

REACHING FOR THE STARS... AND STRIPES



IN 2019 BLEND PLANTS, A COMPANY SPECIALISING IN THE PRODUCTION OF MOBILE CONCRETE PLANTS, REACHED THE US MARKET WITH A SYSTEM CAPABLE OF MEETING THE NEEDS OF OVERSEAS CONTRACTORS. FROM CEMENTITIOUS MIXTURES, TO COLD ASPHALT, FROM CONCRETE TO RCC, BLEND A240 IS A TRUE MOBILE AND MULTIPURPOSE PLANT.

When Blend Plants decided to introduce its plants in the United States in 2019, no one would have imagined a response as fast as it was positive.

Founded as a manufacturer of mobile plants on industrial vehicles, the company Blend Plants, based in Italy, has introduced its plants all over the World, also reaching the North American continent, where it has found fertile ground in the production of RCC (Roller-Compacted Concrete).

RCC: WHAT CHANGES FROM CONVENTIONAL CONCRETE

RCC pavements was born in the 1970s, in the Canadian wood industry, from the need to create resistant and low-cost surfaces, capable of withstanding heavy loads of specialised machinery. Thus, a type of concrete pavements is developed, not reinforced, but of high density that differs from conventional concrete in terms of construction method, installation and costs.

RCC is a mixture that has the same ingredients as conventional concrete, but in different ratios: aggregates, Portland cement, supplementary cements, chemical mixtures and water. Unlike conventional concrete, RCC is a very dry mix, which seeks to obtain high strength with little cement,

maintaining a very low water-cement ratio, with a zero slump (water by weight near optimum generally around 5%; conventional concrete water by weight can exceed 20%).

Furthermore, RCC offers several advantages including rapid laying, high load capacity and durability over time. While, unlike asphalt, it demonstrates good resistance to liquids and heat.

Today the RCC is widely used in the construction of logistic, port, and commercial areas.



2. Laying and rolling RCC.

1. Blend A240 coupled with the horizontal silo.





3. RCC is suitable for the construction of surfaces used for parking, logistic or commercial areas.

HOW BLEND RESPONDS TO MARKET DEMAND

A growing market requires machines that can respond to particular needs:

- Large floor surfaces require batching plants on site, to reduce the cost of transport, but also easy to disassemble/reassemble for moving from one site to another.
- Mixing dry material is challenging for traditional mixers.

Blend A240 is a multipurpose plant: high production capacities are combined with total hydraulic and electrical autonomy and maximum ease of transport.

It is a truly mobile system and not just transportable, ready to work in less than two hours: positioning and installation do not require cranes, ladders or electrical grounding. The plant stands on its own hydraulic pistons, no axles, tires or frames are needed. Weights and dimensions are within the standards, so no oversized transport is required. The modular concept provides 2, 3 or 4 hoppers.



4. A240 requires no oversized transport and is installed in less than two hours.

The real innovation of the plant lies in the continuous mixer, which allows a production of up to 120 m³/hour, associated with the dosage of the aggregates, dosed by weight continuously. Everything is electronically controlled by load sensors that guarantee a constant mixing, which is fundamental for the quality of the final product: it is a system that offers important production levels.

The interesting element is that the type of mixer allows you to work with recycled aggregates, in a perspective of true circular economy.

Blend A240 was created to satisfy the request for very high mobility and flexibility to make RCC, but also conventional concrete, soil stabilisation and asphalt. This multifunctionality offers the opportunity to use the plant in different applications, which guarantees a better amortization of the capital investment.



5. A240 is available with 2, 3 or 4 hoppers. The reduced height of the plant means that loading of the aggregate hoppers using a wheel loader virtually eliminates the need for a ramp.

WHY IS BLEND A240 A GREAT SOLUTION TO RCC MANUFACTURING?

We present a conversation between Ricardo Vegas (Blend Area Sales Manager) and Kevin Wentland (RCC finished surface consultant)

Ricardo Vegas: "Kevin, how do you get a good finish on the RCC?"

Kevin Wentland: "Everyone thinks that RCC is based on the additive, which is certainly a fundamental part, but correct mixing is also essential, as is the equipment used in its application. One application is a densifier which is a colloidal silica which is placed on the concrete by means of a spray; this additive creates an ionization that attracts the particles creating a paste that closes the porosity of the surface. The rider trowel machine pans the surface to create the final finish.

The first thing to get a durable concrete is to make sure you have a solid base, remembering that there is no reinforcement. Many think that two aggregates are sufficient and this is perhaps the biggest problem, because they use dosing systems that have only two aggregates. What is really needed is to optimized gradation and to maximize the filling of void spaces with aggregates, to minimize compaction energy needed and maximize density.

Remember that we are trying to compete with the cost of asphalt and we need to achieve maximum strength by using cement carefully: the use of paste as binder to coat the surface of aggregates does not fill void spaces. Unfortunately, most of the plants used for RCC work with a volumetric flow, despite having a perfect dosage, if the mixer is not able to dispense a homogeneous product with zero slump, there is no additive in the world that can solve the performance of the RCC.

Then, immediate laying using special dual tamping bar screeds to achieve 100 % density through paver.



6. The continuous twin shaft paddle mixer slides out on rails to facilitate cleaning and maintenance.



7a-7b. The A240 plant with the horizontal silo, purchased from TCP Concrete, worked day and night, producing about 20,000 m³ of concrete.



8. Blend A240 comes powered by CAT diesel engine or either electric.



9. The A240 plant used by Robert Smith Inc. produced 14,000 m³ of RCC concrete in just two and a half months.



10. The latest A240 plant recently delivered in The USA to Synergy Contracting Inc.

THE FIRST STEPS IN THE UNITED STATES

In 2019 Blend Plants sold its first A240 plant in the United States to TCP Concrete.

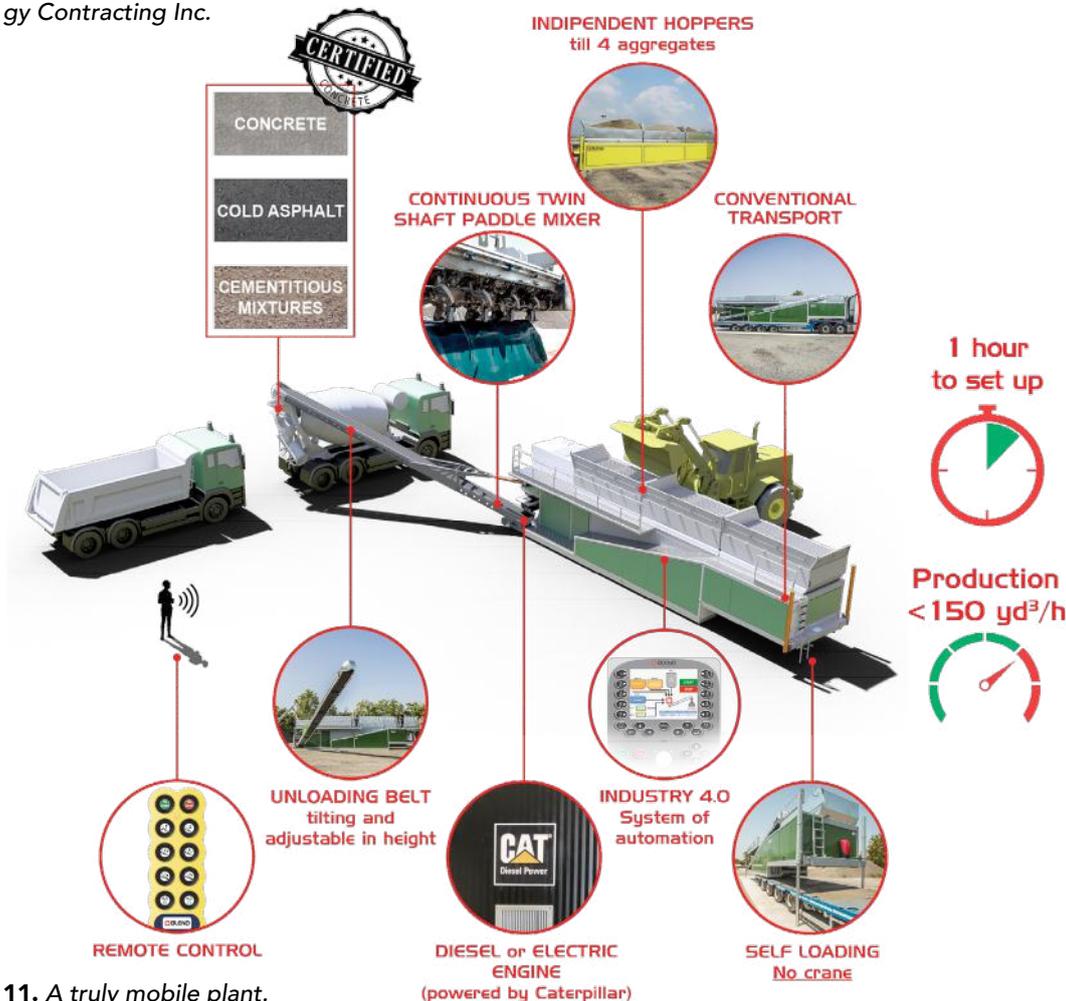
The ease of transport of the plant and of the horizontal silo, also designed and produced by Blend, on conventional transport equipment, is perhaps the first feature that impressed the customer Terry Bird who asked, after positioning the plant: "Why do you offer a machine that can be

installed in an hour if I did it in only 30 minutes?"

After a few months another request came from Robert Smith Inc. who used the A240 to build the pavement of a logistics warehouse with over 14,000 m³ of RCC concrete in just two and a half months. Due to the current situation and the impossibility for Blend technicians to start the plant on site, the installation took place by means of an efficient remote assistance and an intuitive control panel system.

These were the first of a series of successes achieved by Blend Plants in less than two years.

What seemed impossible in mid-2019, today, is a reality with seven plants in the United States and with a growth plan that allows Blend Plants to enter niche sectors with an offer of high quality products suitable for respond to the needs of today's market.



11. A truly mobile plant.