

Sewage renewal in Hessen:

Perfect Pipe convinces with consistent corrosion protection at DN 1000

The future belongs to high quality and durable sewer systems. As well as new infrastructure projects, this is certainly true of renovation work on existing installations. We have a situation where customers, contractors, and not least the manufacturers of the products used, are all interested in future-proof approaches to sewage disposal.

As part of a large-scale road reconstruction project in the Hessian municipality of Niestetal near Kassel, the building authority responsible decided to replace an existing mixed water channel in the district of Sandershausen with a completely new installation. Those responsible were clear from the start that a new sewer pipe, apart from the increased capacity required, would mainly have to satisfy criteria relating to high load capacity, longevity and increased corrosion resistance to ensure a future-proof solution. As such, a composite pipe made of concrete and synthetic was stipulated as early as the tendering process for the project. And it was the construction company Bauer GmbH from Leinefelde-Worbis which was successful, with a bid featuring a consistent lined pipe system produced by the established manufacturer Tamara Grafe Beton based on the Perfect Pipe technology developed by Schlüsselbauer Technology.

Perfect Pipe - durable, tight and effective sewage system

Several reasons convinced the customer to choose Perfect Pipe. There were the many benefits associated with these pipes – made from flowing concrete with end-to-end

HDPE linings – including their robustness and resistance to corrosion. Other reasons behind the decision were ease of installation, to keep pace with the construction process, and the leak-tightness of the system for the Perfect Pipe version. The technical officer responsible at the building authority for the municipality of Niestetal is very happy with how the project has gone so far: 'We made the right decision when we chose the Perfect Pipe system from Grafe Beton for the urgent sewer replacement work at Sandershausen. Apart from quality criteria such as longevity, corrosion resistance and high static load capacity, it is particularly important for us that installation work is dealt with quickly and smoothly. And the construction company Bauer has managed this to our complete satisfaction – just like the local residents wanted.'

Installation in open trench construction

This February, the installation of Perfect Pipe reinforced concrete pipes with consistent HDPE-liner in dimensions of DN 1000 and DN 800 started in Sandershausen. The entire section has a length of 300 m and is done in open trench construction. Alongside the pipes with a standard length of 3 m each some short distance pipes, also with



Figure 1: Reinforced concrete Perfect Pipe DN 1000 with pre-integrated connector right before installation at the building site in Sandershausen, municipality of Niestetal



Figure 2: The internal Perfect Liner made from high-density HDPE is characterised by its long-term resistance against chemical attacks.



Figure 3: Inserting of a pipe in the trench by using a chain sling fixed on two anchors

HDPE-liner, are used during the construction as well as six Perfect manhole bases all produced by Tamara Grafe Beton. The new sewage channel is distinguished by its higher water capacity and mainly because of its increased corrosion resistance alongside with enhanced static load capacity at the same time. Whilst the removal of the old pipes in need of renovation has been rather difficult because of material damages and rocky soil conditions, all persons involved are enthusiastic about the rapid installation of the new Perfect Pipe system. Furthermore, the workers at the building site are impressed by the overall quality as well as from the well thought out and easy handling of the pipes. Particularly during joining the pipes via the so called Perfect Connectors, integrated plug-in connectors made from resistant EPDM with double tilting edge gaskets that are characteristic for Perfect Pipe, the whole system shows its strengths. The pre-mounted connectors on the bell-shaped pipe ends lead to a significant relief when fixing the tight pipe connection. Once two pipes are joined together via the Perfect Connector, the consistent corrosion-protection of the whole sewer section is guaranteed.

The installation of the reinforced pipes lined with HDPE is done in a tried and tested method. First, each Perfect Pipe is lifted up at the pre-integrated anchors by using a chain sling fixed at the excavator and is put down safely in the trench with a maximum depth of 3.5 m. Immediately thereafter, the pipe is carefully pushed towards the existing channel with the help of sliders and is finally fixed, after short application of a lubricant, via the integrated Perfect Connector. The responsible site manager of the company Bauer, Markus Steinhäuser, points out: „The outstanding component quality combined with the unique ease of assembly of Perfect Pipe guarantees a smooth installation. Not least because of the excellent cooperation with Tamara Grafe Beton, that delivers the pipes on time directly to our building site, we are very happy about the fast construction progress.“



Figure 4: Connection of a reinforced Perfect Pipe DN1000 to the already installed new sewer section

Tamara Grafe Beton - experience and tradition

The company Tamara Grafe Beton has been family-owned since its foundation in 1903. Today, Grafe Beton is a renowned mid-sized company that runs four concrete plants and two gravel pits at different locations in Saxony. The production of Perfect Pipe takes place in Stölpchen, near Dresden. Many years of experience, the affinity to the materials used, a spirit of enterprise and a high demand on product quality have been passed down through the generations and are combined with permanent innovations. Its more than 160 employees bring tremendous technical expertise and allow Grafe Beton to manufacture a wide range of products. Numerous awards and the loyalty of customers are a clear sign for the consistently high quality of the products offered by Tamara Grafe Beton.

Perfect Forming Technology – World premiere at bauma 2016

Schlüsselbauer Technology – the systems manufacturer and developer – had a booth at this year's bauma in Munich, which is the world's leading trade fair of the construction industry. Visitors had a great opportunity to experience the tremendous quality of Grafe Beton pipes for themselves. As part of the presentation of Perfect Forming Technology, a system developed by Schlüsselbauer for the economic industrial production of customised concrete products hardened in a mould, once again Perfect pipe, the successful concrete-HDPE composite pipe, has been in the focus of interest.

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