

Hess Group, 57299 Burbach-Wahlbach, Germany

# Artic puts another concrete block line into operation

■ Mark Küppers, CPi worldwide, Germany

**Arabian Tile Co. (Artic) is a part of Al Aggad Investment Company (AICO) and was founded in 1975. With more than 45 years' experience, today Artic is one of the leading manufacturers of concrete products and building materials in the Gulf region. The company has four factories in Riyadh, Jeddah, Al-Kharj and Dammam, all at strategically favourable locations in Saudi Arabia. All in all, the four factories feature a total of 17 production lines. Some of them were supplied by the Hess Group, a company from the Topwerk Group. After commissioning the first Hess line in 2003, another one followed in 2011 and then the third in 2015. The fourth line, a Hess RH 1500-4 concrete block machine, was recently put into operation as a key component. Not only does this make Artic one of the Hess Group's first customers in Saudi Arabia, but also one of the most loyal.**

By its own account, Artic was the first company to manufacture terrazzo tiles in Saudi Arabia in 1975 and in 1982 it was also the first company to produce glass-fibre reinforced con-

crete in the Gulf region. Artic also built one of the first modern plants in the Middle East for the automated production of concrete stairs. It can therefore be said that Artic has always been one of the pioneers when it comes to introducing many new products for the construction sector in Saudi Arabia.

Since 1995 the company has also been very successful in the production of interlocking pavers, which enjoy a very high demand. Artic has dozens of showrooms and a solid wholesale network that covers Saudi Arabia and other GCC countries.

## Artic's main objective: building trust

"We make every effort to create a mutually beneficial and transparent relationship with our customers. We ensure a professional environment with high efficiency, which helps to achieve the company's objectives"

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Bird's-eye view of  
the new produc-  
tion hall



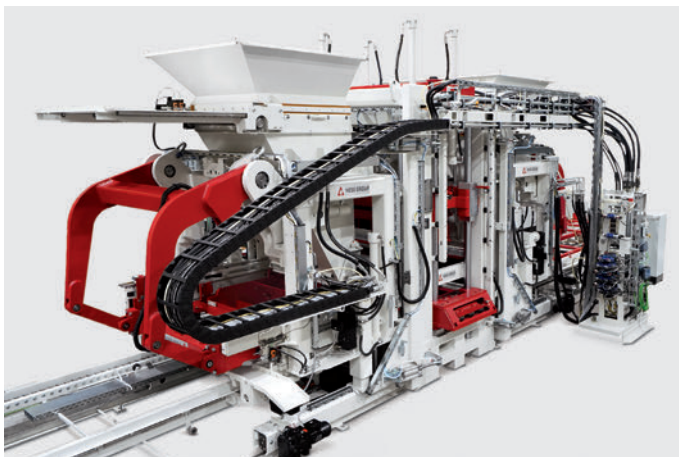
**Quality and always meets the quality standards**

Artic places great emphasis on quality and always meets the quality standards by only using high-quality raw materials.

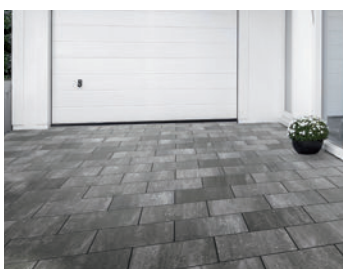
The company is certified according to ISO 9001:2015, 14001-2015 and 45001-2018 and is the only manufacturer in the Kingdom of Saudi Arabia to be a full member of GRCA International, The Glass-fibre Reinforced Concrete Association.



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**We put concrete into shape.**





Two planetary mixers were selected for the concrete production: the large SX3750 for the core concrete and the smaller SX750 for the facing concrete.

#### Safety comes first - without compromises

Arabian Tile Co. (ARTIC) regards health and safety as a key company value and is committed to creating totally safe working conditions. "Our commitment to safety and long-term health contributes to us being the first choice as an employer; our company only employs those who support our vision and are prepared to change. There are no compromises when it comes to safety".

#### Turnkey concrete block line from the Hess Group

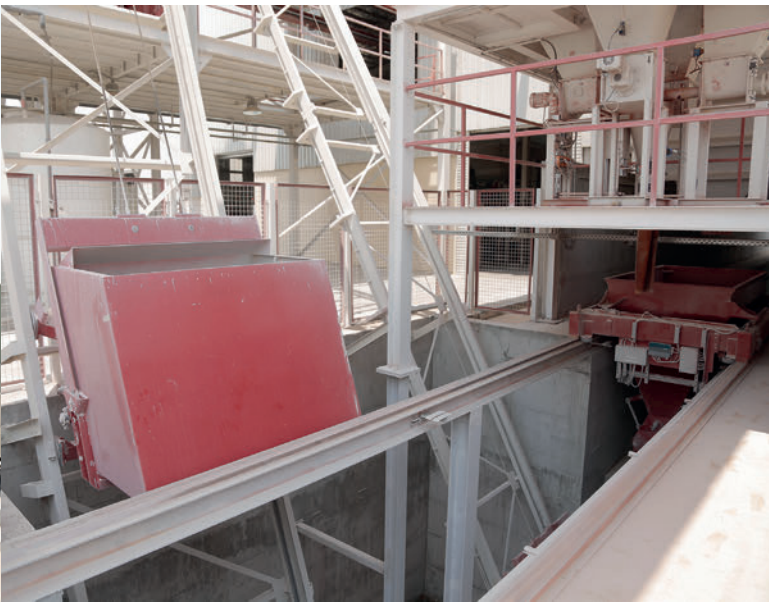
Artic's main argument for opting for the Hess Group again was the experience with the previous Hess machines and the excellent working relationship between both parties. The services provided by the Hess Group are not only limited to a good after-sales service, but also include regular inspection visits to the customer's relevant production facilities - with the aim of analysing and improving the efficiency of the machines. The service team in Dubai is made up of engineers

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*The aggregates are dosed directly from the eight silos arranged in a row. Bucket elevators are responsible for feeding the mixers.*

with many years of professional experience as responsible works/production managers at similar production sites in the region. This makes it possible to look and understand from the same point of view as the customer.

For Artic it is important to have a competent and reliable partner by its side, who can support it in its development work with all the necessary knowledge and technical solutions. Hess offers system solutions from a single source and knows the needs of the customers.

Consequently, the Hess Group has once again supplied the core components for the project, from the mixing plant through to the cubing system. The result is high-performance concrete block production, which is able to impress with both the output quantity and the high quality of the products.

#### Concrete Mixing Plant

For the respective concrete mix design, Artic can rely on aggregates from eight silos on the new line. The aggregates



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are dosed directly from the silos arranged in a row into the weighing bin, which moves up under the silos. This then transfers the aggregates to one of the two skip hoists lifting buckets, which feed the core and face mix mixer at the mixer level.

Two planetary mixers were selected for the concrete production: the large SX3750 for the core concrete and the smaller SX750 for the facing concrete. The Topwerk mixers, are particularly suitable for the manufacture of earth-moist concrete, as are needed e.g. for the production of paving stones, kerb stones, hollow blocks and slabs, but also for pipes, manholes and precast elements. The planetary mixers are characterised by their high level of mixing intensity and have been reliably used by many customers worldwide for many years. The mixing quality has a decisive influence on the quality of the products, the Topwerk mixers assure homogeneous mixes in the shortest possible mixing time.

The cement is dosed through a speed-controlled screw and slowly added to enable a good blend. Adding the cement directly to the mixing material also reduces the cement dust deposits in the upper area of the mixer trough. There is thus much less soiling during mixing and the cleaning time and costs are reduced.

### Multimat RH 1500-4 - developed for the high-performance market sector

At the heart of the new production line is the concrete block machine, the Multimat RH 1500-4. This has been developed as a particularly powerful machine for the high-performance market sector. Despite short cycle times the machine is characterised by a soft movement process. This is achieved through special control technology and hydraulics. The intel-

ligent interaction of these components thereby guarantees the reliable and very productive manufacturing of concrete elements. Production on the new line at Artic is done on 1,400 x 1,100 x 14 mm steel production boards.

The machine is also characterised by a solid steel machine frame, which ensures that the vibrating force is very well directed into the product. Thanks to the high precision of the control system, even at high speeds a very accurate motion is achieved, which is of critical importance for filling, compaction and the product quality. In addition, setting the parameters on the display panel is particularly simple and user-friendly.

Like all concrete block machines produced by the Hess Group, the new plant at Artic is also equipped with an operating console. The height and screen angle can be adjusted fully in line with the operator's needs. A clearly designed touch panel enables all the concrete block machine's functions to be fully monitored. The operating concept thus allows even inexperienced personnel to quickly become familiar with the control system. Furthermore, the automatic change of mould can be directly monitored at the machine using a mobile panel, which makes the mould change even faster.

### Fully automatic handling system and curing chamber

The freshly made concrete products are transported on the steel production boards via a V-belt conveyor to the elevator. In subsequent upgrades, an ejection station and a double washing plant are expected to be added on the wet side.

The elevator with 20 levels and a max. load capacity of 14 t collects the production boards and, depending on the product height, deposits one at every level or only every second



At the heart of the new production line is the Multimat RH 1500-4 concrete block machine.

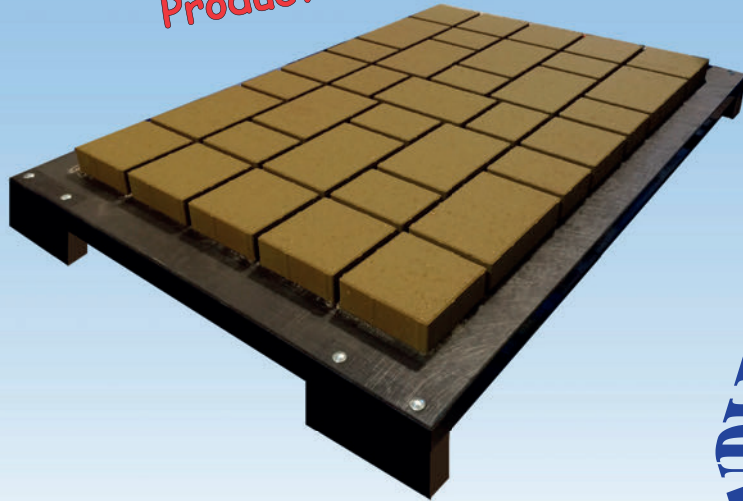


The double bucket conveyor transfers the core and facing concrete into the concrete block machine's corresponding storage silos.



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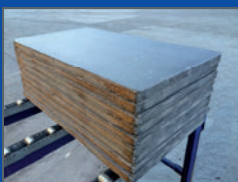
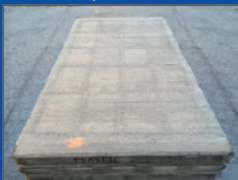
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Production is done on 1,400 x 1,100 x 14 mm steel production boards.



Like all concrete block machines produced by the Hess Group, the new unit at Artic is also equipped with an operating console.

level. The finger car then takes the production boards out of the elevator and puts these into the curing rack with 12 chambers and a changeover chamber. Altogether, the curing rack with 18 positions per chamber has room for 4,680 production boards.

The cured products are then taken back out of the rack by the finger car and transferred to the lowerator.

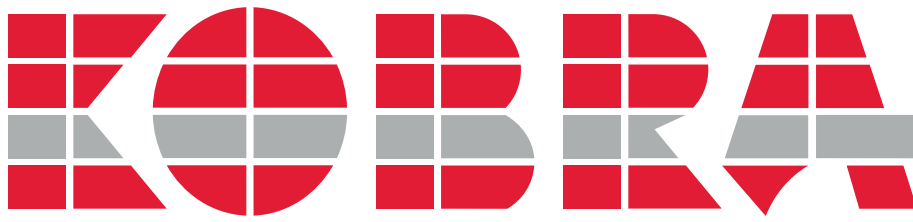
### Servo 700 cuber

Using the lowerator, the production boards with the cured products are separated onto the latch conveyor on the dry side and conveyed to the Hess Servo 700 cuber. The movements of the cuber, which is equipped with a hydraulic clamp, are fully electrically servo driven. The fast cycle times of the cuber when stacking the products, keeps up with the fast cycle times of the concrete block machine.



Servo 700 cubing system





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The packets of blocks are formed on the 28-m long slat conveyor arranged in parallel and then transported outdoors in cycles.

The bundles of blocks are stacked on the 28-m long slat conveyor, the length of the slat conveyor allows enough time for the forklifts to handle the ready products in the storage area, without affecting the production efficiency.

The empty steel production boards on the latch conveyor, are conveyed in cycles further along the latch conveyor and are cleaned as they pass through the subsequent board scraper and brush, thereby preparing them to be used again, after it is turned over by the turning device at the cross conveyor.

The special production board buffering system for very high plant efficiency is a remarkable added value in the plant, if the dry side releases more steel production boards than are needed on the wet side, a magnetic stacking device arranged in front of the board silo takes the production boards from the cross conveyor.

**New markets with even higher performance**

Artic is the region's leading company in the floor covering systems sector (paving stones and slabs). The new production line, which has been installed in Dammam, thus stands for Artic's expansion in the eastern region of the country.



Cross conveyor with board turnover device and board buffer conveyor; in the background the magnetic stacking device

## CONCRETE PRODUCTS & CAST STONE

The eastern region offers good sales opportunities, especially as the production capacities are lower compared to the region in and around Riyadh and the western provinces like Jeddah or Makkah. The region also provides the opportunity to export to the neighbouring countries like Qatar and Bahrain, which at a distance of approx. 200 km each lie within the delivery range.

It remains to be seen what the concrete block experts from Saudi Arabia will plan next, as standing still does not appear to be in the management's vocabulary. ■



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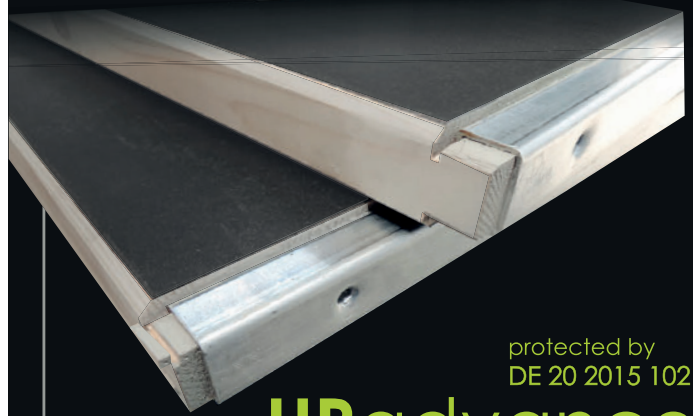


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