



Editorial

Dear Readers,
 The extension and renovation of infrastructures is a never-ending task for operators. Transport, snow-making or wastewater infrastructures often need to be adapted to current and future requirements. In the contributions to this month's Newsletter you will find examples of the use of ductile iron pipe systems as pre-insulated extinguishing water pipelines in motorway tunnels, their use in the extension of snowmaking systems plus the simultaneous pulling-in of two ductile cast iron sewage pipes into a jacking pipe beneath a railway line.

Have an enjoyable and stimulating read
 Sincerely yours



Christoph Bennerscheidt



Extinguishing water pipeline in heat-insulated DUCPUR ductile iron pipes with HYDROTIGHT restrained push-in joints, showing a side branch running to the hydrant niches.

Bypassing Biel – ductile cast iron extinguishing water pipelines in the motorway tunnels

The motorway bypass around the city of Biel has closed one of the last gaps in the Swiss national road network on the stretch between Solothurn and Neuenburg. Also the new section orbiting Biel connects the A5 motorway, the A16 Transjurane and the T6 going towards Bern.

This project means that in future, broad sections of the region as a whole as well as the city of Biel will be relieved of through-traffic. After just about 10 years of construction work, the so-called "Eastern branch" in the direction of Bern will be opened in 2017; work is expected to start on the "Western branch" going towards Neuenburg in 2020 and this should go into operation as from 2030.

♦ The A5 Biel Eastern branch, extensive parts of which run underground, runs from the present Biel East junction in Bözingenfeld, first via the Büttenberg tunnel and then, after a short stretch in the open, through the Längholz tunnel as far as the Brüggmoos interchange. The extinguishing water pipelines for these two tunnels have been produced using vonRoll DUCPUR type ductile iron pipes with the flexible HYDROTIGHT re-

strained push-in joint. The pipeline runs through utility pipeline galleries beneath the road surfaces in the tunnels with lateral branches to the hydrant niches. Because the extinguishing water is taken from the drinking water supply circuit, it was necessary to provide the cast iron pipes with external heat insulation to prevent excessive warming of the water. In total more than 8,000 m of DUCPUR DN 200 and around 400 m of DUCPUR

DN 125 ductile iron pipes were laid in the two road tunnels as extinguishing water pipelines for the A5 Biel Eastern branch project. Thanks to the flexible HYDROTIGHT restrained push-in joint, even complicated connection pipelines were able to be completed with perfection under tight space conditions.



Ductile iron pipes before installation



Installation under difficult geological conditions

Snowmaking equipment for Bergbahnen Westendorf

◆ The last winters proved it: natural snow occurring later and later along with ever shorter periods of cold weather are putting new demands on technical snowmaking systems. Therefore Bergbahnen Westendorf is currently extending its snowmaking equipment so that the water for snow production is certain to be ready for the start of the 2016/2017 season. Work was started in April 2016 and, among other things, includes the following individual tasks:

- Erecting the “Kreuzjöchelsee” reservoir with a 190,000 m³ capacity. In future the reservoir will represent the central water supply for the entire ski resort.
- Construction of a pumping station along with cooling tower facilities to increase snowmaking efficiency.
- Laying the reservoir extraction and field pipelines for snowmaking water with a total length of approx. 7,800 m.

In addition the piste area to be supplied with snow will be increased from the current 98 ha to 106 ha and the associated overall annual water volume will go from 317,000 m³ to 345,000 m³.

Generally speaking, where geological conditions are difficult, extra requirements are placed on the operational reliability of the piping system used. In this case, for example, subsidence can occur in the artificially produced “Kreuzjöchelsee” dam which has an impact on the reservoir extraction pipeline. The redistribution of loads in the ground/pipe system as well as changes in the position of the pipeline (angular deflection and length variation) are the consequence of this and demand the use of a robust pipe system.

The 7,800 m long reservoir extraction and field pipelines are therefore produced with pressure pipes in ductile cast iron with the proven BLS®/VRS® - T restrained push-in joints, which can undergo deflection of up to 5°. The reservoir extraction pipeline has been designed in nominal size DN 600 with a allowable operating pressure PFA of 32 bars and can take a maximum traction force of 1,525 kN.

Among the client’s essential criteria for awarding the contract for the piping system were having the factory located nearby, with the security of supply during the construction phase associated with this, and the ease and functionality of laying. Therefore Bergbahnen Westendorf continued to put its trust in ductile iron pipe systems from the TRM range of products.

By embarking on this project, Bergbahnen Westendorf can increase its guarantee of snow for the next skiing season and look forward to next winter with confidence.

Dates for your diary

22–24 September 2016

31st BWK Federal Congress:
Cities, Rural Areas, Rivers and More
Radisson Blue Senator Hotel, Lübeck

27–28 September 2016

DWA Annual Conference on the theme:
Cities, Rural Areas, Rivers – Water
management in Germany – Guarantees
for quality of life, MARITIM HOTEL, Bonn

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Installation of a DN 600 ductile iron pipe with a BLS® restrained push-in joint

A twin-pack of ductile iron pipelines pulled around the bend

◆ In south-east Berlin, in the district of Falkenberg, the restructuring of the sewer system involved crossing a railway line and a multi-lane road using the trenchless technique.

For the 215 m long crossing, the local water company, Berliner Wasserbetriebe, decided to pull two DN 500 and DN 600 (EN 598) ductile iron pipelines into a DN 1600 reinforced concrete jacking pipe and to backfill the remaining cavity afterwards.

The particular factor involved here was that the protective pipe had to be driven in a curved line so as to retain the required safety distance away from an existing bridge foundation. This also affected the ductile iron pipes to be pulled through:

in order for them to follow this curve, the pipes had to lie one on top of the other.

First of all the approx. 13 m deep launch and target pits with bored pile walls were prepared. After that the shield driving was commenced. Once the tunnel has been completed a U-rail was fixed to the bottom along which prefabricated pipe carriages could be run. Two fastening plates are attached to each pipe carriage for fixing the two cast iron pipes. The ductile iron pipes are equipped with BLS® restrained push-in joints. In this way the tractive forces could be transmitted through traction heads and pull rods to the respective BLS® push-in joints and both pipe strings were pulled in simultaneously.

The assembly of the BLS® push-in joints went quickly and safely and without complication, allowing rapid progress of the construction work.

After successful tightness testing of both the pipelines the remaining surrounding space was backfilled. The ascending branches of the sewer pipelines were able to be completed in the shafts.

An impressive use of the BLS® restrained joint system even under some special site conditions.



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Ductile Iron Pipe Systems**

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Publications



Website

The clearly structured online presence contains multilingual information about the missions, the aims and the members of EADIPS®/FGR®, as well as the dates of forthcoming events, technical publications, EADIPS®/FGR® standards and useful apps such as calculation tools and a standards database.

Manual

The E-Book “Ductile iron pipe systems” provides planning engineers, users and instructors with comprehensive technical knowledge about ductile iron pipe systems – pipes, fittings and valves.



Annual Journal

With expert contributions and informative photos and illustrations, the annual journal documents sustainable and universal technical possibilities for the use of ductile iron pipe systems.

