

METEN EN WEGEN

Yves De Groot

*In the factory plant of soap producer Christeys***each raw materials silo has its own complete weighing system for dosing.**

For the production of industrial washing powders Christeys weighs different raw material types separately in its factory in Gent, Belgium. "The production process is as fast, flexible and efficient as possible," says Technical Director Johan Hofman. Ultimately the aim is to strive for a continuous production process. Each of the 18 weighing systems, supplied by PENKO Engineering B.V., is individually equipped with a controller guaranteeing optimal dosing accuracy and product quality.

Since its foundation in 1946, chemical company Christeys developed into an international player in wash detergents and hygienic products. The core business includes industrial textile

cleaning but also professional, food and medical hygiene products for markets in Europe and North America and expansion into growth markets such as Brazil and the Middle East.

For Belgium and the Netherlands, the enterprise is considered market leader in the industrial laundry sector.

According to

Technical Director Johan Hofman, a number of mergers and acquisitions, at home and abroad, including the industrial laundry activities of Johnson Diversely, contributed to the success of the company. "Turnover increased by 17% per annum on average. In 2013 the family owned business counted eight production facilities in the home market with over 700 employees and a total of 230 million Euros." Headquarters are situated in the harbour area of Gent, in Belgium, close to the city centre, allowing for a great view of the city from the building roof-top.

Not only is the largest production facility located at this premises which is currently expanded by xxxm2 of warehouse, it also contains the production of washing detergents for the entire group. The factory output counts a total of 62 thousand tons of product, of which 20 thousand tons are washing powder, 16 thousand tons of liquid ingredients/detergents, 11 thousand tons of per acetic acid and 15 thousand tons of oleo chemical products. The total number of employees is currently at 120 and this includes headquarters and R&D employees.

'Our aim is an almost continuous production process'

**Washing-powder Production**

"Density and flow-ability of materials is very important in our manufacturing processes," says the Technical Director. Generally households easily use 40 grams of washing powder for a few kilograms of washing, whereas our customers only need 4 grams of powder for a few kilograms of washing. The entire recipe controlled production is extremely flexible and runs in relatively small batches. About seventy different raw materials, used for this process, are stored in silos, big bags or for smaller quantities in smaller sacks. The company aspires to have a rapid turn-around time keeping stock levels at a minimum. This requires a highly reliable automated process installation. Where necessary, the installation is upgraded and the number of silo's and dosing systems is continuously expanded. The last upgrade was done 2012 - 2013. "We have 150 recipes. Combine this with the different types of packages and the variety in volumes, the product range holds more than 500 articles in fluid alone," says the Technical Director, who goes on to explain the solids production process

Separate controllers instead of one PLC control for all weighing systems improves weighing accuracy

During the solids processing raw materials are dumped from silos or big-bags via holding bunkers, each with its own weighing/dosing system, onto a central conveyor belt. Some of the smaller quantities of raw materials, for example those from smaller sacks, are discharged into an installation designed for this. Subsequently a bucket elevator dumps the raw material into one of the two holding silos, each of which is connected to a huge mixing drum installation. Both mixing installations are connected to two storage silos which in turn are connected to a packaging line allowing two batches to be packed at the same time. Johan Hofman explains, "Our goal is to achieve a practically non-stop production process in which various installations can be in different stages of the production process. For this, production automation is a fundamental requirement. So for example, while the mixer is still active with packaging a batch, a new batch can be prepared in the holding silo. Ideally, whilst one batch is being packed, another is mixed and a third

batch is transported to the holding silo - all happening at the same time. In this way we can manage various recipes simultaneously during the production process." He emphasizes the advantage of having separate weighing systems for this type of production process since the amounts of different raw materials used varies per batch. For the holding bunkers, which are much smaller in comparison to the big silos, it is important to attain the highest possible weight accuracy, especially for components used in relatively small quantities. "This is particularly important because of the high concentrated products we make," explains Hofman and goes on to pointing out that these are expensive components such as optical whiteners which are added to certain washing powders.

Controller

The production process currently includes a total number of 18 PENKO controllers, each with its own load cell.

weighing accuracy and thus ensure consistent quality standards of the end products. The controller reaction time is 0,6 milliseconds or, a factor of 8-50 higher accuracy compared to any PLC-controller. Operating the weighing systems, of which the batch- and sequence control system plays an important part, is done by the latest user-friendly supervisory BCS management information software from PENKO Engineering B.V.

Serviceleverancier

Christeys heeft zich de afgelopen jaren steeds verder ontwikkeld tot een leverancier van een compleet pakket producten en diensten. Dit gaat van productdoseer-apparatuur tot bijvoorbeeld waterbeheer- en energie-beheersystemen voor een duurzame productie bij haar klanten. "Het waterverbruik bij industriële wasserijen bedraagt tot 2 liter per kilo linnen, terwijl dit in de thuismarkt al gauw tien keer zo veel is", geeft Johan Hofman als voorbeeld. Om de kennis van de interne diensten en de klanten op een hoog peil te houden, is de Christeys Academy opgericht. Deze moet zorg dragen voor optimale resultaten en een hogere efficiëntie en om een longterm partnership te bewerkstelligen.

In the production control room each weigher has its own intuitive touch screen operator panel of type FLEX. For non-dosing processes the systems are connected to a Siemens PCS7 product automation system. Once the operator has selected a recipe, the production process is started by a press of a button. At any

'Densiteit en 'lowability' of our products are very important

given time the system shows which production batch is in process, which product is in which holding bunker and which possible routing is available.

By the end of 2015 Johan Hofman hopes to connect the production controller to a Microsoft Navision ERP-system. "Christeys wants more control over its production and logistics processes. Recipes will be uploaded from the ERP-system to the PENKO controller and once the process is completed, this will be relayed back to the ERP system. This requirement will be discussed with PENKO and the ERP-software supplier."