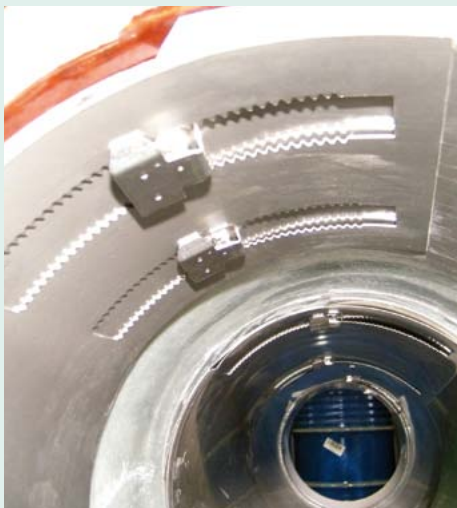


Flushing-resistant and infiltration-proof – Test successfully passed!

Uhrig Kanaltechnik GmbH's Quick-Lock liner-end sleeve passes strict IKT tests.

The IKT - Institute for Underground Infrastructure has subjected Uhrig Kanaltechnik GmbH's recently developed Quick-Lock liner-end sleeve to exhaustive testing. The sleeve's durability was tested in high-pressure flushing cycles, its sealing action against external water pressure, and its resistance against high-pressure jets. The Quick-Lock liner-end sleeve passed all these tests in exemplary fashion, and now bears the IKT seal of approval.

Uhrig's new product consists, like its familiar Quick-Lock system, of a stainless steel sleeve with an elastomeric seal of large surface area, which balances out misalignment between the liner and the pipe. The sleeve can be used both for sealing of the annular gap between the liner and the existing pipe and for connection of tube liners to manhole shafts; here, it also covers the



Liner-end sleeve: an elegant solution for joining of a liner to the existing pipe (photo: Uhrig Kanaltechnik)

manhole shaft connecting socket. In addition to its now proven sealing action, the sleeve can also, apparently, protect the liner end against damage from high-pressure flushing, as Uhrig Kanaltechnik points out.



Complex test apparatus: the 12 m long test line in IKT's test shop



The new Quick-Lock liner-end sleeve is available for pipes of nominal diameters of DN 150 to DN 600, in lengths of 250 mm (DN 150 to DN 400) and 300 mm (DN 450 to DN 600). The research and test institute in Gelsenkirchen tested the sleeves for pipes of nominal diameter DN 300.

Complex programme of tests

IKT set up a test length of around 12 metres for these tests: five concrete lower manhole sections (dia. 1000 mm) with four intervening DN 300 conduit sections. Two of these sections consisted in each case of two concrete articulated elements, and two sections in each case of two stoneware articulated elements.

Following setting-up of this test system, the client firstly installed a continuous tube liner (wall thickness: 6 mm) with an outer film into the conduit sections and removed it again from the manhole conduit area after curing. The liner ends were sealed using the new sleeves.



Lasting tightness

The sleeves installed in the test line were firstly submitted to a short external hydraulic pressure test at 1 bar test pressure for 30 minutes. The overpressure in the annular gaps of the drain sections was then reduced to 0.5 bar; this pressure was then maintained for 1,000 hours, in order to test tightness against contacting groundwater. All liner-end sleeves withstood the pressure in both tests, and no water penetrated into the pipe.



Testing the tightness against external water pressure

Proof against high-pressure flushing

Materials installed in the drain are subjected to particularly severe loads during high-pressure cleaning. Even after sixty cleaning cycles (DIN 19 523, Procedure 2: Practical testing) using a commercially available omnidirectional nozzle, the Quick-Lock liner-end sleeves continued to exhibit an extremely good condition. The liner-end sleeves manifested virtually no traces after the test - only in the pipe sole did the IKT testers find slight, isolated scratch marks on the stainless steel sleeve, these probably having been caused by the flushing nozzle. The subsequent short external hydraulic pressure test at 0.5 bar for 30 minutes and at 1 bar for a further half hour confirmed everyone's initial impression: No leaks, and the DIN 19 523 practical test successfully passed!

All the sleeves tested also passed the DIN 19 523 [1], Procedure 1 (Materials testing) high-pressure flushing resistance test. After removal of the liner-end sleeves, the elastomer seals and their sealing lips exhibited no damage capable of impairing the system's sealing action.

The detailed report can be downloaded from the Internet at: www.ikt.de (German Version)



neutral
independent
non-profit institute



IKT - Institute for Underground Infrastructure

ABOUT IKT



IKT - Institute for Underground Infrastructure is a research, consultancy and testing institute specialized in the field of sewers. It is neutral and independent and operates on a non-profit basis. It is oriented towards practical applications and works on issues surrounding underground pipe construction. Its key focus is centred on sewage systems. IKT provides scientifically backed analysis and advice.

IKT has been established in 1994 as a spin-off from Bochum University, Germany.

The initial funding for setting up the institute has been provided by the Ministry for the Environment of the State of North-Rhine Westphalia, Germany's largest federal state.

However, IKT is not owned by the Government. Its owners are two associations which are again non-profit organizations of their own:

- a) IKT-Association of Network Operators:**
Members are more than 120 cities, among them Berlin, Hamburg, Cologne and London (Thames Water). They hold together 66.6% of IKT.
- b) IKT-Association of Industry and Service:**
Members are more than 60 companies. They hold together 33.3% of IKT.

You can find information on projects and services at:
www.ikt.de



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