

Funke info

The Funke Kunststoffe GmbH magazine



Flexible Couplings

VPC® Pipe Coupling:

*a clamping range that
can't be topped!*

Funke BI-Adapter®:

*a connection solution
with a twist of genius*

Funke BSM-Adapter®:

*for transitions to clay
and concrete sockets*



Damage in the pipe trench

Funke provides the ideal connection



www.funkegruppe.com

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Foreword

Connection – it's an important word in Funke's daily business, in more ways than one. Take our close connection with our customers, for example: with their specialist knowledge and hard work, Funke's expert consultants help to ensure that Funke products are installed properly and professionally in order to maximise the potential of the benefits they offer. However, more than that, our on-site expert consultants are also our 'direct line to the market'. They know where the problems in the pipe trench are and, together with our customers, constantly push us towards new developments.

The concept of connection also plays an important role in our research and development: as we see it, finding useful ways to bring different materials together is a key aspect of what we do. This is reflected in many areas, such as the plethora of new products and upgrades we put on the market every year.

Our customers don't just expect us to provide solutions that reliably connect plastic pipes to other plastic pipes – they also want to connect plastic pipes to ones made of concrete, clay and other materials. This is why we offer an extensive range of transition pieces that cover 94% of all the tasks that come up in day-to-day practice. And in case you're wondering, "What about the other 6%?" Don't worry – we're working on it! This edition of Funke info will show you just how many working, tried-and-tested connection solutions we have available right now.

We hope you enjoy it!

*Dieter Jungmann,
Head of Civil Engineering*

Legal information

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Simple – flexible – Modern conn



Funke BI-Adapter®
DN 150–1000



Funke BI-Adapter®, Rigid
DN 100–150



**Funke BI-Adapter®,
Ovoid**
DN 200/300–400/600

Here at Funke, we see ourselves as more than just a manufacturer – we are a provider of solutions. In other words, we don't just stop when we reach the end of the pipe. We keep thinking, keep developing – producing modern, innovative products that enable transitions between one pipe and the next. Simple, long-lasting, secure transitions for use both within homogeneous pipe systems and between pipes with differences in material, nominal diameter and geometry. In addition to pipes and moulded parts, Funke's complete systems offer a comprehensive range of transition pieces that can be used to overcome a huge variety of different challenges – professionally, efficiently and with lasting effect. Take the VPC® Pipe Coupling, for example: this Funke classic can be used to establish an optimum, secure connection between two pipes made of different materials but with the same nominal diameter, and is available for diameters of 100 to 2400 mm. A special, oil-resistant version of the VPC® Pipe Coupling is also available for nominal diameters

water-tight connections from Funke



Transition for for based
concrete pipe
DN 150



BSM-Adapter®
DN 250–500



VPC® Pipe Coupling
100–2400



Repair Junction
DN 200–500



FABEKUN Junction ILA
for internal backdrop
DN 160

up to VPC 382 mm. Both the standard model and the oil and fuel-resistant version of the VPC® Pipe Coupling in accordance with DIN EN 682 offer an easy way of establishing transitions between pipes with the same nominal diameter that are made of different materials and have different circular outer diameters.

Fast delivery, quick installation

And what if you need to set up transitions between pipes that are only circular on the inside? Funke also offers a professional solution that will give you just what you need to connect based pipes or top reinforcement: with the easy-to-install Funke BI-Adapter®, you can also connect pipes without circular outer geometries with no problem at all. The BSM-Adapter® also enables level-invert tran-

sitions from pipes to chambers, and from pipes to pipe sockets made of rigid, traditional materials, such as clay and concrete.

As such, Funke products will keep you equipped for a wide range of installation situations. And despite their differences, all our connection solutions have one thing in common: they work. Not just in theory, but in practice, too. And not just right now, but for years to come. It doesn't take long to see for yourself just how good they are: all our reliable, high-quality Funke products have short delivery times, all the time.



VPC® Pipe Coupling for diameters of 100 to 2400 mm

It can't be topped!



The Funke VPC® Pipe Coupling allows pipes that have the same nominal diameter but are made of different materials to be connected to one another safely, reliably, and with the best possible results – even if they are designed with very different outer diameters! The Funke VPC® Pipe Coupling consists of a reducible sealing sleeve made of elastomer rubber, a centrally reducible securing cage made of plastic, and two stainless-steel bands for applying force to achieve a uniform circumferential adjustment. Circumferential radial cut-outs/recesses in the material allow the teeth of the securing cage to latch into the rubber. The highly impact-resistant, shatter-proof mounting cage is resistant to both heat and cold. Thanks to its conically mouldable middle section and the integrated band guide channels on both sides, it allows for centric, stepless reduction adjustment during the cylindrical alignment in both sections of the system.

The reduction is applied evenly across the entire circumference, though the jointed middle section also allows reduction to be performed separately on each side of the pipe coupling. One feature of particular note is its flexibility: while comparable products that are available on the market are usually only suitable for certain clamping ranges, the VPC® Pipe Couplings cover every range from 100 to 2400 mm! And of course, the product is also DIBt-certified (Germany) for the 100 – 1070 mm nominal diameters (Z-42.5-450).

Compact, robust and flexible

Three versions of the VPC® Pipe Coupling are available. The standard version for nominal diameters of 100 – 995 mm uses components made of stainless-steel V2A (material no. 1.4301). The special version with V4A steel (material no. 1.4404) in the 100 – 382 mm nominal diameter range is oil and fuel-resistant, and also offers high resistance to aggressive substances in the soil (EN681-1 WH).



The third version is the VPC XXL which covers every range from 1070 mm to 2400 mm. The 100 – 220 versions of the VPC® Pipe Coupling are delivered in a plastic film carry pouch containing the product itself, installation instructions and the lubricant required for proper installation. The 250 version of the VPC® Pipe Coupling and all larger versions are delivered in a cardboard box and, for larger quantities, on pallets. The installation instructions are provided in four languages (GER, FRA, EN and POL), and explain the various installation steps using clear photos. Please note: an eccentric ring is included with the delivery for DN/OD 200 (outer diameter 200 mm) and DN/OD 250 (outer diameter 250 mm) pipes in order to allow a level invert connection. Special instructions on how to use this component properly are provided in the installation instructions.

With the tools required for installation – which include a box spanner

(for VPC 100 – 150), a tangential spanner (for VPC 290 – 995), the ratchet set (for VPC 100 – 270) and a torque wrench (for VPC 100 – 995) – you can enjoy outstanding installation results. The VPC XXL is equipped with an integrated hybrid tensioning system. The tools are available separately or as an accessory kit in an assembly kit box.





Transition for circular concrete pipe to plastic DN 150 – 800



*Adaptor for DN 150
special solution
Supplied in kit with
VPC® Pipe Coupling*



*VPC® Adaptor KB for transition from
plastic (PE, PP, PVC) to concrete
pipe, circular, DN 250 – DN 800*



For connecting plastic pipes to round concrete pipes with nominal diameters of DN 250 to 800, we provide an adaptor that compensates for the significant difference in the wall thickness of the two materials.

For connecting plastic pipes to round concrete pipes with a nominal diameter of DN 150, there is a special solu-

tion in the form of an adaptor. The transition to a DN 150 circular concrete pipe is available in a kit (code no. VPC® 150 B).

The adaptors and sleeves for the DN 250 to DN 800 nominal diameter ranges are available separately.



For round bottom or flat base

The perfect transition to concrete



VPC® Pipe Coupling

VPC® Adaptor KB



VPC® Adaptor 150 BF



Transition for DN 150 based concrete pipes

The VPC® 150 BF version of the Funke VPC® Pipe Coupling (for concrete pipes with outer diameters of 210 to 215 mm) can also be used for connections to based concrete pipes. In addition to the VPC® Adaptor KB, this solution also requires the VPC® Adaptor 150 BF. The Funke BI-Adapter® can be used for other nominal diameters.



enclosed installation instructions. The two components are included as a kit with the delivery.



During installation, the VPC® Adaptor 150 BF is placed on the existing concrete pipe with base so that it connects flush with the edge of the concrete. The VPC® Pipe Coupling is then pushed on and installed as described in the installation instructions. After this, the VPC® Adaptor KB is positioned in front of the concrete pipe and connected according to the





Funke **BI-Adapter**®

A solution with a twist of genius



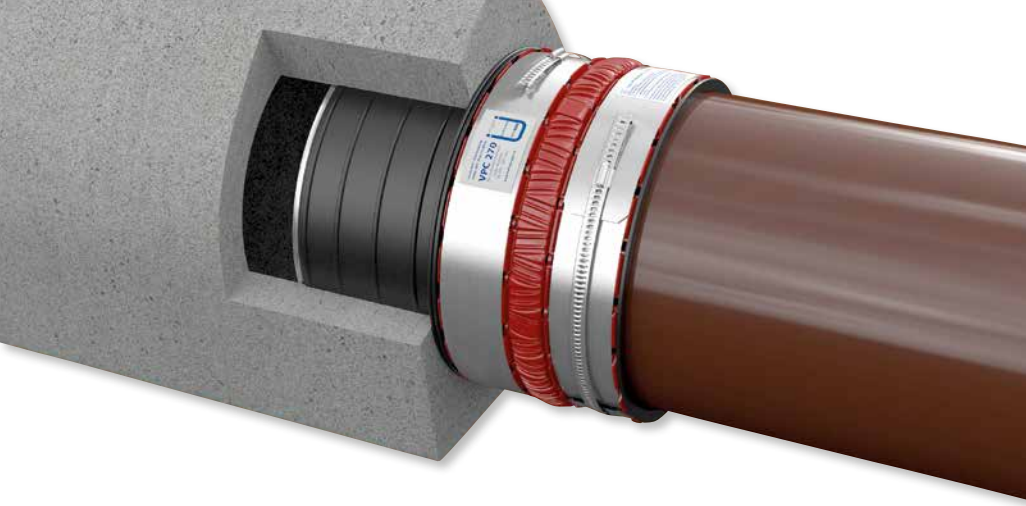
Connecting pipes made of different materials that have the same nominal diameter is all in a day's work for a civil engineer. Due to the time and costs involved, flexible, cost-effective solutions that provide tight seals are required. Depending on the materials available, however, such solutions are usually improvised rather than professional, and are not suited to continuous use over a long period

of time. However, Funke has already developed the perfect solution for professional connections between pipes with circular outer diameters: the VPC® Pipe Coupling.

The alternatives

But what if the pipes you want to connect are only circular on the inside and have different outer geometries – say if one has a base or top





**BI-Adapter
150 – 1000**



reinforcement? With the BI-Adapter, Funke also has a reliable alternative for such situations.

Press-fitted

The component consists of three parts: an inner barrel made from stainless-steel 1.4404, a sealing EPDM collar and a stainless-steel expansion wedge. The EPDM-encapsulated barrel is inserted into the pipe. The user then expands it by driving in the expansion wedge – the enclosed tapping block and a hammer are perfect for this job – which press fits it onto the inner wall of the pipe. Several sealing ribs arranged in a ring shape ensure that a tight joint is formed.

Always check the clamping range

In the next step, the wedge is trimmed so that it is flush with the flexible template, and the VPC® Pipe Coupling included in the delivery is mounted on the spigot end of the BI-Adapter and fixed in place. This establishes the conditions required in order to connect a pipe with circular outer geometry. There is just

one thing to bear in mind: the outer diameter of the pipe that needs to be connected must be within the clamping range of the VPC® Pipe Coupling you are using, which must be mounted on the larger pipe first.





Rigid version for small diameters The specialist for DN 100 to 150

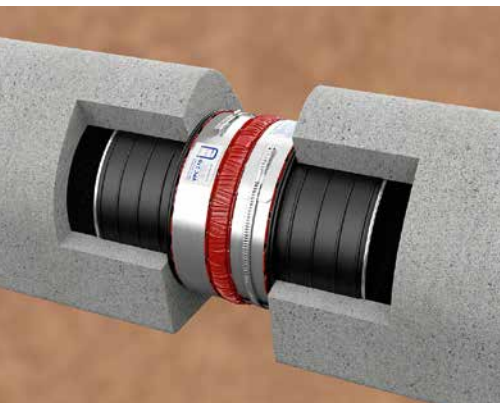


In addition to the standard model, a rigid version of the Funke BI-Adapter® is also available for pipes with diameters of DN 100 to DN 150. The easy-to-install adaptor can simply be plugged into the existing pipe – even



if the pipe has a base (foot). There is no need to rework the circumference of the pipe. The rigid version of the BI-Adapter is also a good solution for use in concrete-encased or concrete-cast pipes, such as those used on construction sites that require pipes with smaller diameters. The component is fitted with a Christmas-tree-shaped, multi-lip seal, which ensures that the rigid version of the BI-Adapter can bridge the tolerances of the existing pipes without any problems. This special seal also makes the fitting harder to pull out.

Special-purpose models



Transitions from concrete pipe to concrete pipe **Funke BI-Adapter® Internal/Internal**

The Funke BI-Adapter® Internal/Internal (DN 250 – 600) offers a simple solution for situations where an existing concrete pipe needs to be connected with a concrete pipe that does not have the correct dimensions. The internal/internal BI-Adapter allows you to connect the two pipe sections

securely, even if the spigot end of the new pipe does not fit into the socket of the existing pipe.

Furthermore, the Funke BI-Adapter® Internal/Internal allows you to make repairs, e.g. if a concrete pipe has collapsed or has been damaged by a

soil displacement hammer. The damaged sections of the pipe can be replaced with an HS® stub pipe. In such cases, a further VPC® Pipe Coupling is needed in addition to the internal/internal BI-Adapter set.



Ovoid or circular

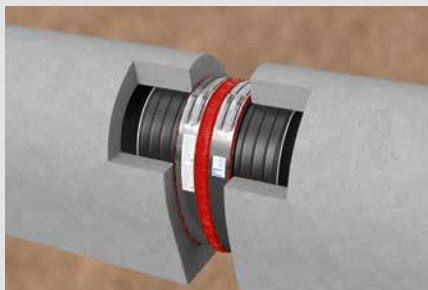
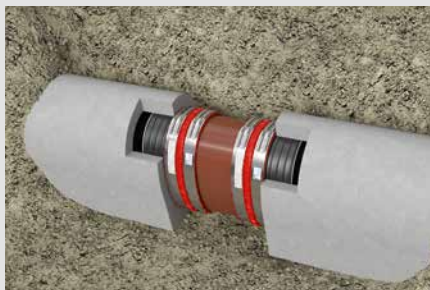
BI-Adaptor exceptional connections

Same nominal diameter, different materials – a daily concern for civil engineers when it comes to connecting pipes to one another. In the BI-Adapter, Funke has developed a solution that allows engineers to establish reliably water-tight transitions, even when the pipes don't have the same outer geometry.

The new Funke BI-Adapter® ovoid (DN 200/300, 250/375, 300/450 and 400/600) offers an easy-to-install alternative to the relatively complex procedure required to install a chamber, and can help to save time and costs for future civil engineering undertakings.

Ovoid profile to circular

Funke now also offers a version of the tried-and-tested BI-Adapter that can be used to establish transitions between circular and ovoid pipes.



Ovoid to ovoid pipe

Funke has developed a plastic ovoid pipe for repairs to ovoid-shaped pipes. A pipe line can be extended with the same shape using two VPC® Pipe Couplings and two ovoid BI-Adapter.

Furthermore, two ovoid BI-Adaptors and a VPC® Pipe Coupling can also be used to fill a gap.





Universal transitions to clay and concrete

Funke **BSM-Adapter**® for chamber and pipe sockets



The BSM-Adapter® enables level invert transitions from pipes to chambers, and from pipes to pipe sockets made of rigid materials, such as clay and concrete. The BSM-Adapter® is suitable for universal use with concrete or clay sockets of any design and a given nominal diameter. This solution makes it possible to set up

transitions to concrete bell sockets with or without integrated seals, as well as to high-load or normal-load sockets made of clay. As such, it does not matter whether the socket to which the connection will be made features an integrated seal.



In the past, the pipe socket had to be separated (cut) in order to create a transition to the socket end of an old pipe. Thanks to the BSM-Adapter®, this step is now unnecessary. This component also pays off when it comes to replacing old pipelines. Old joints are often used to integrate new pipes into existing chamber structures. In order to allow the use



of flexible pipe couplings to create the corresponding transitions in such situations, the BSM-Adapter® enables a water-tight connection between the new pipes and the old chamber sockets, as required by DIN EN 1610.

Level invert transition

The Funke BSM-Adapter® consists of a body encircled by a row of toggles, which are contracted with the help of a robust VA stainless steel clamp – causing the seal encircling the device to expand and be pressed into the clay or concrete socket. Importantly, the toggle structure features a very large clamping range, which can accommodate changes of the clamp seal of 35 to 40 mm, depending on the pipe diameter. What is more, the eccentric arrangement of the toggles ensures that the transition is always on invert level. The adaptor's extremely large clamping range, which

allows nominal diameters of DN 250 to DN 500, also means that this system can be used for many different applications.



Level invert connection: After the clamping screws have been pre-tensioned, the clamping bolt on the top (arrow) is turned using the T-socket wrench to bring the components to the same level. This also ensures the absorption of shear forces, thanks to the design.

Please note the detailed installation instructions enclosed with the BSM-Adapter®.



The Funke Repair Junction and Repair Pipe

Simple repairs for clay and concrete pipe lines



The Funke Repair Junction and Repair Pipe were developed in order to allow repairs to damaged clay or concrete sewer systems and retrofitting of sewer connections. Funke's innovation is significantly lighter than the solutions that have been available thus far, which use other materials. This noticeably improves handling at the construction site. The surface of the smooth-walled PVC-U pipes also ensures optimum hydraulics. They also boast another, equally remarkable structural property: thanks to their special production procedure, the inside diameters of the plastic pipes match those of the clay or concrete pipes in question. This keeps the transition between the two materials on invert level, which is important when adding a pipe liner during renovation work, for example.

For repairs and retrofitting

The Repair Junction (45° and 90°, including HS® VARIO coupler) and Repair Pipe (lengths: 1.5 m and 3.0 m) are currently available in nominal diameters of DN 200, DN 250,





Junction DN/OD 250/200

Junction DN/OD 250/160

Junction DN/OD 200/160



Repair Pipe 3 m



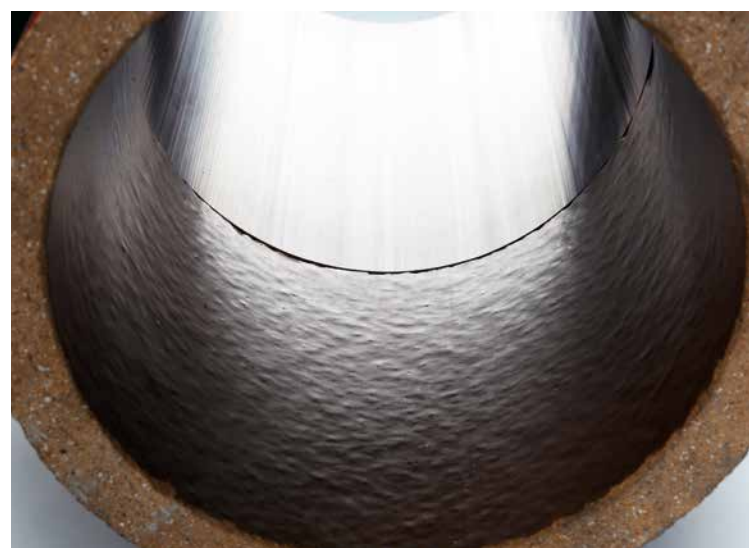
The inner diameter of the plastic pipe is adjusted to match that of the clay/concrete pipe.

DN 300, DN 400 and DN 500. The Repair Pipe makes it extremely easy to replace damaged pipe sections: once the damaged concrete or clay pipe has been removed, the Repair Pipe is integrated into the gap using VPC® Pipe Couplings. If a lateral sewer connection needs to be retrofitted into a clay or concrete sewer system at a later date, the Repair Junction is ideal for the job. For structural reasons, it is generally recommended that such pipes with nominal diameters of ≤ 300 mm be replaced when damaged. The Repair Junction is also integrated into the

existing pipe section using the VPC® Pipe Couplings. Any gaps between the Repair Junction and the ends of the pipe can be closed using the Repair Pipe.



The VPC® Pipe Couplings must be ordered separately.



Internal Backdrop also available with FABEKUN® Junction Thick chamber walls



The Internal Backdrop with rear EPDM seal is designed to bridge height differences in the sewer system. In addition to the standard model, which can be used in conventional chamber structures, it is also available in combination with a FABEKUN® Junction ILA.

The standard version

The standard version of the component is available in the nominal diameters DN/OD 160, DN/OD 200 and DN/OD 250, and is suitable for DN 1000, 1200 and 1500 concrete chambers. The Internal Backdrop is impressive in many ways, from its minimal space requirements to its quick installation. The component is screwed against the chamber wall from the inside.

For thick walls

When combined with a DN/OD 160 FABEKUN® Junction ILA, the component is suitable for retrofitting in chamber structures with especially thick walls. A 200 mm hole is drilled, then the pre-assembled ILA/ FABEKUN® Junction combination is pushed out of the chamber from the inside, then finally screwed in so that it is a tight fit.



*FABEKUN® Junction ILA
for Internal Backdrop*



*Funke Plastic Chamber DN 1000
with Internal Backdrop*

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