Schlüsselbauer Technology GmbH & Co KG, 4673 Gaspoltshofen, Austria

Market Entrance for Heavy Duty Concrete Manhole Components in Italy

All over Europe the Perfect production plant designed by the company Schlüsselbauer Technology GmbH & Co. KG has been introduced for the production of manhole components. Quite often self compacting concrete of differing classes of quality is used for this process. At the company Buzzella Ennio SRL in Italy hith quality concrete, class C60/75 has further been introduced to the Perfect production plant which first went into production in 2008 thus satisfying the ever increasing demand for top class manhole components in the region. The family run business has now been able to gain itself a competitive advantage and raise added value within a generally difficult market situation.

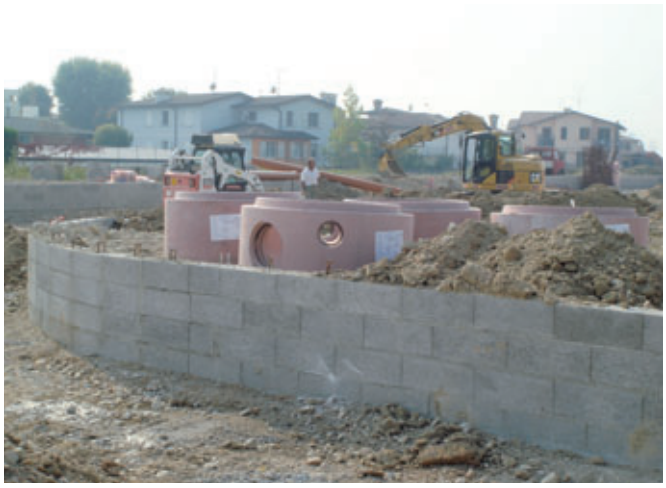
Buzzella Ennio SRL began producing concrete components back in 1962. Right from the beginning the range of products consisted of pipes and manhole components. In 1970 the company relocated to its present location. Nowadays production concentrates mainly on the production of manhole components. Marketing is concentrated to Northern Italy where round manhole bases are beginning to replace the conventional square shaped manholes.

Stefano Buzzella, the general manager, already started producing round manhole bases with a plastic coating in 1999. However, the advantage of the high surface quality compared with the conventionally available concrete products was outweighed by the disadvantage of the high costs involved in the use of the plastic coating thus causing the company Buzzella to look for alternative production possibilities. Buzzella has never regretted its decision to opt for the Perfect production system. It was even possible to start producing C40/50 concrete manhole bases with extremely a high quality and an almost air pocket -free surface within a short start-up time. To better meet the demand for high quality manhole components the company has decided to produce components of an even higher quality. The general manager of Buzzella is convinced that due to this addition to their programme of products the use of round manhole bases will increase in the future even though customers from the public sector quite often still require rectangular bases produced by conventional methods. Specially qualified employees who provide information to architects and public organisations are forcing the market entrance of the Perfect manhole bases.

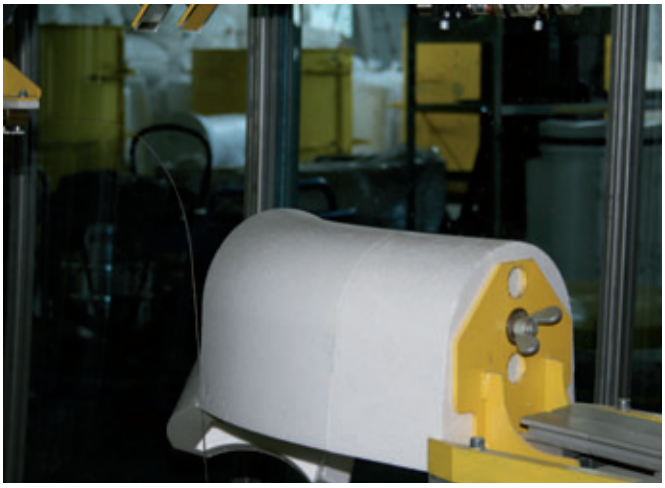
This investment has already proven to be successful even after such a short period of time. According to Stefano Buzzella the advantage of the round, monolithic concrete manhole bases combined with the incorporated production method is creating much interest amongst responsible civil engineers. Together with many positive experiences gained from existing projects he has come to the conclusion that the strategic decision to diversify the product range and introduce a completely new product to the market was definitely the right decision to take. Clarification and persuasion work are the number one priority within the company.

Strategic position of points for the production and distribution

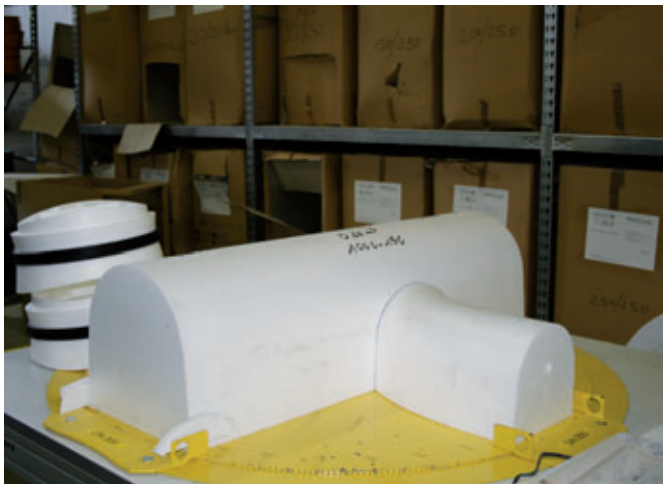
Creating a market for a new, trend-setting product turned out to be a strategic challenge for the company Buzzella. Particularly the technical aspect by means of Schlüsselbauer's new production technique using self compacting concrete – a new material was a challenge for them. After an intensive planning phase together with the technology partner Schlüsselbauer a decision was made to install a semi automatic production system with 16 steel moulds. The production plant was integrated into an already present building and furthermore the production cycle using the already existing concrete had to be adjusted accordingly. The only process within this system which is similar to other European producers is the first step of production which involves the production of the negative channel moulds. By use of the corresponding software the specified parameters for



Application of high quality concrete manhole bases produced by the company Buzzella Ennio SRL



The „three dimensional cut" of an EPS mould.



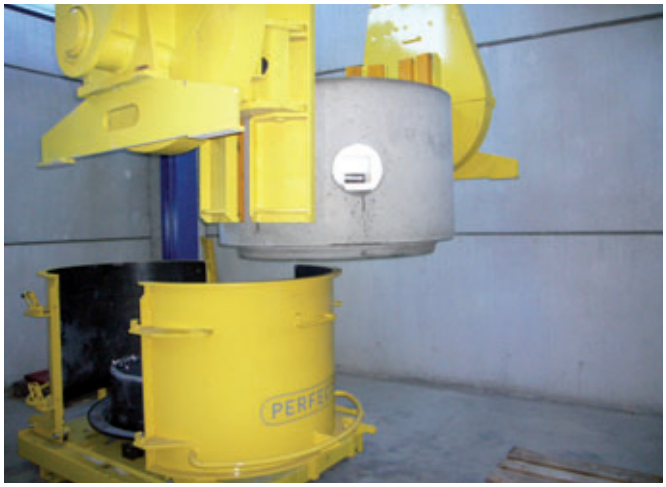
The construction of a negative mould piece – In the photo an inlet DN 200 in a main channel DN 300.

The filling of a mould with self compacting concrete C40/50.

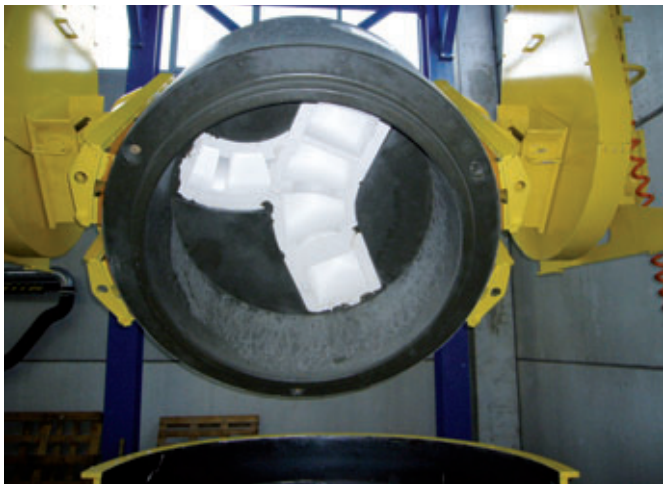
each individual manhole base such as style, amount height, inclination and angles of the inlets are decided on, confirmed by the customer and sent to the production control system. The construction data is sent to the various hot wire cutters which then cut out the individual segments. The segments are made of polystyrene hard foam and form the negative channels. Three dimensional cutters are able to cut out perfectly the individual inlet pieces and thereafter they are joined together using hot glue. During a further cut the inclination of the berm and channels are defined. Finally the corresponding connections for all styles of pipes are cut out. Depending on the type of pipe to be connected, integrated gaskets are also applied. These are cast into the mould thus ensuring a tight connection with the elements. Due to this method loss or damage of the gaskets during transport or storage is eliminated. The operator is supported at all stations by the production software. Via displays it is possible for the operator to view all cutting parameters and a construction drawing of the actual channel being produced so that he can optically control the correct order and design of the individual cuts. The connection of all the individual mould pieces is carried out on a round, working surface with gon allocation thus ensuring the simple and correct connection of all channel configurations.

Optimized use of Resources

A single employee from the company Buzzella requires half a day for the preparation of the complete negative channel pieces for the 16



De-moulding of the cured monolithic manhole base.

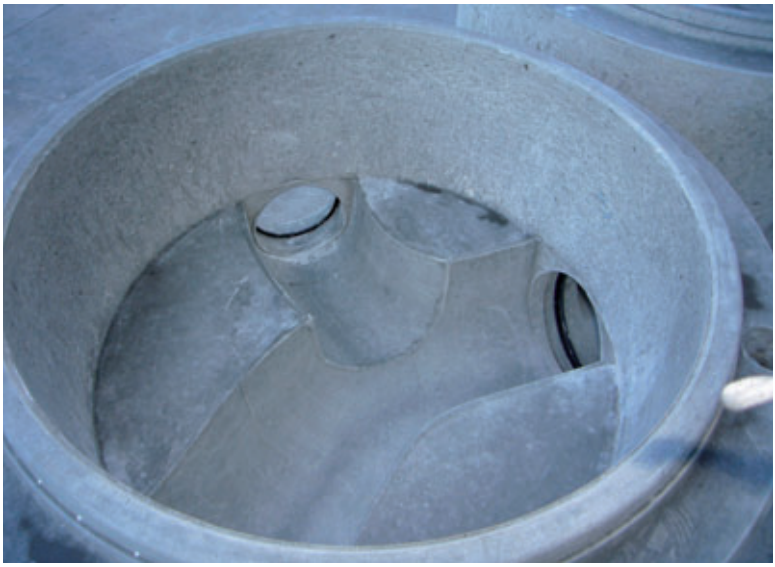


Turning of the product into the final mounting position.

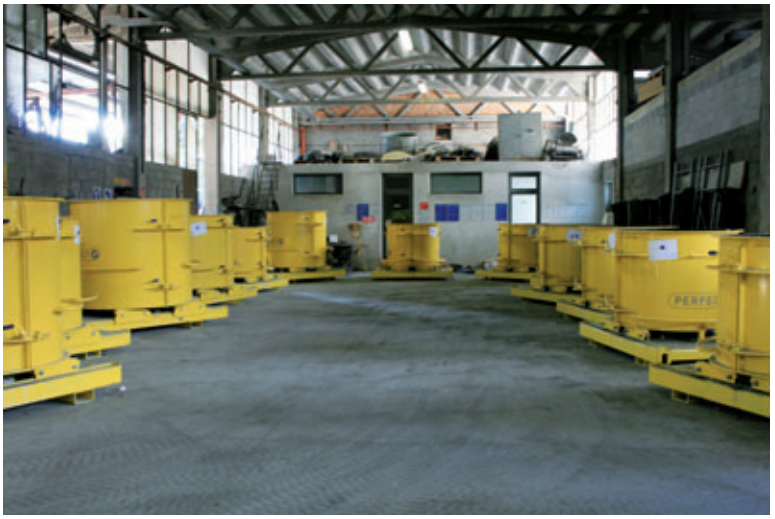
steel moulds. This means that on top of this time another 15 to 20 minutes are required for the preparation of one concrete manhole base. A further employee is required to prepare the mould ready for filling. After the manhole bases that were produced one day earlier have been de-moulded the steel moulds are then cleaned. Lifting anchors are mounted onto the base of the mould for safe handling later on. The two moulds are opened by pulling them apart and the negative channel pieces are then placed on a steel core within these two moulds. Finally the steel moulds are pushed back together again and locked. Now the mould is ready to be filled with concrete of the desired quality.

The steel moulds and concrete containers are manipulated and moved by use of a forklift. The moulds are fitted with receptacles for easy transportation through the production building for the extraction or turning of the cured manhole bases. Concrete is filled in a stationary position and a forklift delivers the liquid concrete to the moulds by means of a container specially designed by Schlüsselbauer. Vibrating is not necessary during the production process due to the use of self compacting concrete. From now on high quality C60/75 concrete will be used together with the already previously used C40/50 concrete. The ideal mixture is being developed between corresponding suppliers and a local university.

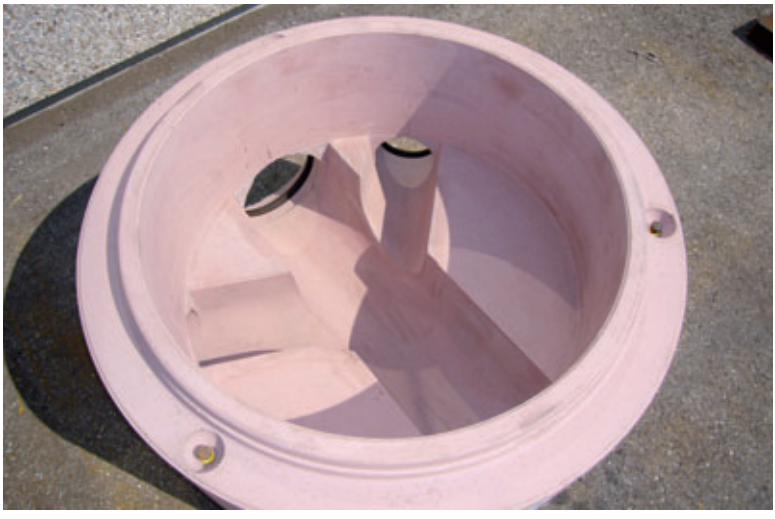
The concrete elements cure overnight in the mould and thereafter are finally taken via forklift to a turning station. This station has been spe-



Hydraulically and ideally formed channels. Use of integrated gasket for simple and safe pipe connections.



View of the production building at Buzzella Ennio SRL: Perfect moulds for the production of manhole bases DN 1000 and DN 1200.



Ideal channel moulding in combination with extremely durable Perfect manhole bases made of heavy duty concrete C60/75.

cially designed to correspond with Buzzella's product spectrum and can turn products up to an inner diameter of 1.200 mm, height 1.400 mm and a product weight of maximum 5 tons. After turning the products to the final mounting position the negative channel pieces are then removed. The left over material is then shredded in a shredding machine and the recycled material is then sent to another company and re-used for the production of lightweight concrete. Due to the recycling of left over material the manhole production process is almost waste material free.

Facet

Within a very short period of time the products at Buzzella have been changed and this has created a stronger market position for the company. Due to the technology being used it is now possible to produce high quality manhole bases which both quality and price-wise can easily compete with existing products containing a plastic coating. The quality of the monolithic manhole bases is shown through the excellent surface quality which is practically free of air pockets and in the extreme durability of the whole product arising from the packing density of the self compacting concrete. Compared to previously existing North Italian products a considerably better quality product for use in new manhole installations or sanitations of existing manholes can now be offered.

FURTHER INFORMATION

Buzzella Ennio & S.r.L.
Via Nazionale Nord, 28
23823 Colico (LC), Italy
T +39 03 41 94 06 00
F +39 03 41 93 01 48
info@buzzella.it · www.buzzella.it

SCHLÜSSELBAUER

Schlüsselbauer Technology GmbH & Co KG
Hörbach 4
4673 Gaspoltshofen, Austria
T +43 7735 71440
F +43 7735 714455
sbm@sbm.at · www.sbm.at · www.perfectsystem.eu