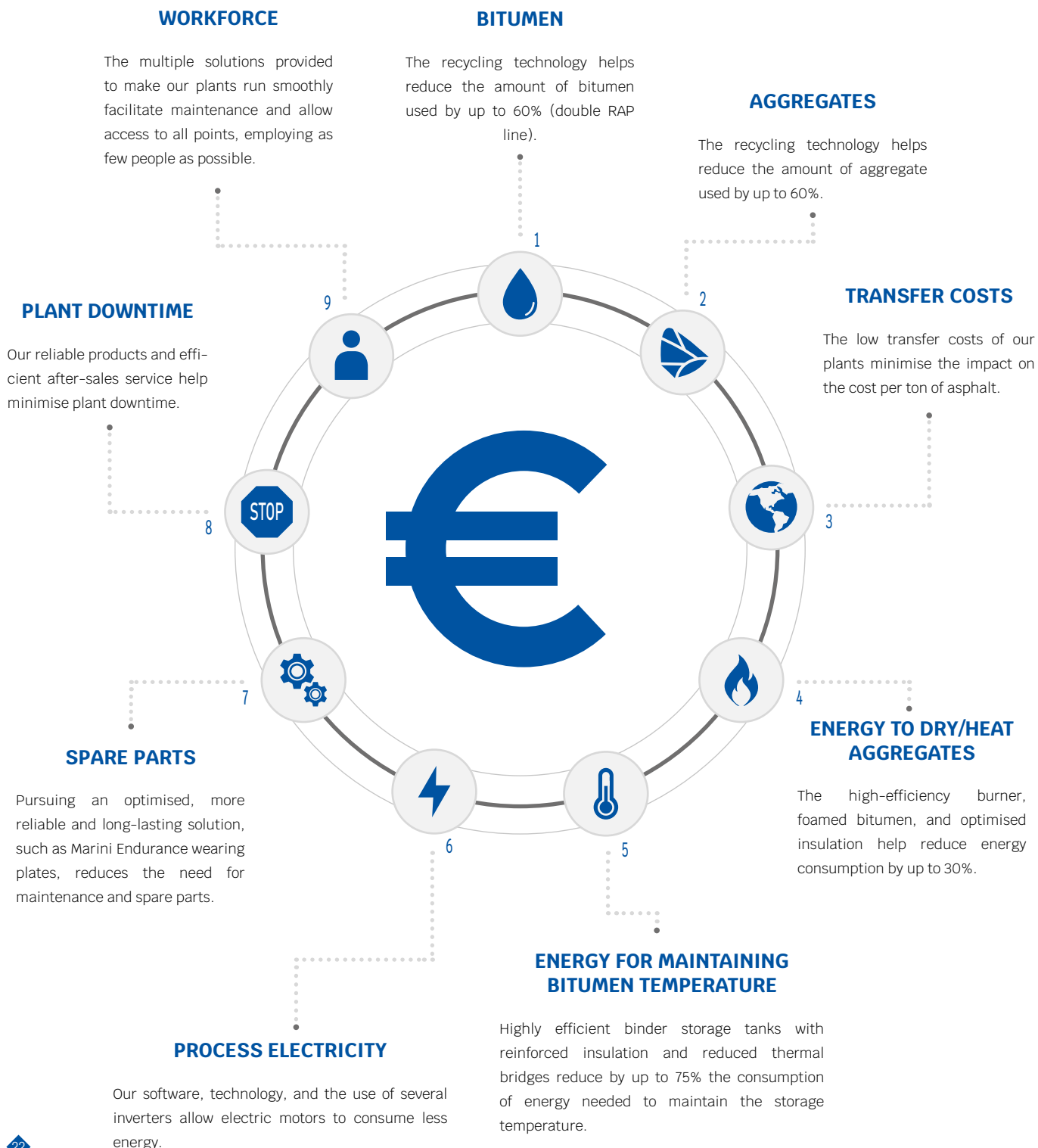
RETURN ON INVESTMENT

Our solutions for optimal ROI.

OPTIMISED COMPONENTS TO REDUCE CONGLOMERATE COST

Investing in the MARINI TOP TOWER allows you to produce top-quality HMA at unbeatable cost.

Every component of the overall cost of one ton of HMA is taken into consideration with the following solutions:






EVOLUTION

A new plant concept.

ADDITIVES

The plant's innovative design allows the use of all types of additives. An optional kit can be integrated into the plant at any time.



CELLULOSE FIBRES

cellulose fibre pellets, designed to stabilise the asphalt

PIGMENTS

(iron oxide, yellow, blue and white colorants)

POLYMERS FOR MODIFYING THE BINDER

(Wax, EVA, SBS, Latex)

NEUTRAL BINDERS

(synthetic binders, for special colours)

RUBBER POWDER

Rubber powder is obtained from tyres of dismissed cars and trucks. It increases bitumen elasticity while reducing thermal sensitivity. The result is reduced deformations, damage caused by humidity, noise and pavement vibrations

ANTI-STRIPPING AGENTS

Anti-stripping agents lower the surface tension of the bitumen, ensuring higher adhesion on the aggregate

LIGHT-CLEAR SYNTHETIC BINDERS

light-clear synthetic binders ensure colour flexibility and bright pavements

WARM MIX ASPHALT (WMA)

Normally, WMA is produced at a temperature lower than 30 °C compared to HMA. Like HMA, it ensures high performance, providing multiple benefits:

reduced VOC emissions

reduced CO₂ (carbon dioxide) and other gas emissions thanks to lower energy consumption for drying and heating aggregates

reduced fumes, emissions and odours

the site can be opened to traffic at an earlier stage

high workability

improved asphalt compaction and extended paving season

delivery of asphalt over distances

reduced energy consumption = lower production cost

higher plant performance by using RAP



CYBERTRONIC

Optimised production management

PLANT MANAGEMENT SOFTWARE

Cybertronic is Marini's plant management software.

It can be expanded using complementary software kits that ensure energy saving, fewer problems at the jobsite and a high percentage of RAP.



NEW FUNCTIONS

“DRYING PROCESS CONTROL” PACKAGE

“COLD RAP” PACKAGE

“ENERGY” PACKAGE
Optimised energy management

“APPLICATION FOR TRUCK LOADING” PACKAGE

“DYNAMIC RAP” PACKAGE

“MAINTENANCE REPORT” PACKAGE



correct fume temperatures
inside the filter



fuel consumption
optimisation



thermal exchange
efficiency

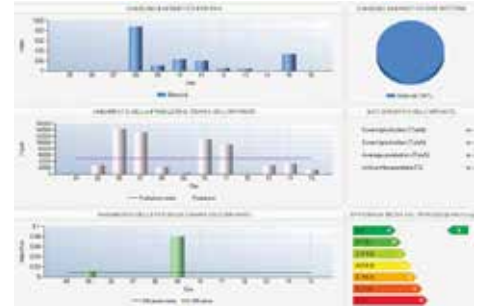
AUTOMATIC CONTROL OF THE DRYING PROCESS

By adjusting the burner's power and the drum's rotation speed based on the production (t/h) and humidity of the infeed materials, the software stabilises the outlet temperature of the material leaving the dryer and the inlet temperature of the fumes in the filter. This process reduces fuel consumption, optimising heat exchange efficiency.



OPTIMISED ENERGY MANAGEMENT

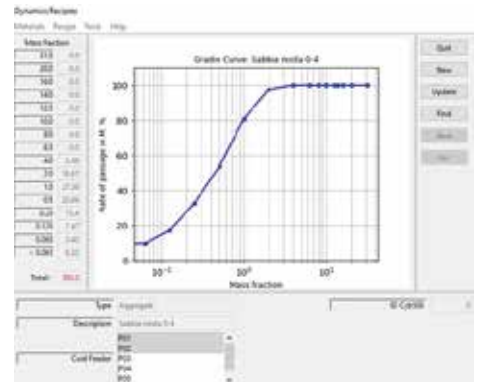
This software integration can control the energy consumption resulting from the production of various recipes. This makes it easier to analyse potential production process improvements, allowing for the optimisation of consumption and emissions in the atmosphere.



OPTIMISED AND DYNAMIC RAP MANAGEMENT

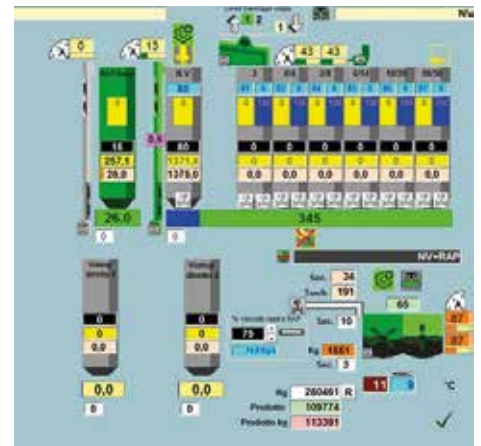
You can dynamically adapt the percentage of RAP by inserting the particle size curves of the aggregates, bitumen types, RAP used and the asphalt to be produced.

This software allows you to check the maximum amount of RAP that can be used based on the aggregates and RAP available and thus stay within the particle size curve. It also allows you to instantly vary the formula to adapt to any operating condition (especially when using the cold RAP line in the mixer).



HANDLING COLD RAP IN THE MIXER

The new function calculates the correct speed of the RAP weighing belt during the metering step. The user can manually adjust the RAP inlet speed based on the mixer's depression value.



ECO-RESPONSIBILITY

OUR VALUES

For us, clients and the environment always come first.

INNOVATION

Our company was established almost 120 years ago. Since then, it has always found innovative solutions for hot-mix asphalt plants. That's why we can take on the most difficult challenges and help our clients develop their business

CUSTOMER SATISFACTION

Meeting our clients' needs is our priority. We work in partnership with our clients, providing them with appropriate and bespoke solutions throughout the life cycle of their asphalt plants

ENVIRONMENT AND SAFETY

we design and manufacture our asphalt plants to minimise their environmental impact. Ensuring safety for the operators and our personnel at the construction site is our priority

TEAMWORK

MARINI is a human-scale, family-run company of the Fayat Group, where teamwork is our strength

CORPORATE SOCIAL RESPONSIBILITY

we are committed to developing sustainability by implementing social and environmentally-friendly activities while valuing the relationship with our employees and partners



OUR TOP PRIORITY: PROTECTING THE ENVIRONMENT

We design our asphalt plants to minimise integrating state-of-the-art technologies to minimise their environmental impact.

LOW VISUAL IMPACT

MARINI'S TOP TOWER RANGE features a compact structure so it can fit into small spaces, thus minimising its visual impact.

LOW EMISSIONS

TOP TOWER complies with the most stringent regulations on atmospheric emissions.

We can ensure low emissions as we rely on a high-efficiency burner, handle RAP correctly (protecting the bitumen contained in it) and use a high-performance bag filter.

CO₂ EMISSIONS

How do we keep CO₂ emissions low? By ensuring high recycling rates, locating the plant near the worksite, and using biofuels.



SOIL PROTECTION

By storing sensitive products (chemical additives) in appropriate containers and no longer using diathermic oil, we have eliminated any accidental risk of environmental pollution.

SMELL POLLUTION REDUCTION

MARINI technologies minimise VOC emissions and unpleasant odours associated with bitumen vapours.

LOW NOISE EMISSION

Noise is reduced upstream thanks to various solutions, including a frequency inverter on filter/burner fans or silencers on pneumatic cylinder. This way, the plant can be easily integrated into the environment.

AFTER-SALES SERVICE

We at Marini have implemented a strategy including the plant's whole life cycle, which represents solid and unifying values:

- Our commitment and our will to focus on customer service to support our clients every step of the way and place them at the heart of our organization.
- Our technical support is based on a competent team and an organization that is willing to listen to its customers.

RETROFITTING

Our experts help you find the best configurations to improve the asphalt-production plant's functionality and operating life and preserve the initial investment value.

TRAINING

The MARINI ACADEMY is addressed to companies from the road industry and specialises in technologies for the industrial production of HMA. The course portfolio includes in-person and online classes, combining theory and practice.



SPARE PARTS

Our spare parts help maintain your plant's performance high. Our spare parts service aims at meeting any deadline and safety issues.

AFTER-SALES SERVICE

Our expert technicians help you make your investment profitable and keep your plant efficient over time. The emergency toll-free number is active 24/7 to answer your doubts on use, maintenance, and troubleshooting. Moreover, our technicians are also available to commission and repair your plant at any time.

PARTNERSHIP AND PROXIMITY

Marini has always worked to meet the requirements of its clients.

A team of expert project managers is always available to find a solution that complies with the regulations in force and technical specifications and minimises energy consumption, CO₂ and odour emissions.

Our best engineers will find state-of-the-art solutions while our technicians will provide technical support during every step of the plant's life cycle.

That's how we stay by our clients' side. Because your success is our success.



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