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Granules and dispenser as a smart solution for concrete block production facilities

There is no doubt that the demand is greater than ever for granules serving as protection against surface damage. The space created by granules between layers gives concrete products the possibility of releasing moisture into the atmosphere. This prevents efflorescence and stain formation on the blocks and reduces the time-consuming processing of complaints. While some producers rely on the plastic granules available on the market, other production facilities utilise biodegradable granules.

Some system manufacturers - due to this strong increase in demand for granules - are dealing with the issue of how to get the granules onto products in a circulation system, in the best case by fully automated means. Semi-automatic systems up to fully automated granule dispensers are already available. Customer requirements ultimately decide on the system design. The concept is basically simple. Take a conical container with a corresponding dosing function, place it above the conveyor belt and apply the desired amount of granules. It sounds so simple, and yet customers all over the world have raised many different questions about it. For example, there is often a lack of clarity about what quantity of which product is needed.

In most cases, larger products require less granules, as sufficient space is available due to relevant support areas so that the distances between the granules can be enlarged. More granules, on the other hand, often have to be scattered on smaller products because there is less surface area available. Here, too, the exception proves the rule and individual cases have to be examined. Concrete block manufacturers stack and transport their products in many different ways. It must therefore be ensured that the bottom layer of granules can also withstand the loading from the entire stack. In addition, the stack must not be subjected to too much movement during transport; consideration must also be given to differing storage times. Once all these criteria have been thought through and the required quantity has been determined, a granule dispenser must also be able to guarantee appropri-



Only a small selection of the granules available. Lentil shape or flakes from recycled plastics



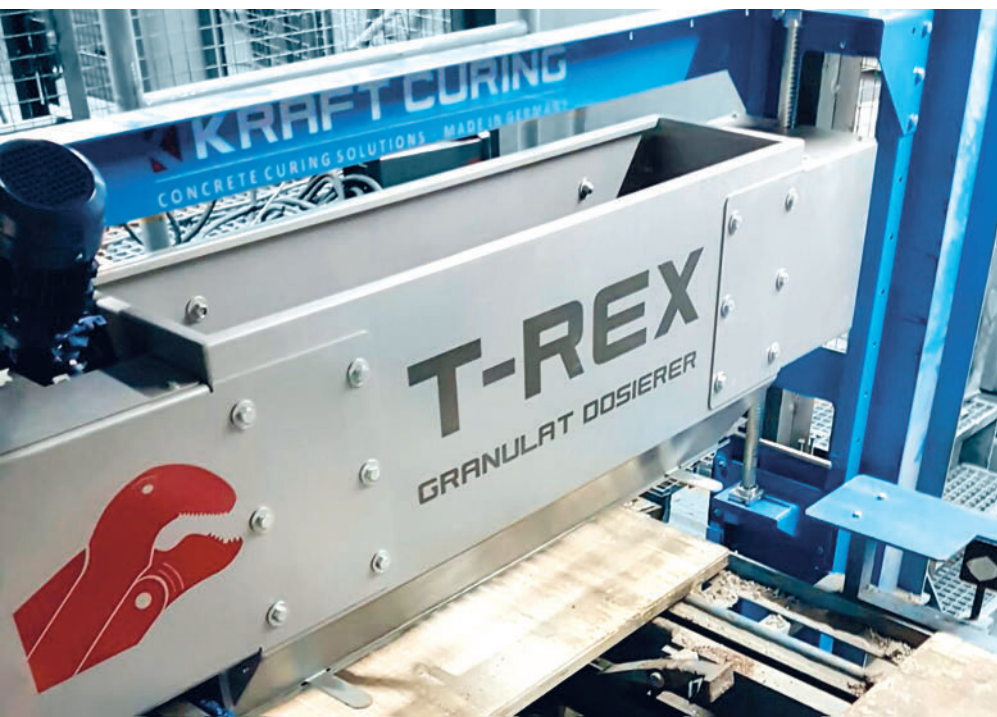
Light barriers detect the products and start the dosing process

ate settings and wishes. This is where manufacturers and developers of such systems are challenged.

One system that allows customers to make a number of settings is T-Rex Granule Dispenser made by Kraft Curing Systems GmbH with its headquarters in Lindern. Michael Kraft and Sascha Kansy, the owners of the company, grasped quite early on that systems in this form would be needed more often in the future. Their system was already introduced at bauma 2016 and has enjoyed increasing popularity ever since. The company has taken customer wishes into account and has fully understood the requirements that such a system has to meet. Larger groups in Germany already use the T-Rex from Kraft Curing Systems GmbH and are very satisfied with it. This system can apply almost all granules available on the market to products. Application quantities can be adjusted on demand and distribution is very uniform on conveyor belt widths of up to 1,800 mm. The system has light barriers that detect incoming products and trigger the dosing process accordingly. Further light barriers stop the system in the event of an imminent collision with larger objects, thus preventing longer standstills on the dry side.

Guidelines and safety regulations in the concrete block factories of today often stipulate that production areas should only be entered if this is really necessary. Access to such areas is usually linked to circulation stoppage, which can give rise to considerable costs in case of prolonged downtimes. Here, too, the T-Rex from Kraft Curing is of great assistance, because the system is integrated into the conveyor's safety chain and controlled by a Siemens S7 control unit, which can be set up and operated outside the safety area. From this position, its height and spreading width can be controlled automatically. An additional granule hopper including suction cup can ensure that the system is filled safely, even if the hopper already holds approx. 150 kg of material.

It is also very interesting to see how the market is currently developing with regard to organic granules. Particularly those factories that would indeed want to run only on such materials sometimes find it difficult to obtain the annual material



Large container with approx. 150 kg capacity in the customer's colour of choice



- Semi or fully automatic manufacturing systems for both dry cast and wet cast concrete products
- Dry cast & wet cast moulds for the precast industry



New Kraft Curing Systems GmbH production hall and office building

requirements they need. Much of it continues to be utilised in the packing industry, and thus for consumer goods in private households, and is difficult for the concrete industry to attain due to the prices demanded. Whether and how this will change in the next few years is something no one can really say at the moment. Recycled plastics are a possibility as an interim solution for such products. These are already available in a wide range of varieties and shapes. Some manufacturers in Germany are also employing gravel, among other things, which exhibits great load-bearing properties due to its higher density, but can cause difficulties when transporting the pallets.

The granule dispenser made by Kraft Curing has already been successfully tested with many common materials and the feedback from customers to the manufacturer has been gratefully received every time. Where necessary, adjustments were made and the system slightly adapted. Without question, the system masters the task required of it – the distribution of granulates – with great success. Whether a type of granules is suitable for a customer’s production line is something that each production facility has to find out for itself with appropriate tests. The T-Rex, however, already provides very advanced technical support to customers, and the experience of Kraft Curing Systems GmbH with these matters is also a great help in getting started.

The company was founded in 1975 in Texas, USA. In 1992, the owners decided to relocate production and the majority of sales to Germany. Some structural changes over the years required the company owners to remain constantly flexible; this still has a very positive effect on product development today.

New ideas from employees and trends in general always find open ears with the management. The company sees itself as constantly changing and the passion for new technologies is unbroken. American vision paired with German precision generates innovations. Since that time, the company has been manufacturing in Lindern, Germany, and opened a new production hall with a modern office building there on 15th November 2019. ■



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FURTHER INFORMATION



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