



### A WINNING RATIO

THE ABC SOLIDBATCH ASPHALT-MIXING
PLANT IS THE COST / PERFORMANCEOPTIMISED SOLUTION WITHIN THE
AMMANN PORTFOLIO.





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### AMMANN BATCH PORTFOLIO

CONSISTENT FROM START TO FINISH.

AMMANN BATCH PLANTS PROVIDE THE HARMONY
THAT IS CRUCIAL TO YOUR MIX QUALITY.

All plant processes and components are carefully developed to ensure that feeding, heating, drying, screening and mixing seamlessly blend together. Helping integrate all the moving parts is the as1 Control System, which provides leading technology with a user-friendly interface.

#### SOME THINGS NEVER CHANGE

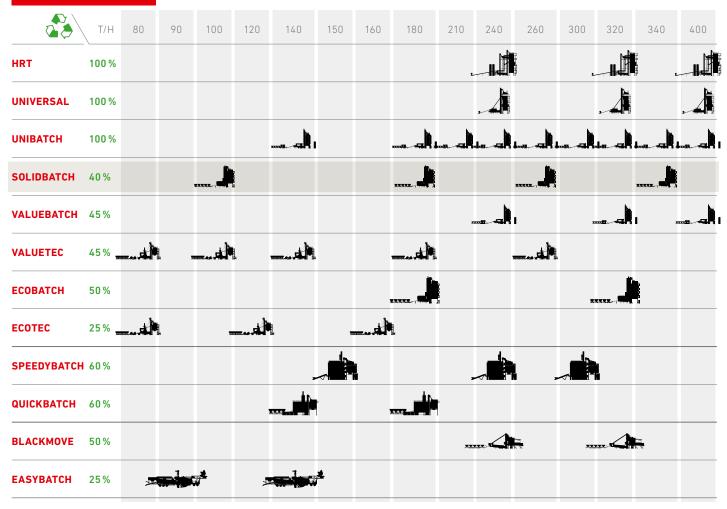
Ammann has had a presence in the asphalt plant industry for more than 100 years – before the advent of recycled asphalt, continuous drum mixers or transport-optimized plants.

What hasn't changed is how Ammann does business. To this day all core

components are engineered and manufactured in-house to create a perfect fit and ultimately provide quality, efficiency and long life. This approach also means a single point of contact for virtually all plant needs.

A century of industry expertise, meanwhile, ensures an understanding of your business and the development of plants that provide real-world solutions.

#### **BATCH PORTFOLIO**



### **AMMANN SOLIDBATCH** PLANT PERFORMANCE













	PLANT				
	ASPHALT MAX.				
TYPE	PRODUCTION				
	[T/H]				

DRYER DRUM BURNER TYPE

[MW]

FILTER TYPE [SURFACE M<sup>2</sup>]

SCREEN [N° SEL.] HOT MINERAL SIL0 HMS  $[1.6 \text{ T/M}^3]$ 

MIXER TYPE CAPACITY ASPH. PROD. IN T/H AT

READY MIX SIL0

	3 %	5 %					[]	85 BATCH/H	
100	100	80	T-1650	7	AFA 2238 [277 M²]	VA 1230 [4-5]	20	AMIX 1.12 1'200 KG 102	UP TO 60 TONS
180	180	140	T-2080	14	AFA 3042 [483 M <sup>2</sup> ]	VA 1536 S [4-5]	29	AMIX 1.22 2'200 KG 187	
260	260	210	T-2390	18	AFA 3062 [724 M²]	VA 1840 S [5-6]	36-86	AMIX 2.30 3'300 KG 280	UP TO 90 TONS
340	340	260	T- 25100	24	AFA 3075 [885 M²]	VA 2050 S [5-6]	40-115	AMIX 2.40 4'300 KG 365	

RECOMMENDED CONFIGURATION - PLEASE CONTACT AMMANN SALES FORCE FOR TUNING YOUR ASPHALT PLANT



# A SIMPLE AND CLEAR CONCEPT

THE LATEST PLANT IN THE AMMANN FAMILY, THE SOLIDBATCH 100, COMPLEMENTS AND COMPLETES THE REVISED VALUE SERIES OF PLANTS IN AMMANN'S EXTENSIVE RANGE, FROM 100 TPH TO 340 TPH.

In the new SolidBatch we find all the UNIQUE VALUE POINTS in the design that have made the UniBatch plant so successful worldwide. These include the compact, ever-improving drying-filtration performances, which guarantees not only significant energy savings but also an increase in production capacity.

A standard plant in its proposal, but one that meets all our customers' most stringent requirements:

- reliability over time
- limitless performance, also optimised with the use of RAP up to 40%
- simplicity and safety in maintenance
- construction quality of the highest level
- possibility of upgrading the asphalt plant over time, thus addressing each investment in the most correct and gradual way.

Concreteness and with its feet firmly planted in the ground, the SolidBatch is the plant designed for customers who need to produce asphalt and complete laying operations in the shortest possible time. The SolidBatch represents the best VALUE PROPOSAL on the market, with its lowest TCO (total cost of ownership), its competitive purchase price combined with minimal transport, installation and maintenance costs. All to maximise all customers' experience with AMMANN equipment.





### SOLIDBATCH: ADVANTAGE OVER ALL OTHERS

EXCEPTIONAL PERFORMANCE,
RELIABILITY AND QUALITY ARE
THE CORNERSTONES OF OUR
CUSTOMER COMMITMENT. THESE
CRITERIA CREATE UNIQUE
ADVANTAGES THAT SEPARATE
THE SOLIDBATCH FROM
COMPETITORS' PLANTS.



- Designed for using RAP into the mixer up to 40%
- Designed to produce COLD, WARM, and HOT mix
- Optimised and modular products can be upgraded at any time

We continuously invest in technology and innovation to ensure the best solutions for efficiency, energy savings and sustainability. The utilisation of recycled asphalt lessens the plant's environmental impact while offering scalable solutions for specific needs.

Optimised transport and on-site assembly bring flexibility, cost-effectiveness and immediate production to our customers.

Last, but certainly not least, is the highly advanced as 1 Control System that furthers production efforts.



- Ammann technology provides efficient energy consumption compared to competitive plants
- Low energy consumption = low CO<sub>2</sub> emissions
- Low energy consumption = reduced operating costs





- Best TCO (Total Cost of Ownership) on the market
- Low-cost handling and transport
- Quick installation







- All plants designed:
- $\checkmark$  To be aesthetically pleasing or out of view
- √ To provide scalable solutions for air, sound and odour emissions



- Ammann provides excellent value in dryers and burners, filter bags, screens and mixers, and control system
- All core parts are designed in Switzerland
- Special solutions such as Amdurit and Ammatex solve real customer problems



- At work in more than 3,000 plants globally
- Most innovative and complete system ever designed for asphalt plants



AMMANN ASPHALT-MIXING PLANTS UTILISE COMPLEX PROCESS ENGINEERING THAT REQUIRES PERFECT INTERACTION BETWEEN ALL INDIVIDUAL COMPONENTS.

So essential is this integration that Ammann engineers all core components in-house – including drums, burners, filters, screens, controls and mixers.

Doing so is the only way to guarantee that our plants will meet the demanding requirements and standards of the modern market environment. Ammann is currently the only manufacturer of asphalt-mixing plants to offer this single-source approach, establishing us as a professional partner to handle every aspect of your asphalt-mixing plant. We provide answers when you need them and keep an open mind in order to fully understand your needs.



l earn more

AMMANN





#### **DRYER DRUM**

- A single manufacturer provides all drying / heating / exhaust management processes, ensuring perfect attunement
- A wide range of dryer sizes for plant capacities of 100 to 340 tonnes per hour to meet varied needs
- Optimised heat transfer stages and dryer insulation for maximum efficiency and fuel savings
- Low-wear, low-maintenance design with high material quality and easy exchange of wear parts
- Adaptable internal dryer design for use of varied aggregates and fuels

#### **BURNER**

- Multi-fuel firing with simultaneous or alternating combustion of up to three fuel types for maximum flexibility
- A highly effective combustion process for low fuel consumption and emissions
- Combustion of solid pulverised fuel without the need of a supporting flame
- Integrated soundproofing for reduced sound; further reduction possible through a frequency converter
- Safety concept meets regulations of all countries

- Available for varied liquid, gas and solid fuels:
  - Light oil
  - Heavy oil
  - Waste oil
  - Bio oil
  - Kerosene
  - ▲ LPG
  - Natural gas
- LPG in a gas state
- Hydrogen
- Coal dust
- Wood dust



#### **FILTER**

- Proprietary rotor step mechanisms gently clean the filter bags
- Filtration efficiency of 99.9 % ensures compliance
- The largest possible surface provides optimal filtration efficiency
- Minimal moving parts reduce maintenance and improve reliability
- High-quality aluminium supporting cages are acid resistant
- The CFD-supported baghouse design reduces temperature and pressure losses



#### **SCREEN**

- Precisely controlled variables include stroke angle, amplitude, frequency, screen body design and mesh geometry. The result is the highestperforming screens in the market
- · Optimised for high temperatures
- The screen is state-of-the-art
- Easy integration due to identical interfaces



#### **MIXER**

- Minimal wear through protected components and an efficient mixing process
- Compulsory twin-shaft mixer provides highest shear forces
- Optimal homogeneity and mixing time through the unique Ammann paddle arrangement
- Maximum sequence design flexibility that enables production of special mixes



A SHORTAGE OF INDUSTRIAL LAND MEANS THAT ASPHALT-MIXING PLANTS MUST INCREASINGLY BE LOCATED CLOSER TO RESIDENTIAL AREAS.

THAT MAKES IT MORE IMPORTANT THAN EVER THAT PLANTS MINIMISE NOISE IN AN EFFORT TO BE GOOD NEIGHBOURS AND TO MEET LOCAL REQUIREMENTS.



- Ammann offers four levels of noise suppression.
- · SolidBatch plants are designed for easy cladding.
- Cladding prevents dust and fumes from being released in the atmosphere.
- Plants with cladding are aesthetically pleasing, essential when seeking approvals in urban areas.

#### LEVEL 1

#### AN ECONOMICAL, EFFECTIVE APPROACH

Includes several basic cost-conscious efforts:

- The burners are equipped with variable speed drives so the electric motor can be slowed – and made quieter – when full power isn't needed
- A stack silencer, which is essentially a chute inserted in the chimney, acts as a sound suppressor
- Head stations of the elevators for reclaimed asphalt pavement (RAP) and virgin aggregates (VA) are covered with panelled cladding to reduce sound levels from the inside
- Sound-inhibiting walls are placed around the plant exhauster to cancel noise from inside



#### LEVEL 2

#### **COVERING MAIN EMITTERS**

Builds on Level 1 and then offers several additions and upgrades:

- The burners are covered with panelled cladding
- The RAP and VA elevator shafts are insulated to minimise the sound of turning chains and falling material
- The RAP and VA transfer chutes are
- Sound-inhibiting walls are placed around the plant exhauster to cancel noise from inside
- The mixer and weighing level are clad with trapezoidal panels

#### LEVEL 3

#### **CLADDING FOR FURTHER REDUCTIONS**

Builds on Levels 1 and 2 and then offers several additions and upgrades:

• The mixer and weighing level are clad with sound-absorption panels (An improvement from trapezoidal sheets in Level 2)

#### LEVEL 4

#### THE QUIETEST PLANT **POSSIBLE**

Builds on Levels 1, 2 and 3 and then offers several additions and upgrades:

- The VA dryer and the burner are fully surrounded by a housing with soundabsorption panels
- The cold feeders utilise three-sided housing
- A sound-suppression housing is placed over the bitumen pump and compressor unit









#### **BLUE SMOKE TREATMENT**

The system, developed by Ammann, addresses the blue smoke that is released during truck loading.

With this process, the vapours are aspirated at the skip or diverted under the mixer – not near the discharge doors of the finished product silo.

The system is based on the principle that hot air rises, thus decreasing the volume above the finished product silo. At this point in the process, blue smoke is piped to a cooling system for the condensation of the oily phase – and subsequently to an oil separator for the capture of the finest oily particles. The treated gases are transferred to the burner and ignited.



#### **GREEN AIR SYSTEM**

With this process, a special kit injects odour treatment products into the existing clean gas channel between the exhaust fan and the stack.

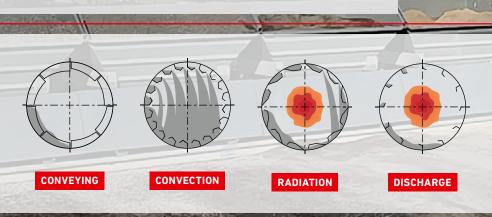




AMMANN PLANTS ENABLE CUSTOMERS TO CARRY OUT THEIR DUTIES EFFICIENTLY AND PRODUCTIVELY. THE PLANTS HELP CUSTOMERS WORK SMARTER, NOT HARDER.

#### DRYER

- SolidBatch dryers are highly efficient at production levels of up to 64 t/h at (3 % moisture content) per square metre 22 % more efficient than the existing standard.
- This results in low energy consumption, which in turn reduces fuel costs and CO<sub>2</sub> emissions.
- Recycling rate up to 40% at 2% H<sub>2</sub>O. Designed to produce cold, WMA, and hot mix asphalt.
- That temperature range is 20 °C less than competitive dryer drums and can be measured in savings of 1 kWh/T.





Our sustainable promise

#### FILTER

- Less pressure lost means lower energy consumption.
- The new design ensures uniform distribution of exhaust air inside the filter.
- Proper distribution/filling utilises more of the bag surface and improves efficiency.

#### BURNER

- New technology controls the flame shape.
- More power can be given in smaller dryers, resulting in efficiency and energy savings per ton of aggregates dried and heated.
- A special software optimises air/fuel mixing for increased combustion efficacy, leading to significant annual savings in fuel.



#### **AMMANN FOAM**

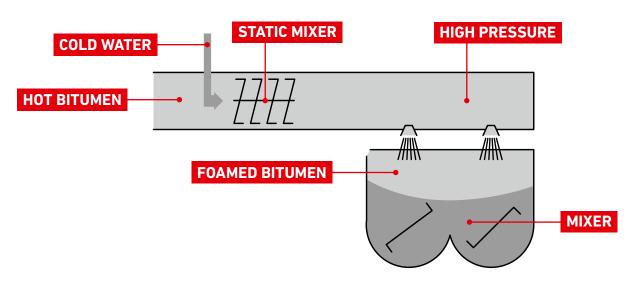
AMMANN BELIEVES LOW TEMPERATURE ASPHALT MIXES ARE THE FUTURE OF THE ASPHALT INDUSTRY.
THEREFORE, WE DEVELOPED THE AMMANN FOAM SYSTEM IN COLLABORATION WITH OUR CUSTOMERS AND INTERNAL EXPERTS.

The low temperatures associated with the use of Ammann Foam provide big advantages::

- Higher workability during mix production and placement
- Improved compaction performance
- Extension of the paving season
- · An ability to deliver mixes longer distances
- Better recycling performance

Using Ammann Foam to produce warm mix asphalt (WMA) provides additional benefits:

- Reduced VOC emissions from bitumen
- Lower levels of gas emissions and CO<sub>2</sub> from savings in drying and heating of virgin aggregates
- Diminished fumes, emissions and odours
- Quicker opening of roads to traffic
- Savings in production costs through reduced energy consumption





#### AS1 ECOVIEW

# THIS AS1 MODULE HELPS UNCOVER AND ELIMINATE ENERGY WASTE.

#### **HIGHLIGHTS**

- Intuitive operator display showing how efficient the plant runs
- Displays key values and enables comparison to reference values and previous periods
- Determines the emitted CO<sub>2</sub> values
- Determines the resulting energy costs





THE USE OF RECYCLED ASPHALT IS A NECESSITY GIVEN TODAY'S SUSTAINABILITY NEEDS.

AMMANN IS A WORLD LEADER IN THE DEVELOPMENT OF RAP TECHNOLOGY.



#### **UP TO 40% COLD FEED** INTO THE MIXER

#### **BENEFITS**

- Recycling rate up to 40% @ 2%  $H_2O$
- Limited initial investment
- RAP is dried-heated directly in the mixer in contact with overheated aggregates
- It is possible to produce always via the screen





### AS1 PEAK LOAD MANAGEMENT

### AS1 DYNAMIC RECYCLING ADDITION

Energy suppliers typically base pricing on usage or capacity. For the latter, the measured peak sets the price. Therefore, it is in the best interest of plant owners/operators to keep usage as low as possible during peak loads.

The as1 Peak Load Management module continuously monitors peak usage against critical values. It predicts peak times and reduces load during the costliest periods.

Some plant devices can be switched off during these periods. The module also utilises automatic stepping based on forecasts.

Peak Load Management works seamlessly with the as1 EcoView module and is available for both electricity and gas.

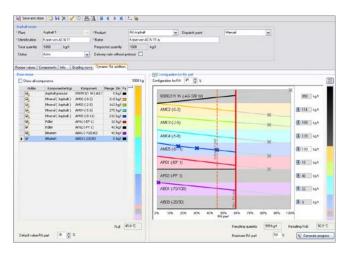
The RAD module makes it easy to modify the RAP ratio. An integrated wizard guides the operator through the recipe input process. Slide controls enable adjustment of the RAP ratio during production.

It is designed to ensure that RAP addition, and therefore binder saving, are always maximized: This gives operators the confidence to keep throughput high while maintaining quality as the overarching priority. This, in turn, ensures that efficiency is excellent and therefore profitability is maximized.

#### VARIOUS RAP RATIOS IN A SINGLE RECIPE

Use of reclaimed asphalt protects natural resources and also offers economical advantages. The optional as1 module "dynamic RAP addition" makes it easy to modify the RAP ratio in accordance with requirements, even during production.





#### **HIGHLIGHTS**

- Prevents short-term, expensive usage during peak loads
- Forecast function
- · Automatic switch off for electrical consumers

#### **HIGHLIGHTS**

- The integrated wizard guides operator through the recipe input process
- One recipe is sufficient for numerous RAP ratios
- Change the RAP ratio by using the slide controls during production



## THE POWERFUL AND FUTURE-ORIENTED AS1 SYSTEM CONCEPT COMBINES PROVEN AMMANN SOFTWARE WITH SPECIALLY MATCHED INDUSTRIAL HARDWARE.

The as1 computing environment has been designed and tested for use in tough environments. Its networking capability also has been optimised. Customers profit from the flexible workstation configuration, networking and administration.

### THE FIELD BUS SYSTEM GUARANTEED FOR RELIABLE SIGNAL TRANSFER

The proven field bus system is robust and reliable under tough operation. Faults can be detected efficiently and rectified by means of the diagnostic tools, even via remote support.

### THE POWER CABINET'S COMPONENTS DESIGNED FOR TOUGH, ROUND-THE-CLOCK OPERATION

The power cabinet's components have to withstand extreme stress 24 hours a day, which is why Ammann only uses tried-and-tested, globally available quality components from renowned manufacturers.

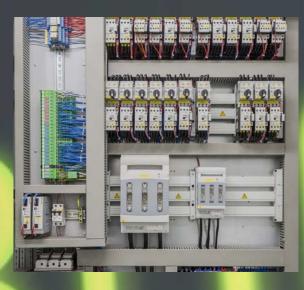
#### HOTLINE AND SUPPORT PLANT AVAILABILITY ASSURED

Electromechanical faults can be quickly resolved by the customer's own personnel with the help of the electrical circuit diagrams and the as1 diagnostic tools.

Ammann's knowledgeable customer service team staffs the hotline, which can be called for fault diagnosis or maintenance at any time. Modern telecommunications media increase the availability of the plant and reduce the need for costly on-site servicing.

#### **HIGHLIGHTS**

- Comprehensive system functionality
- Quick and easy to learn
- Safe to operate
- · Proven, reliable field bus and load-sharing
- Professional hotline and support organisations ready for service worldwide







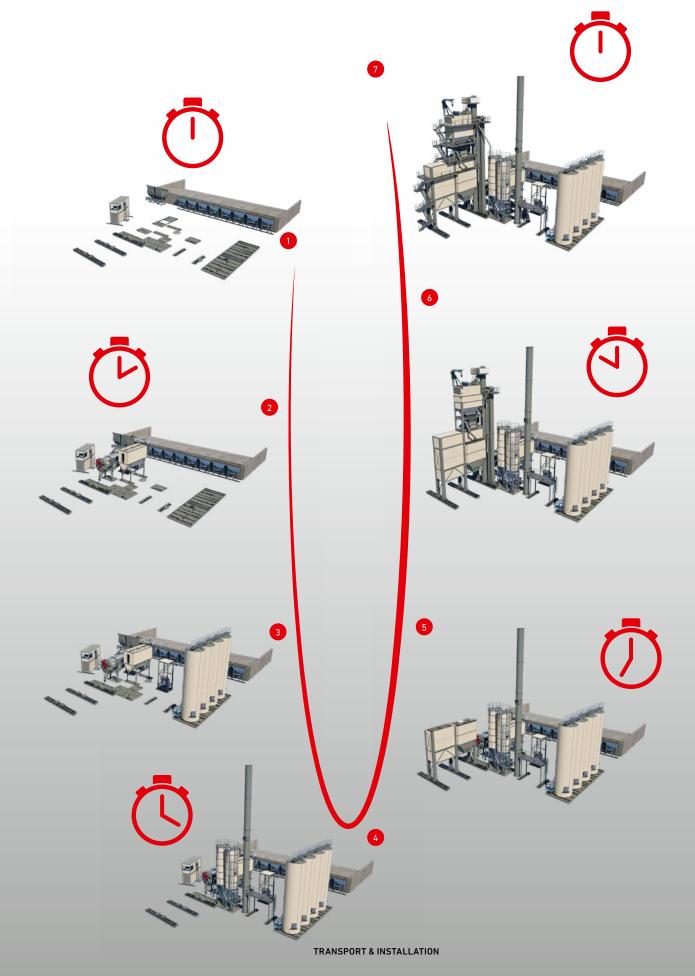
### THE SOLIDBATCH IS DESIGNED AND ENGINEERED TO SIMPLIFY TRANSPORT AND ON-SITE ASSEMBLY.

Cost-effective transport and erection are essential to customer value. Plant options include steel bases that enable installation on stabilised soil – without the need of a concrete foundation. All cables are pre-assembled and tested in house.





#### QUICK INSTALLATION



### AMMANN AFTER SALES PLANTS

CONTRACTED MAINTENANCE SERVICES AND TECHNICIAN TRAINING PROVIDED BY AMMANN HELP PROTECT YOUR INVESTMENT, WHILE OPERATOR TRAINING ENSURES YOUR TEAM IS ABLE TO UTILISE ALL THE FEATURES AND BENEFITS BUILT INTO YOUR PLANT. WHEN YOUR NEEDS CHANGE, AMMANN OFFERS RETROFIT OPTIONS THAT CAN PROVIDE YOU WITH A GOOD-AS-NEW PLANT AT A LOW COST.



#### RETROFITTING

- Improve the technological level of the plant
- Increase component life
- Increase the plant's efficiency

#### **ORIGINAL SPARE PARTS**

- Maintain the initial performance of the plant
- Maximise plant use times (no stops in production)
- Monitor the maintenance costs

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#### **TRAINING**

- Increase the plant's efficiency
- Reduce unnecessary costs
- Maximise plant use time

#### TECHNICAL SERVICE

- Assembly and professional testing of the system
- Technical assistance
- Preventative maintenance

### **AMDURIT**

AMDURIT, AMMANN'S PROPRIETARY WEAR-PROTECTION SYSTEM, PROVIDES UP TO THREE TIMES THE SERVICE LIFE OF WEAR-RESISTANT STEEL AND PROTECTS VALUABLE PARTS AND COMPONENTS.



### AUTOMATED LUBE SYSTEM

WHAT IF A SINGLE
PROCEDURE COULD
EXTEND THE LIFE OF
YOUR PLANT, REDUCE
FUEL COSTS AND
IMPROVE SAFETY,
TOO?



#### **BENEFITS**

- The Ammlub system is directly mounted on the lubrication point and guarantees continuous relubrication at short intervals
- Lubricants can be replaced while the plants are running, optimising routine maintenance while keeping your plant productive
- Improves safety by removing workers from the process
- Reduces energy costs up to 10 %

# AMMATEX FILTER BAGS

MULTIPLE FILTER BAG TYPES ARE AVAILABLE TO ENSURE YOU HAVE A PERFECT FIT AT YOUR PLANT.

#### **BENEFITS**

- Precise manufacturing ensures quick installation and a perfect fit
- Suitable for all fuel types
- Exceptional price/performance ratio
- Low emission values thanks to proper sealing and fitting
- Reduced plant operating costs due to extended life of bags



AMMANN WORLD PRESENCE

#### AN INNOVATIVE, SUSTAINABLE BUSINESS

Ammann is a world-leading supplier of mixing plants, machines and services to the construction industry, with core expertise in road-building and transportation infrastructure. We are committed to sustainability – in both the products we make and the ways we make them.

Our strengths are the forthcoming approach of a family firm that has been operating for many years, coupled with our strong and well-established international presence. Since 1869, we have been setting benchmarks in the road-building industry, thanks to countless innovations and solutions that are as competitive as they are dependable.

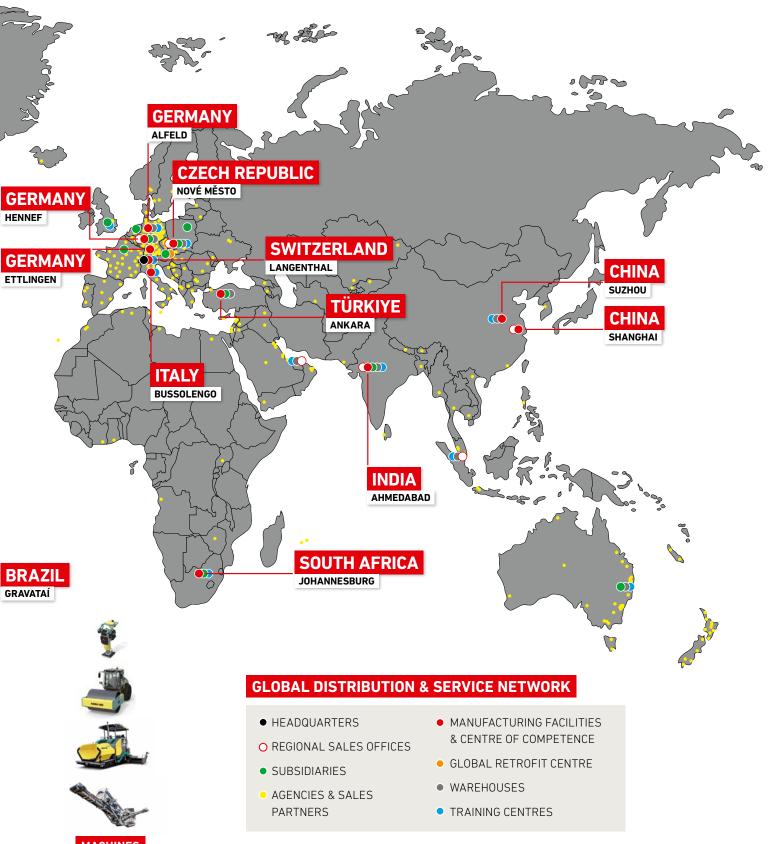
True to our motto, "Productivity
Partnership for a Lifetime," we gear our
activities to the needs and requirements
of our customers around the globe.
Plants and machines that consistently
prove their merits under demanding
conditions are the best way to give our
customers the critical, competitive edge
they need.

Our reliable, punctual service network provides the essential spare parts that keep our customers working – and supports the plants and machines throughout their lifetimes.

200+ AGENCIES & SALES PARTNERS **REGIONAL SALES OFFICES & SUBSIDIARIES TRAINING WAREHOUSES** 2 MANUFACTURING FACILITIES & CENTRE OF COMPETENCE

PLANTS

ASPHALT-MIXING PLANTS
CONCRETE-MIXING PLANTS

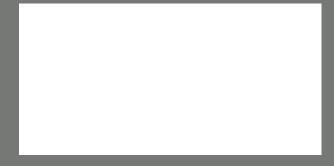


MACHINES

LIGHT COMPACTION

SOIL & ASPHALT COMPACTION

ASPHALT PAVERS
ASPHALT RECYCLING



For additional product information and services please visit: www.ammann.com

