

NEWS

DUCTILE IRON PIPE SYSTEM

Information from the European Association for Ductile Iron Pipe Systems · EADIPS



Editorial

Dear readers,

The laying of new pipelines and the rehabilitation of an old one are the processes dealt with in two of the articles in the Jul./Aug. 2010 issue of the Newsletter. The articles establish the criteria which determined the selection of ductile iron as the material for these particular pipelines. In Hungary, ductile iron is making an important contribution to the construction of a sustainable water supply system and this is the subject of a further article. Have an enjoyable and stimulating read.

Sincerely yours,

Raimund Moisa



Cover is shallow in Calau so –

Ductile iron pipes for the Springteichallee

The little town of Calau in the Lower Lusatia region lies close to the triangle of autobahns to the south of the Spree Forest. Development work, including the laying of a full set of new supply and disposal pipelines, has been going on there since late 2009 on the road known as the Springteichallee. Some 450 m of DN 300 drinking water pipes to EN 545 with TYTON® and TYTON®-BRS® system joints are being installed, together with 220 m of TYTON® sewer pipes to EN 598 of nominal sizes from DN 500 to DN 800 for the rainwater pipelines.

◆ A service provided beforehand by the pipe manufacturer was the structural design of the pipelines. The height of cover was only small so pipes of wall-thickness class K9 were supplied. The pipes were given flexible joints to the manholes by means of manhole connectors from the proven range of ductile sewer fittings which were cast into the concrete. These manhole connectors take up loads due to differences in settlement between manholes and pipes. The ductility of the pipe material prevents any fracture or cracking at this point. The TYTON® push-in joint to DIN 28603 is resistant to the penetration of roots and is easy to connect.

Water aggressive to concrete transported in ductile iron pipes



A grey cast iron pipeline more than 100 years old carrying raw water from the "Hintermark" spring intake structure in the Offenbach district in Hesse has been showing increasing amounts of damage. The local water supply company Zweckverband Wasserversorgung Stadt und Kreis Offenbach (ZWO) is therefore preparing to replace some 800 m of pipes of nominal sizes from DN 100 to DN 250.

◆ The well water was examined in ZWO's laboratories and increased aggressiveness to concrete was found. So, should plastic pipes be installed rather than the ductile iron pipes lined with cement mortar which would otherwise be normal? A manufacturer of ductile iron pipes was queried on this point. ZWO also sought a view on whether there was an alternative to the use of cement mortar based on blast furnace cement as internal protection for the pipes. The analyses of the raw water by ZWO were assessed at the Chemisches und mikrobiologisches Institut UEG GmbH. According to DIN 2880 it was found that cement mortar based on high-alumina cement would be resistant in the long term to the raw water being transported. In view of good experience in the past with ductile iron pipes in ZWO's pipe network and the view expressed by the institute, the company decided to use ductile iron pipes lined with high-alumina cement mortar.

Hungary is putting its money on sustainability – the future is ductile iron pipes

In Hungary, experts from the water utilities, the chambers of engineers, the scientific community and the water industry have found that the average water losses from the pipeline networks are more than 20 % and in many cases even top the 50 % mark. The current replacement rate of < 0.3 % is attributable to the high inflation (totalling approximately 1100 % to date) in and after the 90's. At this rate, the water supply and sewage and wastewater disposal systems in Hungary would have to last for a good 300 to 500 years.



◆ Because of EU requirements, considerable capital investments are imminent in Hungary in the next few years, and a primary factor in new investments will be cost-benefit analyses. In drawing up a manual for “Specific Investment Costs”, the specialist bodies responsible, namely

- the operators association,
- the water utilities – the MAVIZ association
- the Hungarian Academy of Sciences – HAS,
- the Hungarian Chamber of

Engineers – MMK, ■ the Technical Sewage Association MaSzeSz – Magyar Szeviztechnikai Szövetség, ■ the Budapest University of Technology and Economics have made a close study of the useful life, economics and friendliness to the environment of various pipeline materials. Ductile iron pipe systems showed up particularly well in this study. When the subject as a whole was considered and existing pipelines were analysed, it was found that cast iron pipes

had been in use in Budapest since the 19th century, i.e. for more than 100 years, without any problems. These practical findings have been incorporated in the jointly produced manual on “Specific Investment Costs”. In the light of the findings made, municipal bodies are going to be increasing their investments in ductile iron pipe systems over the next few years in order to ensure the sustainability of the next generation of water supply and sewage and wastewater disposal systems.

A new ductile sewage pressure pipeline to benefit the environment

In the summer of 2009 the “Savona Consortium for Sewage Treatment” was faced with an unusual emergency: one of the main pressure pipelines carrying sewage under the beach-side promenade at Albisola in the Italian province of Savona was showing pressure losses. The Consortium feared the risk of environmental pollution and decided to replace the old steel pipeline.

DATES FOR YOUR DIARY

13–17 September 2010

IFAT, Munich, Germany

23–25 September 2010

BWK (Association of Water Management, Waste Management and Land Improvement Engineers)

Federal Congress, Duisburg, Germany

24–25 November 2010

2010 DWA (German Association for Water, Wastewater and Waste) Federal Conference, Bonn, Germany

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◆ The new pipeline had to meet the following requirements: operation under pressure, resistance to sea water, a guaranteed leak tightness of the joints, easy connection and a good price-to-performance ratio. The Consortium opted for a 1,050 m long DN 700 ductile pressure pipeline for sewage of ECOPUR pipes. What the polyurethane (PUR) coating to EN 15189 provides above all is the requisite resistance to sea water. The push-in joints are provided with an external thrust resistance system. With the assistance of the pipe manufacturer, installation was completed in just a month.

