

Connex sewer laterals with ball joint score "GOOD"



Funke Kunststoffe GmbH's "Connex connection with ball joint" achieved the "GOOD" (1.9) test verdict in the IKT's "Private Sewer Laterals" product test. The installation of a ball joint resulted in visibly improved resistance to structural and operational loads compared to the original sewer lateral model.

On test

After many years of practical use, Funke Kunststoffe GmbH wanted to determine precisely how its Connex connection with ball joint would perform in the "Private Sewer Laterals" test programme. For this purpose, Funke commissioned the IKT to conduct a precise analysis of the suitability of the Connex connection with ball joint for practical use. The test was performed in accordance with the conditions specified for the IKT "Private Sewer Laterals" product test.

The Connex connection passed the test programme with the grade of "GOOD" (1.9) and has thus been awarded the IKT product test seal of quality.

The main evaluation criterion in the IKT product test is the tightness of the sewer laterals both after installation and after exposure to structural and operational loads.

Connects differing materials

The Connex connection with ball joint can be used to connect laterals with main drains consisting of differing pipe materials. The sewer lateral can be installed in main drains consisting of rigid PVC, GRP, PP, asbestos cement or fibre-reinforced cement (FC). The outgoing connecting lines can consist of rigid PVC and PP, or of other materials, such as GRP, PP (corrugated/ribbed), cast iron and/or stoneware, provided suitable adapters are used.



System test on the Connex connection

A total of three models have been developed for the various wall thicknesses and nominal diameters of DN 150/DN 200 of the connecting pipes. The Connex DN/OD 160/162 connection, which was conceived for DN 150 connecting lines and main-conduit wall thicknesses of between 3 and 15 mm, was examined in the context of the IKT product test.



Connex connection following installation (from site study)

The Connex connection was subjected to detailed testing under structural and operating conditions in drain/sewer test lengths at the IKT. More extensive on-site studies examined the handling characteristics of the Connex connection with ball joint under in-situ conditions, with influencing factors such as available space, prevailing weather and/or time pressure.

The tests were conducted in accordance with the test programme developed jointly with fourteen system operators for the IKT "Private Sewer Laterals" product test. The test, completed in June 2002, combines the system operators' practical and operational experience with the IKT's scientific expertise. The test focuses on system testing of installed sewer laterals, on the evaluation of information provided by the manufacturer (such as the installation manual, for example) and on on-site tests. This test, which continues to be completely up-to-date, can be performed by sewer lateral suppliers at any time, whether on sewer lateral models already tested and subsequently improved, or on totally new developments.

Results available in the Internet

This article contains only extracts from the complete results. The detailed report can be downloaded from the Internet at: www.ikt.de (German Version)

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IKT - Institute for Underground Infrastructure

(Result table on the following page)

IKT "Private Sewer Laterals" product test

Manufacturer Model	Funke Kunststoffe GmbH CONNEX - sewer lateral, DN/OD 160/162 with ball joint 
Price for one sewer lateral / 100 sewer laterals in Euro, approx.	95.00 / 8,300.00
IKT test verdict	GOOD (1.9)
System test (weighting: 85%)	Good (2.0)
Sewer lateral installed in main pipes consisting of:	Rigid PVC pipe DN/OD 315
Sewer lateral connected to pipes consisting of:	Rigid PVC pipe DN/OD 160
Tightness after installation*	++
Tightness after loading**:	
after HP cleaning	+
after flailing	-
after angling off	+
after shear loading	+
Manufacturer's information (weighting: 15%)	Very good (1.0)
Installation manual***	++
Test certificates****	++
Additional information: On-site boundary conditions	
High space requirement	No
High time input	No
Special tools necessary	Manufacturer's installation tool necessary for installation
Technical features	
Available for connection to main pipes:	Rigid PVC pipes DN/OD 200 - DN/OD 1500 GRP pipes DN 250 - DN 1500 PP pipes DN 200 - DN 630 AC and FC pipes DN 200 - DN 600 (these applications covered by three models)
Available for connecting pipes:	Rigid PVC/PP pipes (smooth-walled) DN/OD 160/200; DN 150/200 GRP/PP (corrugated/ribbed) pipes, cast-iron and stoneware with appropriate adapter (DN/OD 160 and/or DN 150 covered by two models, DN/OD 200 by one model)
Recommended improvements	
Improve sealing action after installation	No
Improve sealing action after loading	Yes (flail)
Reduce space requirement for installation	No
Reduce time input for installation	No
Improve installation manual	No

* Evaluation: 100% of tightness tests passed after installation = ++; > 85 % = +; > 70 % = o; ≥ 50 % = -; < 50 % = --
 ** Evaluation: > 50% of tightness tests passed after loading = +; ≤ 50 % = -
 *** Evaluation: Comprehensibility and layout Very good = ++; Good = +; Satisfactory = o; Sufficient = -;
 No installation manual/inadequate installation manual = --
 **** Evaluation: Extremely extensive tests = ++; Extensive tests = +; Standard tests = o;
 Low scope of testing = -; No test certificates submitted = --

Key to test results: Very good = 1.0 - 1.5. Good = 1.6 - 2.5. Satisfactory = 2.6 - 3.5. Sufficient = 3.6 - 4.5. Deficient = 4.6 - 5.5. Insufficient = 5.6 - 6.0.

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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