

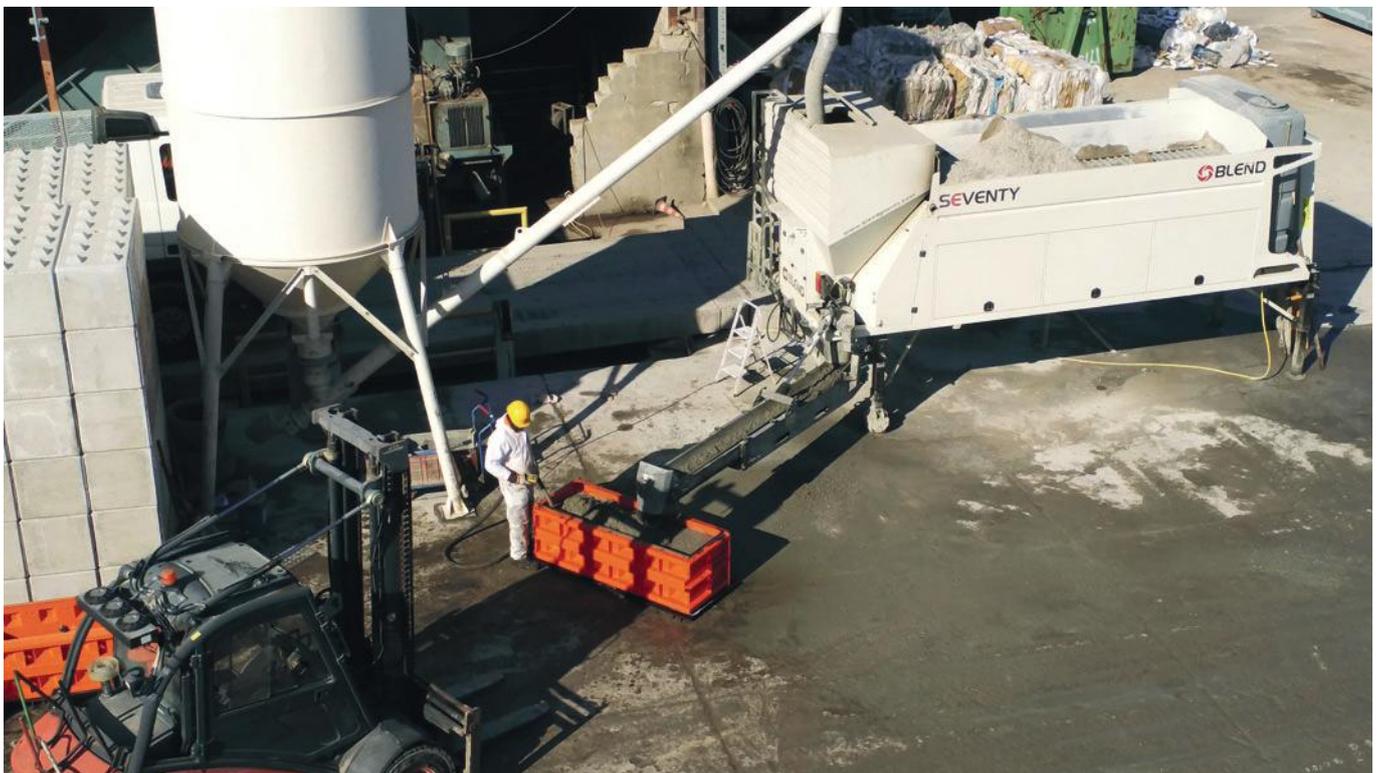
Blend, Rodengo Saiano (BS), Italy

“Circular Efficiency” – concrete production with recycled aggregates

Circular economy – many talk about it, but only a few really put it into practice. The machines and mixing plants from the Italian manufacturer of machinery Blend are a step forward in this direction. In the province of Lecco, in Colico, Italy, the company *Attività di Recupero Srl* has completely focused on circular economy, recovering all types of materials: from plastics, to paper, metals and finally materials that come from demolition and construction sites. The latter are carefully selected to completely separate the waste concrete from other kinds of waste. This allows a re-use of the aggregates – a “noble” use – as a raw material for the production of fresh recycled concrete, which in turn is used for the manufacture of new products, amongst others of “Betonblock” containment blocks. A “Blend Seventy” plant allows *Attività di Recupero Srl* to operate a real circular economy in which efficiency is the added value.

Attività di Recupero Srl clearly states its corporate mission already in its company name – it can be translated to English as “Recovery Activity”. A “Blend Seventy” plant on a demountable structure operates daily and is used in the production of concrete obtained from recycled aggregates.

“When we utilise the Blend Seventy here at our headquarters, inside the facility of our recycled material collection centre, it is mounted on its own support outriggers and is fully operational, leaving the vehicle, which has a demountable system, free to perform other functions,” says the plant manager. The Blend Seventy has its own power source, an integrated cement silo and a water tank. The aggregates are filled into the hoppers of the Blend Seventy by a 4 m³ wheel loader.



Blend Seventy is a system capable of operating in a completely autonomous way or in connection with support elements such as stationary cement silos (left) or the water network.

Attività di Recupero Srl

Founded 15 years ago in Colico, Attività di Recupero Srl is active throughout Northern Italy in the sector of civil and industrial demolition, in the collection, transport, disposal and recycling of non-hazardous waste.

The Company provides services aimed at ecology and the strengthening of the circular economy in all types of construction sites, including road works, thanks to the ability to perform also infrastructure works such as earthmoving and filling, soil handling, excavation, crushing and recycling of non-hazardous materials on site.

Over time the company's activity has become increasingly diversified while focusing on the recycling sector, which has been developed in different forms and following different channels.

The recycling of metals, together with that of "noble" recycled aggregates, were the two activities that received the greatest impulse. This is thanks to a careful

activity of demolition and industrial recycling which involved different areas located even outside the Lombardy region.

Blend's plant played a pivotal role in this process, which has allowed Attività di Recupero Srl to add further value to the recycled aggregates obtained by crushing the concrete.

The ability to operate in any context, even on very remote construction sites and in a completely autonomous way, allowed the company to provide further services to its clients and to increase the efficiency of its demolition sites.

The Company located in Colico operates in fact in a strict quality regime, having all the ministerial authorizations envisaged and with a recent and modern vehicle fleet, in which excavators, industrial handlers, wheel loaders, various types of trucks are the daily calling card towards its customers.

Seventy and "Betonblock": Blend-branded circular economy

One major product that Attività di Recupero Srl produces with the fresh recycled concrete are containment blocks. For this purpose, the company uses 20 molds of the "Betonblock" formwork system. The molds are made of a very resistant low alloy steel and the external coating is a powder-paint finishing that increases durability. The range is wide and consists of formwork for the standard block format that, with the use of specifically designed dividing elements, allows the produc-

tion of modular blocks of various sizes. Within the offer, there are also rounded formworks that allow solving the problems of angles other than 90°.

The Betonblock system was designed for rapid execution with a new manual formwork opening system that does not require much effort. The movement is optimized by a series of accessories that allow the transport, movement and overturning of the blocks without damaging them. The range of accessories for correct handling consists in fact of multiple devices designed specifically for this purpose, optimizing time, costs and safeguarding the safety of the operators.





Feeding recycled aggregates into the loading hoppers using a 4m³ wheel loader.



The loading hoppers for the aggregates are divided in a rational way, making loading easy with a wheel loader.

According to the plant manager the combination of the Blend Seventy with Betonblock proved to be successful for Attività di Recupero, because Betonblock is a modular system and the produced blocks can be used both for the construction of containment barriers in road works and for the construction of bays for the containment of aggregates or for the separation of materials. "The ease with which we can move and adapt the Betonblock molds, compose concrete products with geometric shapes of different types and heights, and in the end, with help of the produced Betonblock concrete elements, modulate the spaces that we need for our recycling activities, allows us to save time and to work in a much more orderly way than in the past," says the manager.

Using a Blend Seventy plant, Attività di Recupero is able to manufacture twenty Betonblock elements in about half a day's work. In this case of continuous concrete production the cement is supplied directly from stationary silos, others than the cement silo integrated in the Blend plant itself - the reason for this is that the bigger stationary silos can ensure the cement supply of the plant in this continuous production process for an even longer time, optimizing production time and

costs. The same applies for the water that in this case is supplied directly from the water network. These are features that increase the versatility of the Blend system and make it a system suitable for both types of application - as fixed and as mobile workstations.

The combination with Betonblock allows to optimally close the production cycle that foresees the re-use of recycled aggregates as a fundamental resource. The possibility of using mixes made of 100% recycled aggregates, makes the Blend Seventy machines ideal machines for these uses.

Mobile use on construction sites

In fact, Attività di Recupero uses the plant also often on construction sites to produce cementitious mixes and concrete to be used e. g. for foundations and floors or on road worksites for the continuous production of concrete for non-structural applications. The simplicity of transport and the possibility of leaving the plant on site, thanks to its complete autonomy, optimize costs and allow Attività di Recupero Srl to be competitive.

Betonblock

Many years of experience in the sector have allowed Betonblock to develop a method to obtain a simple and efficient product from concrete residues. The goals are the reduction of disposal costs by obtaining a commercial product. An advantageous solution that allows the simple production of functional and modular concrete blocks in-house.

The Betonblock system, sold by Blend, includes formworks available in different models and sizes carefully designed to allow the production of easy-to-assemble elements: The upper protrusions and the lower re-

cesses of the blocks have their own logic that follows the principle of Lego, allowing a stable overlay without using any link or mortar between them. In this way it is possible to re-use them so easily and quickly modifying the structure obtained.

The blocks obtained are ideal for the construction of partition walls, retaining walls, fire walls, etc., with a widespread use in agriculture, soil handling, recycling. As well as for infrastructures and ancillary works in the road sector. Betonblock elements are particularly suitable for the construction of storage bays for aggregated materials.



The Betonblock elements are produced using 20 molds. Their modularity allows to produce also elements with rounded profiles for irregular angles.

"The plant is a machine that changed the way we work and made it more efficient. It allows us to implement in a practical and efficient way the concept of circular economy, enhancing the recycled aggregates both in the recycling centre and on construction sites", says the plant manager.

The Blend Seventy plant allows an intensive use. "Productivity is very good: it is obvious that we cannot expect the same production rate as with a stationary plant - the manager continues - but flexibility and ease of use are two factors that make us evaluate it in a completely positive way. We particularly appreciate the ease with which, at the end of the cycle, it is possible to clean moving parts such as belts, the rear mixer and the hoppers. The mounting system on the truck, thanks to the demountable configuration we chose, is ideal for making the most of its versatility". ■

FURTHER INFORMATION

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