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## Trans-Canal Algeria relies on efficient concrete pipe manufacture with a high degree of automation

The Trans-Canal Centre concrete plant located in Algiers in North Africa relies on an efficient, flexible and primarily economic method of production by making extensive investment in its machinery. Having made the decision to acquire two automated concrete pipe production machines of the Exact XL and Precise types from Austrian systems manufacturer Schlüsselbauer Technology, the company is now in possession of efficient and flexible production systems, which can easily meet future requirements. For Trans-Canal, the main reasons for the expansion of its systems were due to an increased quality requirement on the one hand and the strategic objective of establishing itself as a market leader in the field of concrete pipe manufacturers and producers of finished parts in Algeria on the other hand. The company formed the holding company Groupe Hydro Canal, together with both sister companies Trans-Canal Est and Trans-Canal Ouest, and this holding company is able to serve the vast domestic market in Algeria with high-quality concrete products.

■ Ralph Mitterbauer, Schlüsselbauer Technology GmbH & Co KG, Austria ■

Since this spring, concrete and reinforced concrete pipes have been produced in the Algerian capital of Algiers for use in sewer systems with modern technology of Schlüsselbauer.

The decision regarding which of the two new production systems to use is primarily made on the basis of the inner diameter required. The nominal width spectrum of the concrete pipes produced by Trans-Canal Centre currently ranges from DN300 to DN2000 and can be expanded further in the future, if required. The pipes each measure 2.5 m in length and are all produced with integrated seals.

### Manufacturing technology for immediate demoulding by Schlüsselbauer Technology

Within the scope of delivery of the manufacturing technology acquired from Schlüsselbauer Technology for immediate demoulding of high-quality concrete pipes, a range of automation components and handling equipment were included, alongside both production machines of the Exact XL and Precise type. This included, for example, tilting tables, overhead product grippers, electronic removal carts for careful removal of concrete pipes and two sophisticated testing devices for checking of watertightness and load capability, both also from the production line of Schlüsselbauer Technology. Trans-Canal therefore

now has a complete test system, which primarily serves factory-led quality controls and thus guarantees a corresponding high standard of the pipes in the long-term. In the event of technical queries regarding production flow, internet-based remote maintenance is offered by the Schlüsselbauer Service Team to employees of Trans-Canal and with its help, any necessary maintenance measures can generally be resolved quickly and without complications. For further automation, a reinforcement cage welding machine has also been newly acquired from the product range of the manufacturer Progress Maschinen & Automation AG, in addition to the machines and pipe manufacturing technology.

### Ambitious investment in successful pipe manufacturing technology

Trans-Canal Centre took the decision in favour of the technology produced by the Austrian system construction company Schlüsselbauer Technology based on a detailed profitability analysis, taking into consideration the production capacity predicted, the investment sum and the current production and maintenance costs. The clearly positive result of the analysis and, in particular, the high product quality of the pipes that can be produced with both of these types of systems, which have been successfully used throughout the world for many years, represented a solid basis of decision-making for those responsible at Trans-Canal. As a result, in the winter months of 2015/16 both a Precise and an Exact XL concrete pipe production system were installed by Schlüsselbauer at the main site in Algiers. The acquisition of both modern production systems contributes considerably to achieving a significant improvement in products and processes at Trans-Canal.



Exact XL automatic pipe production system in the concrete factory of Trans-Canal Centre in Algiers.

## CONCRETE PIPES AND MANHOLES



*Production of a DN800 bell sleeve concrete pipe using the Precise system supplied by Schlüsselbauer Technology.*



*Feed pipe of a prepared steel mould on the Exact XL production system.*

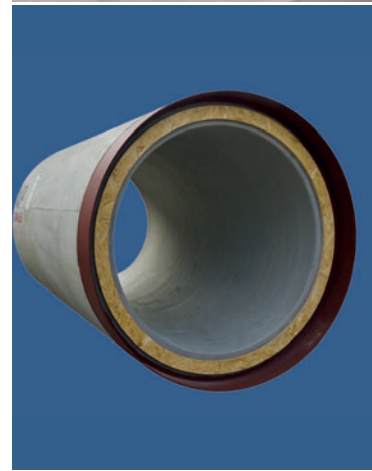
Bell sleeve pipes in nominal widths of DN300 to DN1200 are manufactured on the Precise system in single production using the vibration press process, whilst the Exact XL machine is primarily used to produce pipes with larger internal diameters, from DN1400 to DN2000.

The Precise machine design developed by Schlüsselbauer enables manufacture beyond the current production range of pre-cast concrete components, up to an external diameter of 1800 mm, meaning that the new system technology can be used even if new products are incorporated into the manufacturing programme.

The products are transported by an electric removal cart from the manufacturing area to the curing area. The carts have a platform that enables an ergonomic lifting and setting down of the products, in particular to protect the spigot ends of the pipes during transport in the early curing phase. The production machine is equipped with a mould quick-change-system. This means that if a change of size is required during a working shift, the personnel are able to carry this out quickly and easily.



*The pipe that has been freshly cast is brought to the setting area using an indoor crane.*



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The concrete pipes produced on the Exact XL and Precise machines are tested for watertightness and load capability.



The freshly demoulded pipes usually remain in the curing area of Trans-Canal Centre for one working day.

The Exact XL system makes it possible to produce concrete pipes with the lowest possible conversion work. What is more, the use of upper sleeves guarantees a very high product quality right down to the spigot end of all product types and accurate joints, whilst maintaining very low tolerances. The maximum product length for this type of system is 3,600 mm. In the case of the Trans-Canal Centre, concrete pipes measuring up to 2,500 mm in length with a maximum nominal width of 2,000 mm are produced. Pipes with an internal diameter of up to 3,600 mm can be produced, if required. As well as other products like manholes, risers, culverts, etc.

At Trans-Canal, only two to three employees are required to operate each production system, including operation of the cage welding machine, setting up the moulds, controlling the test stations and removing the products.

In Algeria, where strong emphasis is placed on the energy sector due to the fact that the country is rich in crude oil and natural gas, investments in the infrastructure sector are a high priority. With the modernisation of its concrete pipe manufacture, Trans-Canal Centre also conforms to the ambitious objectives of the Algerian government, which places great emphasis on improvements in the pipe sector. The permanently leak-tight and efficient wastewater systems are an important component of a number of necessary infrastructure measures for the aspiring country with an average economic growth of over 3% in recent years.

In connection with this, valuable investments in progressive pipe production systems are contributing to long-lasting sewer systems on the one hand, and to safeguarding the added value associated with concrete pipework domestically on the other.

### Hydro Canal Algeria – Group of companies steeped in tradition

The Hydro Canal Algeria group is the result of a number of restructuring measures, the roots of which stem back to the company SNMC that was founded in 1967. Following two subsequent changes to the company's name, the existing Groupe Hydro Canal, a corporation which has its headquarters in Algiers, came into being in 1991. Three daughter companies were founded in 1997 in the form of Trans-Canal Centre, Trans-Canal Est and Trans-Canal Ouest, primarily for geostrategic reasons, in order to better be able to respond to the regional requirements of the vast country with a surface area of almost 2.4 million km<sup>2</sup> and more than 38 million inhabitants.

Mr. Mohamed Ben Dahgane, President and General Director of Trans-Canal Centre, as well as Mr. Belhouari, President and General Director of Hydro Canal Algeria, appear to be extremely satisfied with both of the new production systems: "With the decision to acquire modern pipe production machines from Schlüsselbauer Technology, we took an important step on our way to achieving a dominant position on the concrete pipe market in Algeria and in the economic area of North Africa. In

addition to the high flexibility of the workflow, we were particularly impressed by the outstanding quality of the components of the pipes produced using Exact XL and Precise machines".

#### FURTHER INFORMATION



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