

Funke info

The Funke Kunststoffe GmbH magazine



Sewer connections

The all-rounder:

*Renovation Socket and
the uniTec® Sewer
Connection*

The classic:

*FABEKUN® Junction and
CONNEX Junction*

The new kid on the

block: *ILA, HS® Adhesive
Saddle and HS® Vario
Connection*



From the standard connection to the specialist solution:
with **Funke**,
anything's possible!



www.funkegruppe.com

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Foreword

The transition between the lateral drain-age and the sewer pipe is one of the most delicate areas of the sewage system. This is borne out by the results of the 2015 DWA survey on the condition of the German sewer system. The survey shows that protruding or damaged connections still account for 21% of all damage – making them the most common type of damage. This list of damages discovered during inspections and camera surveys is long, ranging from defective, leaky and worn-out sewer connections to ingrown roots. There are a multitude of underlying causes. The age of the sewer system is important, but so is the material, which is subject to natural wear. However, unprofessional installation is still at the root of many instances of damage.

Funke saw the need for action when it came to sewer connections at an early stage, and has continued to conduct pioneering work, as demonstrated by developments such as the FABEKUN and the CONNEX-Junction. These have now become essential products for any modern pipe manufacturer, just like the Expansion Joint, the Complete Saddle Set Kit, the Renovation Socket and the uniTec® Sewer Connection. And Funke keeps adding to its extensive portfolio of sewer connection products, with the Internal Backdrop (ILA), the Telescopic Connection, the HS® Vario Connection and the HS® Adhesive Saddle. This edition of Funke info offers an overview of the company's latest connection solutions.

We hope you enjoy it!

Kind regards,

*Dieter Jungmann,
Head of Civil Engineering*

Funke Sewer Connections Simple installation



uniTec® Sewer Connection

DN/OD 160

for main sewer pipes DN 300–2400



FABEKUN® Junction

DN/OD 160 and 200

for main sewer pipes DN 250–2400



Funke Telescopic Connection

DN/OD 160 and 200

for wall thicknesses of
180–560 mm



Internal Backdrop (ILA)

DN/OD 160 to 400

for concrete chambers DN 1000,
1200 and 1500

Legal information

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For a long time, the transition between the lateral drain and the sewer pipe was often overlooked in discussions about sewer systems. The integration of the lateral connection into the sewer pipe required skill and guile on the part of the company doing the work, both when laying new pipes and repairing damaged connections.

For a long time, there were no standardised products for professional solutions, which meant that reliability and durability in these connections was nothing but a pipe dream. The damage caused by unprofessional work was often severe – especially when wastewater from damaged inlets polluted the groundwater. But how can you make lateral sewer connections with a lasting seal, be it for new systems or renovations?

for a lasting seal!



CONNEX-Junction

DN/OD 160–200
for main sewer pipes DN 200–1500



UD Expansion Joint/ Wall Transition

DN/OD 110–200
for wall thicknesses 200–400 mm



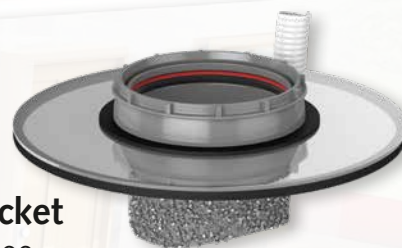
Pipe Liner Lateral Connection System CONNEX

for main sewer pipes DN 250–1500



Complete Saddle Set

DN/OD 110–710
for main sewer pipes DN 200–2400



Funke Renovation Socket

DN/OD 160 and DN/OD 200
for main sewer pipes DN 300–1000



HS® Vario Connection

DN/OD 160
for main sewer pipes DN 300–1000



HS® Adhesive Saddle

DN/OD 160 and 200
for main sewer pipes DN 200–500

Always on-hand with a solution

Funke Kunststoffe GmbH has known the answers to these questions for decades. Time and again, the company has put efficient, practical solutions on the market that have made on-site work in the trench easier and produced durable, water-tight connections.

The lateral connection revolution

Examples of this include the overwhelmingly popular FABEKUN® Junction and the CONNEX-Junction. When they were first launched in the 1990s with adjustable sockets, these fittings sparked a revolution in the field of sewer connections. Ever since, the significant increase in flexibility has been instrumental in ensuring that connec-

tions have a long service life and the high level of quality required. Over the subsequent years, Funke has continued to expand its drainage portfolio with useful products such as the UD Expansion Joint, the Funke Renovation Socket and the uniTec® Sewer Connection. The Internal Backdrop (ILA), the Funke Telescopic Connection, the HS® Vario Connection, the HS® Adhesive Saddle and the Pipe Liner Lateral Connection System CONNEX are part of the latest generation of modern, high-performance fittings that help to provide reliable, professional and cost-effective connections.

Proper connection – **Funke** has



uniTec® Sewer Connection

The new all-rounder in the field of lateral connections



Nominal diameters: DN 300 – 2400 with DN/OD 160 socket

Type 1 for main sewer pipes of DN 300 to DN 1000

Type 2 for main sewer pipes of DN 1100 to DN 2400

Extension piece for wall thicknesses > 120 mm available as accessory

Area of use: Retrofitted integration of sewer connections in pipes with wall thicknesses of 10 mm or higher



User-friendly, flexible, reliable: the uniTec® Sewer Connection offers a problem-free means of retrofitting lateral connections to sewer pipes with nominal diameters of DN 300 to DN 2400. It can also be used with a wide range of materials, such as plastic, concrete and clay – no matter what the inside diameter or wall thickness of the pipe.

Type 1 of the fitting is designed for main sewer pipes of DN 300 to DN 1000, while Type 2 is designed for

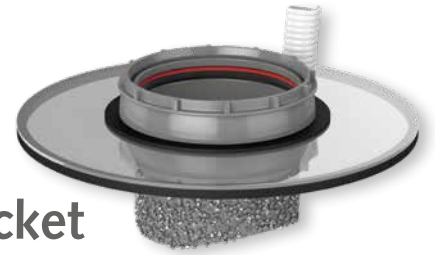
main sewer pipes of DN 1100 to DN 2400. The nominal diameter of the uniTec® Sewer Connection is 160 mm; a core drill hole of 200 mm is required for installation. The connection is designed to adapt to the inside edge of the drill recess in the main channel, thus establishing a force-fitted connection. Likewise, the seal collar is infinitely variable, and adapts to the wall thickness and inside diameter of the main sewer pipe. The main sewer pipe wall can have any thickness upwards of 10 mm; the extension



pieces, which are available separately, can also be used to bridge a wall thickness of 70 mm each.

professional renovation: the answers

Funke Renovation Socket



Unique installation and function

For nominal diameters: DN 300 – 1000 with DN/OD 160 or DN/OD 200 socket

Area of use: Integrating lateral drains into old, worn out, or non-standard openings in foul water and rainwater systems.



When it comes to renovating or retrofitting lateral drains in sewer pipes made of materials like concrete and clay, it is not uncommon to find openings that are old, worn out, or simply don't match the required dimensions. The Funke Renovation Socket has been specially developed for such situations, and allows the proper and professional retrofitted integration of sewer connections in main sewer pipes with nominal diameters of DN 300 to DN 1000.

The DN/OD 160 Renovation Socket is ideal for broken areas in pipes measuring max. 260 mm (min. 200 mm). With the DN/OD 200 version, the broken areas must be no larger than max. 310 mm in diameter (min. 250 mm). The fitting has an adjustable socket 0° – 11° and comprises a

foldable inner casing adjusted to the nominal pipe diameter in question, a transparent outer form-work, and the socket itself. Due to the differences in the size of the inner casing, each of the two versions of the Renovation Socket comes in three types to match the different nominal diameters of the main sewer pipes.

The installation kit includes the Renovation Socket, the inner casing and a transparent outer form-work, which is used to ensure that the sealing resin used for installation (included in the kit) is distributed evenly. The red tool required (which is also available from Funke Kunststoffe) must be ordered separately.



Two Funke classics: that



CONNEX-Junction

The flexible connection with the adjustable socket



Nominal diameters: DN 200 – 1500 with DN/OD 160 and 200 connection

Area of use: retrofitted integration of sewer connections in pipes with a wall thickness of 3.0 to 31.8 mm, for pipes with smooth inner and outer surfaces



Thanks to the CONNEX-Junction, lateral drains or lateral inlets can be quickly, easily and cost-effectively integrated into the sewer pipe, in new or existing systems.

The drill hole required for installation can be created using a conventional hand drill. The adjustable socket ensures that the connected pipes permit movement in all directions, from 0° to 11°; the resulting sewer connections have zero tension. The CONNEX-Junction thus complies with the requirements of DWA-A 139, according to which "lateral pipes must be manufactured and connected so that they can allow for

movement". The CONNEX-Junction is also DIBt and WRc approved, and accepted by many water companies worldwide.

For new and existing systems

The CONNEX-Junction is available for nominal diameters of DN 200 to DN 1500 with DN/OD 160 and 200 connections, and suitable for integration in sewer pipes with wall thicknesses of 3.0 to 31.8 mm.



raised the bar!

FABEKUN® Junction



The classic for concrete and reinforced concrete pipes

Nominal diameters: DN 250 – 2400 with DN/OD 160 and 200 connection

Area of use: For concrete and reinforced-concrete pipes (EN 1917), foul-water, mixed-water and rainwater pipes, highway construction, sewer pipes with a wall thickness of 30 – 230 mm. Larger nominal diameters available on request.



The FABEKUN® Junction, which is DIBt and WRc certified equipped with a built-in, tension and thrust-protected, DN/OD 160 or DN/OD 200 adjustable socket. The saddle is suitable for connection to concrete and reinforced-concrete pipes (EN 1917), and also for clay pipes with wall thicknesses of 30 mm and greater. Its three-dimensional seal allows it to adapt perfectly to the inside radius of the sewer pipe. The adjustable socket allows the angle of the connected pipe to be altered within a range of 0° to 13°, and compensates for the differences in the subsidence behaviour of the main sewer pipe and the connected

pipe. As such, it fulfils the requirements of DWA-A 139 (Germany).

Plenty of benefits in the pipe trench

The fitting offers a number of key advantages. There is no disruption to sewer operation or the pipe bedding during installation. The pre-fabricated sewer connection has zero tension, while the entire drilled recess is protected and durable as the reinforcement steel is protected against corrosion. The FABEKUN® Junction is suitable for pipes with a wall thickness of 30 – 230 mm.

The perfect solutions for retrofitted connec



Complete Saddle Set

For main sewer pipes from DN 200 to DN 2400



*HS® Complete Saddle Set
DN/OD 110 – 710
for main sewer pipes DN 200 – 2400*

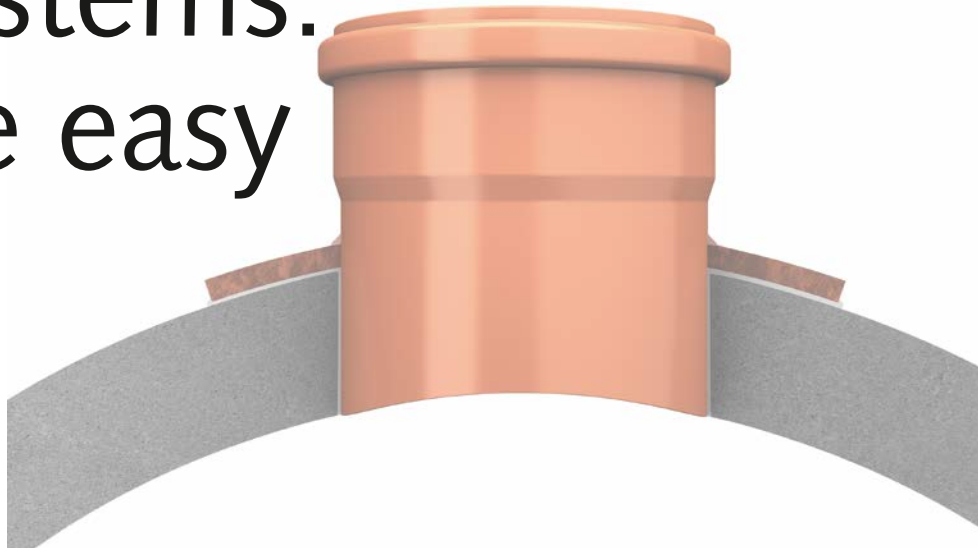


*CONNEX Complete Saddle Set
DN/OD 315 – 710
for main sewer pipes DN 400 – 2400*



*UD Complete Saddle Set
DN/OD 110 – 500
for main sewer pipes DN 200 – 2400*

existing systems: connections made easy



Nominal diameters: DN/OD 110 to DN/OD 710

Area of use: For lateral connections to main sewer pipes of DN 200 to DN 2400

This Complete Saddle Set is designed for retrofitted lateral connections to sewer pipes with dimensions from DN/OD 110 to DN/OD 710. It can be used for main sewer pipes with nominal diameters of DN 200 to 2400, especially those made of concrete, clay, GRP, asbestos cement, fibre cement and cast iron.

For smooth-walled pipes

The full installation kit is suitable for connection to pipes with smooth walls. First, a drill hole is made centrally in relation to the pipe axis, and cleaned out. The adhesion surfaces on the pipe and on the saddle set are then coated with the primer. Next, the hardening agent is mixed with the adhesive and quickly applied. The

saddle set can now be mounted and – depending on the nominal diameter – pressed on/fixed in place using a saddle clamp or tensioning bands. There is no disruption to the pipe bedding during installation.

Allows level invert transition

The complete saddle set is available in four versions: UD, CONNEX, HS®-S for sewer pipes (foul water/ brown depending on country) and HS®-R (rainwater/blue). It can also be used to establish level invert transitions between pipes with differing geometries, e.g. ovoid profiles. In such cases, the baseplate of the complete saddle set is adjusted to the cross-section of the pipe in question.



Funke's two latest perfect for connections



Pipe Liner Lateral Connection System CONNEX

For main sewer pipes DN 250 and larger



Nominal diameters: DN/OD 160 and 200 for liners/main sewer pipes of DN 250 to DN 1500

Area of use: For integration of lateral drains into main sewer pipes that have been retrofitted with a pipe liner



The Pipe Liner Lateral Connection System CONNEX is suitable for integrating lateral drains into main sewer pipes that have been retrofitted with a tube liner (GRP or needle-felt tube/synthetic fibre liners). Three versions of the Pipe Liner Lateral Connection System CONNEX are available: the nominal diameter DN/OD 160 version with a 162 mm drill hole for use in main sewer pipes DN 250 and 300, the DN/OD 160 liner connection with a 200 mm drill hole for use in main sewer pipes DN 400 – DN 1500, and the DN/OD 200 with a 200 mm drill hole for use in main sewer pipes DN 250 – DN 1500 or larger. Installation is carried out using a work window cut into the main or existing sewer pipe with a suitable



tool, such as an angle grinder. During professional installation of the individual components, a force-fitted connection to the liner is created to compensate for any unevenness in the liner due to the design.



Areas of use

Pipe Liner Lateral Connection System CONNEX	Main sewer pipe DN	
DN/OD 160	250 – 300	
DN/OD 160	400 – 1500	
DN/OD 200	250 – 1500	
HS® Adhesive Saddle		
DN/OD 160	200 – 500	
DN/OD 200	250 – 500	

products: to lined pipes

HS® Adhesive Saddle



For main sewer pipes from DN 200 to DN 500

Nominal diameters: DN/OD 160 and 200

Area of use: For integration of lateral drains into main sewer pipes that have been retrofitted with a tube liner



Socket DN/OD	Drill hole diameter mm
160	162 ± 1
160	200 ± 1
200	200 ± 1
	Opening (milled or drilled) with max. diameter of
160	175/210/230/250/270
200	210/230/250/270

The brown HS® Adhesive Saddle is also an outstanding solution for integrating lateral drains into main sewer pipes that have been fitted with a pipe liner. It is available in nominal diameters of DN/OD 160 and 200, and is suitable for use in main sewer pipes sized DN 200 to 500 and connection openings ≥ 200 mm. The built-in HS® VARIO Coupler offers a high level of flexibility at the installation point. Once the work

window has been cut out, the fitting can be glued into place. The HS® Adhesive Saddle can also compensate for slight unevenness or wrinkling in the liner. A dual-component adhesive is included in the delivery; this must be applied using the putty knife as specified in the installation instructions. Variants for large ranges of nominal diameter are also available on request.

Looking for solutions for Then you've come to



HS® Vario Connection

For integration in concrete junctions



Nominal diameter: DN/OD 160

Area of use: For integration of plastic lateral drains into concrete junctions.



The DN/OD 160 HS® Vario Connection is designed for integrating lateral drains that use plastic pipes into concrete pipe junctions. These come as standard with a connection for DN 150 clay junctions with spigot ends. Since plastic pipes are becoming increasingly common for lateral drains,

the HS® Vario Connection offers a light, flexible, easy-to-handle alternative for building contractors and civil engineering sub-contractors. Among other features, this fitting offers adjustability from 0° to 11°.



access post-installation? the right place!

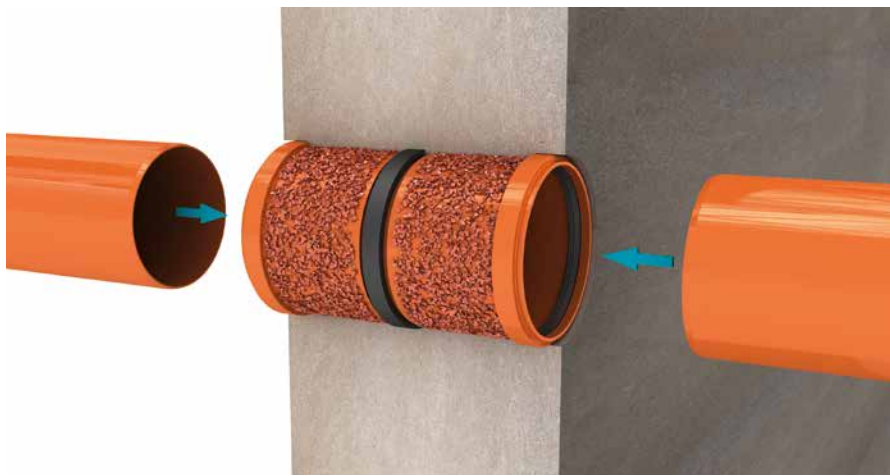


UD Expansion Joint



Funke Pipe Plug

For wall transitions and inspection openings



Nominal diameter:
DN/OD 110 – 200

Area of use: Basement walls and chambers

Through the wall

Funke's DN/OD 110 – 200 Expansion Joints are suitable for embedding in concrete basement walls and chambers. The fittings, which are sanded on all sides, are fitted with an expansion seal band in the middle, which expands on contact with water. Expansion Joints are fitted on both sides with a push fit socket (EN 1401) and lip sealing rings.



The Expansion Joints can withstand water pressures of over 1.0 bar (10 m hydrostatic head). They are suitable for embedding in concrete walls with thicknesses of 200 – 400 mm. Larger nominal diameters available on request.



Nominal diameter:
for DN 75 – 200

Area of use: non-pressurised wastewater and rainwater drainage pipes

Sealing access points tight

The Funke Rohrpfaster® Pipe Plug can be used to reliably seal up access points (Ø 54 mm) in existing plastic and grey-cast-iron pipes (SML) so that they do not leak. This is useful for openings made with a drill bit to clear blockages, for example. It can also be used for pipe damage: once the drill hole has been made, the affected area can be sealed up using the pipe plug. The pipe plug is made of impact-resistant plastic with an Allen key in the centre. The sealing surface is made using an elastomer.

The specialists for large they'll get the



Funke Telescopic Connection

Variable connection solution for thick-walled pipes



Nominal diameter: DN/OD 160
and 200

Applications: retrofitted inte-
gration of sewer connections in
pipes with thick walls



The DN/OD 160 and 200 Telescopic Connections can be used to establish retrofitted connections to main sewer pipes with wall thicknesses of 180 to 560 mm and any conventional profile – regardless of whether the sewers are made of concrete, tamped concrete or brick. They can even be used in old sewer systems with unknown wall thicknesses.

The two-part fitting comprises a 57 cm plastic pipe with an activatable sealing ring at the bottom – longer versions available on request – and a combination of a VARIO Socket, a plastic collar with an activatable seal, and a bracket for two filling hoses: one blue, one white. The 0° – 11° ad-

justable socket of the VARIO Socket provides extra flexibility when connecting lateral drainage pipelines.

All-inclusive

The delivery package for the DN/OD 160 and 200 Funke Telescopic Connection includes all the materials required for installation: a cleaner, an expansion resin cartridge, an adapter for resin, the resin mixer (whisk), a funnel (red), a set of installation instructions, nitrile gloves, safety goggles, and an opener for the tin of resin. The approximate wall thickness of the main pipe must be specified when ordering, as this is used to calculate the required quantity of sealing resin.



pipes and chambers: job done!

Internal Backdrop (ILA)



For overcoming height differences

For nominal diameters: DN/OD 160, 200, 250, 315 and 400, additional nominal diameters available on request

Area of use: DN 1000, 1200 and 1500 concrete chambers in sewer systems with height differences



FABEKUN® Junction for
Internal Backdrop (ILA)



The Internal Backdrop with rear EPDM seal is designed to bridge height differences in the sewer system. The standard version of the fitting is suitable for concrete chambers of DN 1000, 1200 and 1500. Variants for larger chambers are also available on request.

For cleaning and inspection

The Funke ILA can be used when building new chambers or be installed in existing ones. The pipe is connected with a pipe section passed through the chamber wall. The wall transition can be made either with a pre-produced chamber lining or an on-site ring space seal made by the customer. There is an opening for

easy inspection and cleaning. The low space requirements of the Funke ILA mean that the chamber remains accessible. The accessibility has to be checked on a case-by-case basis if there is an inlet with a nominal diameter of 250 mm or higher.

Plenty of benefits

The Internal Backdrop is impressive in many ways, from its minimal space requirements to its quick installation. The fitting is also available as a DN/OD 160 FABEKUN® Junction for retrofitting in the walls of a chamber structure.



All the information you need in just three clicks



Funke Kunststoffe GmbH has launched its new website! www.funkegruppe.com is neat, striking and clearly structured, bringing it up to date with the latest standards in terms of appearance, functionality and user-friendliness.

Picking up users

On the homepage, two main areas catch the eye: Products and Applications. "We pick up our users right where they need their information," explains project manager Maria Koglin. Users will usually approach the site with one of two mindsets: either they have a challenge in mind and are looking for an application that will solve their construction problem, or they are looking for a specific product. The website can cater to both situations.

Easy starting point

Clicking on a product area will take the user to an overview page. From there, their next click will guide them to the information for the product they need. The navigation system for the "Applications area" is just as clear and direct. The only difference is the starting point; here, the user begins with a question: "I'm facing a challenge – what solution can Funke offer me?" The application areas range from Sewer Connections – as shown in the photos – to Rainwater Management, Tree Protection, Soil Reinforcement, and even a DIY-Construction Market area.

Keep up to date

Users can find the latest press releases and news on what Funke is up to by clicking on 'News' in the menu, or directly on the homepage. This section also contains case studies, the Funke magazine, and an introduction to the company.

All the information you need in your pocket

The website has a responsive design – this means that a mobile-optimised version of all the information on it can be loaded on any smartphone or tablet.

And help is also on hand for those who aren't quite sure what they need: next to the Search function at the top of the page, there are options for contacting our Technology, Sales, Headquarters and Press Liaison staff directly.

