

Products and solutions



speed•pipe® system
Flexible quality solutions
for Fibre-to-the-X



Split duct system
Safe repairing of
occupied cable ducts



Common fittings
Products concerning
cable and pipe



gabocom is your reliable partner

From technical sales and distribution in Niederwinkling via the field service in all German Federal States to a European-wide network of partners: gabocom is always at close quarters.

Visit www.gabocom.com and you'll find your personal contact person. He will clarify the technical prerequisites of your duct system together with you and will develop solutions that are optimally matched to your demands and objectives.

Niederwinkling is located in the district of Straubing-Bogen and the distance to Munich Airport is 125 km (78 miles).

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Welcome to the market leader for state-of-the-art micro duct systems

Dear gabocom customers and partners

Cordial thanks for your interest in our products and systems. Before familiarizing you with these products we would like to introduce our company and especially its particular strengths.

More than 40 years ago gabocom has specialized in the specific demands of companies from the telecommunication and electrical engineering sector. Since 2002 we have been developing and producing innovative micro duct systems in Lower Bavaria. Thus we significantly contribute a great deal to the effectiveness and reliability of latest networks. Telecommunication companies and network providers from all over Europe take the decision to choose gabocom for good reason: Because their investment in our products and our system pays off within a very short time. They do not only save costs for installation, they even reduce downtimes and maintenance expenses.

Research and innovation, quality and safety, training and service, continuity and team spirit – these are the fundamental pillars of our company. On the following pages you are informed about how to benefit from this all on the whole line.

We are looking forward to a very successful business.



Markus Karl
on behalf of the management of the entire company



gabocom has much to offer for customers and partners

Service & Consultation

- Europe-wide sales network allows on-site support
- Internal trainings and seminars impart valuable know-how
- Order processing, production and dispatch offer flexibility

Quality & Safety

- First-class products ensure stability and network coverage
- Quality management is certified according to DIN EN ISO 9001
- High-quality raw materials guarantee durability and performance



Research & Innovation

- Technological competence is based on specialization for many years
- Unique speed•pipe® system sets state-of-the-art standards
- Proximity to partners allows product innovations meeting all demands

Continuity & Team spirit

- All company sectors are united in Niederwinkling
- Decisions are made on short, collegial ways
- gabocom is proven as great employer by low fluctuation

Several good reasons speak for gabocom

Leading in all respects



An innovative company with strong positioning

- gabocom does not only deliver ducts, but complete systems
- All products are repeatedly examined during production
- One location allows short and flexible decision processes
- Your requests constitute the scale of our planning and developments
- Technical trainings also are performed in your areas
- Due to our network of partners we can assist you on-site

A product system meeting all demands

- All fittings are divisible, reusable, gas- and water-tight
- The single system components are compatible among each other
- Each application can easily be realized with gabocom products
- High-quality raw materials guarantee a long lifetime
- All ducts are UV-resistant for three years South European climate

Our specialization in the market pays off

Three product sections for all needs

I. The speed•pipe® system

Flexible quality solutions for Fibre-to-the-X

Both for the development and for the expansion of modern fibre optic networks: There is no way any more of getting past speed•pipe®. The innovative system does not only offer more safety and flexibility, but also saves costs for installation and maintenance. A rewarding decision for highest quality.



II. The split duct system

Safe repairing of occupied cable ducts

In the event of damage every minute counts. By means of the split duct system a gas- and water-tight repair can be carried out without any interruption of the network: rapid, cost-effective and reliable. Split ducts, connectors, branches and mounting equipment fulfill all route requirements.



III. Common fittings

Products concerning cable and duct

With its gas-, water- and dirt-tight accessories gabocom offers a variety of highest quality that meets all demands. All parts are manufactured out of durable raw materials; they can be individually combined and have frequently proven in practice at Telekom companies and network providers all over Europe.



speed•pipe® system: The quickest way of saving costs

High demands are made on modern fibre optic networks: They must be powerful and reliable, they should grow with new challenges and at the same time they should also remain in budget. speed•pipe® is the innovative micro duct system that meets all these factors. It provides a basis for a demand-oriented and cost-effective roll-out for FTTN, FTTC, FTTH or backhaul-solutions in the mobile telephony segment. To ensure the flexibility for duct-in-duct and direct burying as well as on the last mile, all ducts, sealing elements and fittings of the modular system optionally can be combined among each other and can be expanded.

The percentage of the speed•pipe® system of the average customer connection costs is very low. The complete solution is very profitable if you consider the additional saving potentials on the following pages.

Furthermore the speed•pipe® system offers the best long term and efficient solution for your broadband project:

- Comprehensive product testings during production ensure a constantly high level of quality.
- Therefore our complete range is extremely low-maintenance when properly installed.
- The assembly of the fittings is quick, simple and time-effective.

The speed•pipe® system

The five elements of the speed•pipe® system can be optionally combined among each other as with a modular concept. It contains all ducts, sealing elements and fittings that are necessary for the installation and expansion of state-of-the-art communication networks.

1. speed•pipe®

- Applicable for duct-in-duct, direct burying and inhouse
- Intense colours enable a clear distinction
- Transparent inspection windows show the occupation with cables
- Optimized sliding ribs improve the result of the blowing in process
- High blowing in distances are realized without any problems

2. speed•pipe® bundles

- Bundles already are occupied with eight speed•pipe®
- Empty and occupied cable duct networks can be used efficiently
- High costs for civil engineering can completely be saved respectively are significantly reduced
- Temperature-affected modifications in length are avoided
- High product quality guarantees a long lifetime

3. speed•pipe® bundles ground

- For open trenches, ploughing in, hydraulic circulation drilling, micro-trenching and duct-in-duct
- No special tools are necessary for branching off and opening
- Existing and new duct networks are combinable in a pressure-tight way
- Sealing between outer jacket and speed•pipe® is possible
- Optimized coils facilitate the transport to the place of installation

4. speed•pipe® fittings

- The slim design suits for all applications
- All parts are gas- and water-tight up to 0.5 bar under guarantee
- They are directly buriable, tensile, divisible and reusable
- The installation is simple and possible without any special tools
- The duct system is optimally protected against contamination

5. House lead-ins

- Buildings comfortably can be connected to the fibre optic network
- Reasoned design saves time in installation and thereby it saves costs
- Cellar connections can be realized gas- and water-tight
- Design solutions in facades ensure a homely atmosphere
- Sleeves allow the comfortable infeed into masonry

Time is money. With the speed•pipe® system you save both.

Convincing facts speak for speed•pipe®

- **Prevention of costs for civil engineering:**
Existing ducts can be efficiently used in the expansion of FTTH and FTTC/N – this way, depending on surface and method, costs for civil engineering from 50 up to 200 € per meter are saved.
- **Lower initial investments:**
With the duct-in-duct technology fibre optic cables can be installed meeting all demands – thus no dark-fibre is necessary and the initial costs are considerably lower.
- **Much less material costs:**
The speed•pipe® system ensures the branching off without any manholes – this way the installation and maintenance costs decrease and the material costs are reduced by up to 85 percent.
- **Satisfied customers all over Europe:**
speed•pipe® is a system that is approved and used by Telekom companies all over Europe – together we develop solutions and innovations for the future.

65% cost saving due to simple branching off



In contrast to the conventional multi-duct with the speed•pipe® bundle SRV 50 it is possible to branch off single speed•pipe® ground in a quick and easy way. Only one split duct branch is necessary for reaching the perfect result in just one third of the time. Thus the costs for material and installation are reduced by 65 percent, as the following calculation demonstrates:

gabocom speed•pipe® bundle SRV 50:

Material	Need	Price	Total price
HRMA 110/50-30°	1	28.15 €/pc	28.15 €/pc
Duration of installation	15 min.	0.60 €/min.	9.00 €
Total costs:			37.15 €

Conventional design:

Material	Need	Price	Total price
KKHR 110×2000	2	22.00 €/pc	44.00 €/m
HRMA 110/50-30°	1	28.15 €/pc	28.15 €/pc
KKHRM 110	2	8.80 €/pc	17.60 €/pc
Duration of installation	45 min.	0.60 €/min.	27.00 €
Total costs:			116.75 €

Your saving:
79.60 €

50% less costs for material and installation

With the speed•pipe® bundle SRV 50 empty and occupied cable duct routes can be optimally used – flexible, meeting the demands and particularly time- and cost-saving. Because every single bundle is already equipped with eight speed•pipe®. For reaching the same capacity with common multi-ducts, first all ducts must be equipped with speed•pipe®. The calculation shows, that this way 50 percent of material and installation costs can be saved:



gabocom speed•pipe® bundle SRV 50:

Material	Need	Price	Total price
SRV 50 / 8 × 10	2	2.60 €/m	5.20 €/m
Total costs:			5.20 €/m

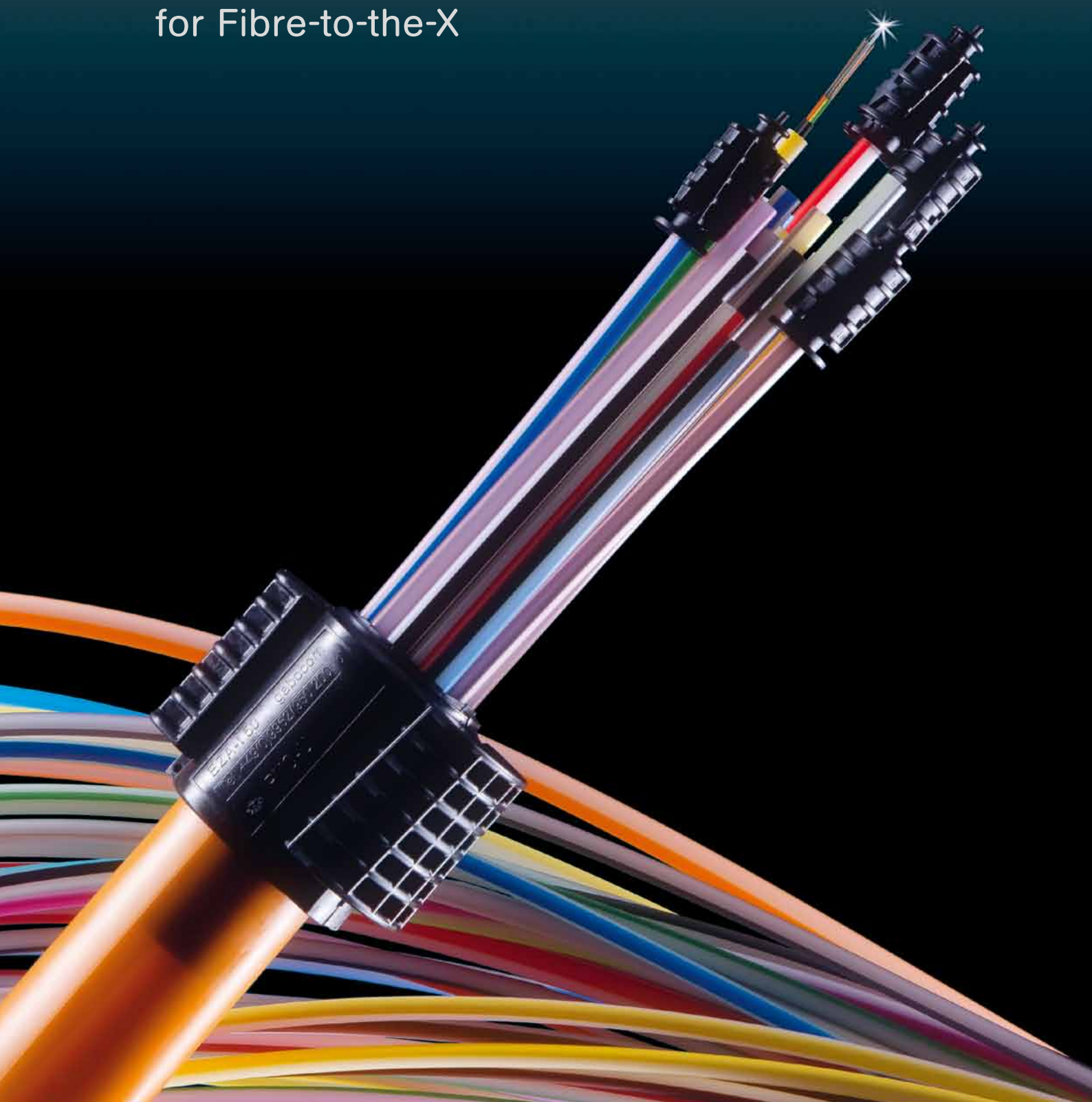
Conventional design:

Material	Need	Price	Total price
Multi-duct (MR 4)	1	2.98 €/m	2.98 €/m
speed•pipe® 10 × 1.0	16	0.20 €/m	3.20 €/m
Blowing in speed•pipe®	4	1.20 €/m	4.80 €/m
Total costs:			10.98 €/m

Your saving:
5.78 €/m

speed•pipe[®] system

Flexible quality solutions
for Fibre-to-the-X



speed•pipe[®] system

speed•pipe[®]

High-end quality for modern fibre optic networks

1

speed•pipe[®] bundles

Flexible use of existing cable ducts

2

speed•pipe[®] bundles ground

Maximum flexibility for FTTx networks

3

speed•pipe[®] fittings

Multi-compatible top-quality products for all demands

4

House lead-ins

Easy to install elements for the last mile

5

Introduction: Quality solutions for Fibre-to-the-X, pictures of practical experience

speed•pipe®

1

Pipe-in-pipe

1.1

Ground

1.2

Indoor

1.3



speed•pipe® bundles

2



speed•pipe® bundles ground

3

Customer connection network (FTTH / FTTB) 3.1

Access network (FTTN / FTTC) 3.2



speed•pipe® fittings

4

Sealing and fixing elements

4.1

Connecting elements

4.2

Branch supports

4.3

Protective elements

4.4

Manhole insertions

4.5

Tools

4.6

Indoor fittings

4.7



House lead-ins

5

Application in the cellar

5.1

Application above ground

5.2

Sleeves

5.3



speed•pipe® system: Europe's No. 1 for up-to-date fibre optic networks

With the speed•pipe® system gabocom has established new standards and has successfully laid claim to be the leading manufacturer in the international telecommunication market. The innovative modular system impresses due to highest quality, user-friendly handling and considerable cost savings. Therefore the speed•pipe® system is the No. 1 all over Europe, concerning the realisation of Fibre-to-the-X projects meeting the needs of the customers.

The complete speed•pipe® system includes an extensive range of patented micro ducts, sealing elements and fittings. These products consist of durable materials, which can individually be combined and extended if necessary. Thus they offer a maximum flexibility in case of direct burial and pipe-in-pipe, in new or already existing networks and on the last mile. No matter if FTTN, FTTC, FTTH or backhaul solutions in the sector of mobile telecommunications: The speed•pipe® system fulfils the highest demands in any case and allows significant cost and time savings.

According to the Low-Voltage Directive of the EU (2014/35/EU) the speed•pipe® and the speed•pipe® in the bundles are entirely tested according to EN 61386-24 and are therefore CE marked.

On the following pages we are introducing our complete speed•pipe® system. With your personal contact person you can assemble a solution that exactly meets your requirements.

The advantages of the speed•pipe® system at a glance:

Elaborated technology saves time and costs

- The gabocom products offer significant saving potentials compared with the conventional construction method.
- For the customer connection considerably less costs arise due to the speed•pipe® system.
- The initial investments are lower as fibre optic cables can be installed over large distances meeting all demands.
- Costs for civil engineering can be avoided due to the efficient utilisation of existing pipe ways with pipe-in-pipe technology.

Planning and handling are convincingly simple

- Bottlenecks in the core area can be bypassed by means of the speed•pipe® system.
- Branching off to the customer or distribution device is carried out without any manhole.
- Existing duct networks can flexibly be extended with the gabocom products.
- For a clear distinction the speed•pipe® have intense colours and through transparent inspection windows they show the occupation with cables.

Patented fittings offer safety and efficiency

- All fittings are divisible, gas- and water-tight, tensile and reusable.
- The assembly of the fittings is carried out simply and quickly without any special tools.

Occupation of existing PE-HD ducts with speed•pipe®



speed•pipe® are
blown into an existing
PE-HD duct.



The speed•pipe® are
inserted into the
SuperJet just in a few
easy steps and
subsequently are
sealed at their ends.

Utilisation of existing PVC ducts and remaining cross sections with the speed•pipe® bundle SRV



A speed•pipe® bundle SRV 50 / 8×10 is pulled into an existing PVC duct 110.



Here the PVC duct 110 is occupied with a second speed•pipe® bundle SRV 50 / 8×10.



A speed•pipe® bundle ground is ploughed in.

Professional burial of the speed•pipe® bundle ground SRV-G



That is how the laying of the speed•pipe® bundle ground in an open trench looks like.



This picture illustrates a speed•pipe® bundle ground that was laid in a vat next to a railroad track.

Utilisation of existing PE-HD ducts for the customer connection



By means of the cutting device for bundles and the pulling heads (equipment manufacturer Vetter, Lottstetten, Germany) the speed•pipe® ground are pulled into an existing PE-HD duct.

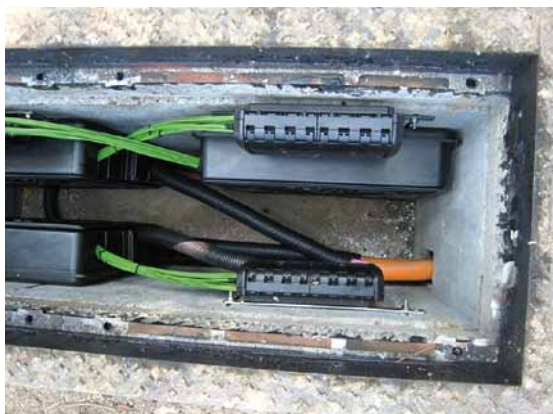


Some lubricant is previously applied for facilitating the pulling in process of the speed•pipe® ground.



A micro cable is blown into the speed•pipe® ground.

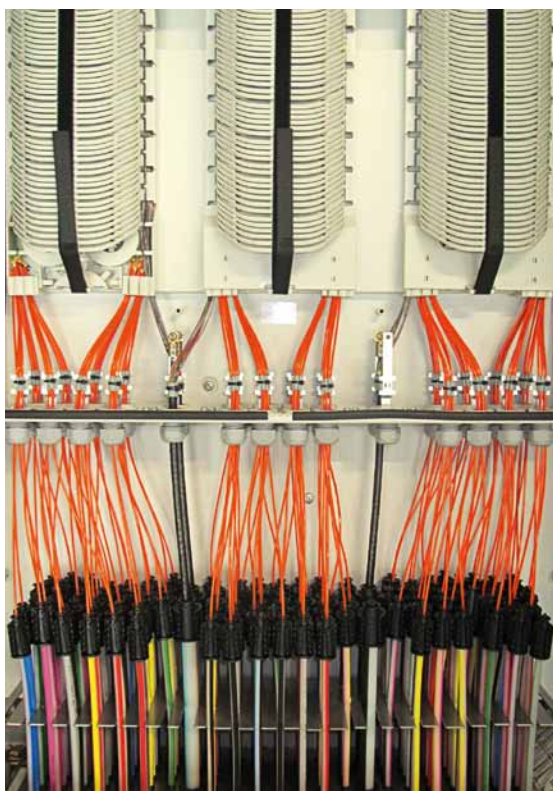
Examples for occupancy of manholes with speed•pipe[®]



In all three cases overlengths of cables or speed•pipe[®] are deposited for the connection of the sleeve.



Examples for occupancy of distribution boxes with speed•pipe®



Special sealing elements allow the gas- and water-tight connection of the speed•pipe® in the distribution box.

The modular system for Fibre-to-the-X

The gabocom speed•pipe® ensure highest flexibility when using existing duct systems, constructing new fibre optic networks and laying inside buildings. Due to the cost-saving design and the high-end product quality latest broadband networks are developed.



1.1 Pipe-in-pipe

With the speed•pipe® pipe-in-pipe solution gabocom facilitates a flexible, cost-saving and maximum utilisation of capacity of empty and occupied ducts.



1.2 Ground

The speed•pipe® ground are directly buried and assure highest flexibility when constructing fibre optic networks.



1.3 Indoor

The speed•pipe® indoor especially were developed by gabocom for the application inside buildings, in drains or tunnels.



Duct occupied with speed•pipe®



Duct occupied with speed•pipe® and cable

Product advantages

- The speed•pipe® can be blown into empty PE-HD ducts or PE-HD ducts occupied with cables over long distances. They are optimally applicable for blowing in fibre optic cables over long distances.
- The speed•pipe® consist of durable PE-HD and the inside is furnished with optimised slide ribs.
- They are UV-resistant for 3 years South-European climate.
- The high-quality material PE-HD allows the laying beginning at minus 10°C. For temperatures sub-zero we recommend to store the spools in heated halls during 12 and 24 hours before the installation. Ideal tensile forces are reached in the temperature range between 5°C and 20°C.
- They have powerful colours for the clear differentiation and show the cable occupation through transparent inspection windows.
- They are delivered on a non-returnable wooden spool which is optimised for transport and installation.
- Using the divisible sealing element EZA-t the speed•pipe® are fixed against elongations due to temperature changings and the space between the PE-HD duct and the single speed•pipe® as well as cables is sealed against gas and water up to 0.5 bar.

Fittings

• Transparent permanent connectors	4.2.1	• Divisible sealing elements 7 - 14	4.1.1
• Transparent permanent reducers	4.2.2	• Divisible sealing elements 32 - 63	4.1.5
• Divisible connectors	4.2.3	• Cable box	4.4.1
• Divisible connectors with gas-stop	4.1.2	• Protective pipes	4.4.2
• Transparent permanent end plugs	4.1.3	• Tools	4.6

Ordering data

Term	Colour	D×s (mm)	Length (m)	Weight (kg / m)	Pressure	Spool D×s (mm)	Weight * (kg)
speed•pipe® 7×0.75		7×0.75	5000	ca. 0.016	PN 10	1200×370	ca. 110
	red	Item no.	00601		grey	Item no.	00616
	green	Item no.	00604		orange	Item no.	00619
	blue	Item no.	00607		black	Item no.	00848
	yellow	Item no.	00610		brown	Item no.	00851
	white	Item no.	00613		violet	Item no.	00854
Recommended cable diameter: 1.8-4.0 mm							
speed•pipe® 8×1.0		8×1.0	4000	ca. 0.020	PN 10	1200×370	ca. 110
	red	Item no.	01663		grey	Item no.	01668
	green	Item no.	01664		orange	Item no.	01669
	blue	Item no.	01665		black	Item no.	01670
	yellow	Item no.	01666		brown	Item no.	01671
	white	Item no.	01667		violet	Item no.	01673
Recommended cable diameter: 1.8-4.6 mm							
speed•pipe® 10×1.0		10×1.0	2500	ca. 0.030	PN 10	1200×370	ca. 105
	red	Item no.	00647		white	Item no.	00649
	green	Item no.	00643		grey	Item no.	00599
	blue	Item no.	00594		orange	Item no.	00645
	yellow	Item no.	00596				
Recommended cable diameter: 2.5-6.5 mm							
speed•pipe® 12×1.1		12×1.1	2000	ca. 0.033	PN 10	1200×370	ca. 100
	red	Item no.	01401		yellow	Item no.	01403
	green	Item no.	01400		white	Item no.	01404
	blue	Item no.	01402				
Recommended cable diameter: 3.0-8.0 mm							
speed•pipe® 14×1.3		14×1.3	1500	ca. 0.049	PN 10	1200×370	ca. 102
	red	Item no.	01020		yellow	Item no.	01023
	green	Item no.	01021		white	Item no.	01024
	blue	Item no.	01022				
Recommended cable diameter: 4.0-9.5 mm							
Additional colours available on request							
* Total weight including spool							



speed•pipe® ground for direct burying

Product advantages

- The gabocom speed•pipe® ground are used for branching off existing pipe ways and for connecting customers' or switch points by direct burying.
- They are optimally applicable for blowing in fibre optic cables over long distances.
- The speed•pipe® consist of durable PE-HD and the inside is furnished with optimised slide ribs.
- Transparent inspection windows show the occupation with cables.
- Due to powerful colours the different dimensions are differentiated.
- The gabocom speed•pipe® ground have a higher vertex pressure than a PE-HD duct 50×4.6.
- They are delivered on a non-returnable wooden spool which is optimised for transport and installation.

Fittings

• Transparent permanent connectors	4.2.1	• Marking labels with pipe plug	4.1.4
• Transparent permanent reducers	4.2.2	• Branch supports	4.3
• Divisible connectors	4.2.3	• Cable box	4.4.1
• Divisible connectors with gas-stop	4.1.2	• Protective pipes	4.4.2
• Transparent permanent end plugs	4.1.3	• speed•pipe® box	4.4.3
• Divisible sealing elements 7-20	4.1.1	• Tools	4.6

Ordering data

Term	Colour	D×s (mm)	Length (m)	Weight (kg / m)	Pres- sure	Spool D×s (mm)	Weight * (kg)	Item no.
speed•pipe® ground 7×1.5	orange	7×1.5	1250	ca. 0.030	PN 16	700×370	ca. 50	02223
Recommended cable diameter: 1.0 - 2.7 mm								
speed•pipe® ground 10×2.0	pink	10×2.0	500	ca. 0.050	PN 16	700×370	ca. 40	01705
	pink	10×2.0	2500	ca. 0.050	PN 16	1200×370	ca. 155	01340
Recommended cable diameter: 1.8 - 4.6 mm								
speed•pipe® ground 12×2.0	yellow-green	12×2.0	2000	ca. 0.060	PN 16	1200×370	ca. 150	02175
Recommended cable diameter: 3.0 - 6.8 mm								
speed•pipe® ground 14×2.0	orange	14×2.0	1500	ca. 0.074	PN 16	1200×370	ca. 140	04134
Recommended cable diameter: 3.0 - 8.7 mm								
speed•pipe® ground 16×2.0	turquoise	16×2.0	1200	ca. 0.084	PN 10	1200×370	ca. 130	42302
Recommended cable diameter: 6.5 - 10.4 mm								
speed•pipe® ground 20×2.5	pink	20×2.0	1400	ca. 0.132	PN 10	1200×700	ca. 225	01349
Recommended cable diameter: 8.0 - 12.5 mm								
* Total weight including spool								



speed•pipe® indoor for the application inside buildings

Product advantages

- The speed•pipe® indoor were especially developed by gabocom for the application inside buildings.
- In respect of the Low-Voltage Directive of the EU (2014/35/EU) the speed•pipe® indoor system is comprehensively tested according to EN 61386-22, e.g. fire test based on legal security objectives, installation and laying regulations, compatibility with firewalls.
- The speed•pipe® indoor are not flame spreading and are conform to the absence of halogens according to EN 60684-2 and to low smoke according to EN 61034-2.
- For the application in drains or tunnels the version speed•pipe® indoor with reinforced wall thickness additionally offers an increased mechanical strength.
- Both versions are furnished with optimised slide ribs and are therefore optimally applicable for blowing in fiber units, micro and mini cables.
- The speed•pipe® indoor are delivered on a non-returnable wooden spool or plastic spool (box) which is optimised for transport and installation.

Fittings

• Indoor connectors	4.7.4	• Divisible indoor sealing elements	4.7.1
• Divisible indoor connectors	4.7.5	• Indoor bends	4.7.6
• Divisible indoor connectors with gas-stop	4.7.2	• Indoor marking labels with pipe plug	4.7.7
• Indoor end plugs	4.7.3	• Tools	4.6

Ordering data

Term	Colour	D×s (mm)	Length (m)	Weight (kg / m)	Pres- sure	Spool D×s (mm)	Weight * (kg)	Item no.
speed•pipe® indoor 4×0.75	white	4×0.75	600	ca. 0.008	PN 16	340×340×340 (box)	ca. 9	03510
			1600	ca. 0.008	PN 16	600×360	ca. 19	03500
speed•pipe® indoor 5×0.75	white	5×0.75	400	ca. 0.011	PN 16	340×340×340 (box)	ca. 8	03511
			1000	ca. 0.011	PN 16	600×360	ca. 17	03501
speed•pipe® indoor 7×1.5	white	7×1.5	250	ca. 0.030	PN 16	340×340×340 (box)	ca. 12	03513
			500	ca. 0.030	PN 16	600×360	ca. 21	03502
			1250	ca. 0.030	PN 16	700×370	ca. 51	03503
speed•pipe® indoor 10×1.0	white	10×1.0	500	ca. 0.030	PN 10	700×370	ca. 28	03504
			2500	ca. 0.030	PN 10	1200×370	ca. 103	03505
speed•pipe® indoor 10×2.0	white	10×2.0	2500	ca. 0.053	PN 16	1200×370	ca. 165	03525
speed•pipe® indoor 12×2.0	white	12×2.0	350	ca. 0.066	PN 16	700×370	ca. 36	03506
			2000	ca. 0.066	PN 16	1200×370	ca. 160	03507
speed•pipe® indoor 14×2.0	white	14×2.0	250	ca. 0.076	PN 16	700×370	ca. 32	03508
			1500	ca. 0.076	PN 16	1200×370	ca. 142	03509
Additional dimensions on request								
* Total weight including spool								

speed•pipe® bundles (pipe-in-pipe)

SRV / D-SRV 50 / 8×10



Cable duct 110 occupied with one speed•pipe® bundle and one cable



Cable duct 110 occupied with two speed•pipe® bundles



Cable duct 110 occupied with one speed•pipe® bundle

Fittings

- | | | | |
|--------------------------------------|-------|---------------------------------|-------|
| • Transparent permanent connectors | 4.2.1 | • Divisible sealing element 50 | 4.1.5 |
| • Transparent permanent reducers | 4.2.2 | • Stiffeners | 4.1.6 |
| • Divisible connectors | 4.2.3 | • Marking labels with pipe plug | 4.1.4 |
| • Divisible connectors with gas-stop | 4.1.2 | • Cable box | 4.4.1 |
| • Transparent permanent end plugs | 4.1.3 | • Protective pipes | 4.4.2 |
| • Divisible sealing elements 10 | 4.1.1 | • Tools | 4.6 |

Product advantages

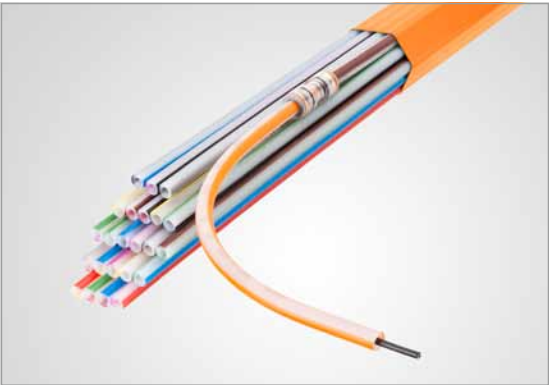
- The speed•pipe® bundle SRV and the speed•pipe® double bundle D-SRV enable the efficient use of empty ducts and ducts occupied with cables in the access network whereby high costs for civil engineering and the rebuilding of surfaces are saved.
- The significant cost saving especially appears in comparison to the occupation with a multi duct MR4.
- The speed•pipe® bundle SRV 50 / 8×10 consists of 8 speed•pipe® 10×1.0 which are loosely bundled by a flexible jacket pipe.
- By means of a cable pull grip on the jacket pipe the SRV can be pulled into a cable duct 110. At the same time it is possible to pull one or two SRV into an empty cable duct 110 or to pull one SRV into a cable duct 110 which is already occupied with a cable of maximum 55 mm. In this way the remaining cross section can optimally be used.
- High-quality PE-HD ensures highest product quality and a long life cycle.
- Fibre optic cables can be blown into the speed•pipe® over long distances.
- The branching off is effected in an easy and cost saving way.
- The SRV can be sealed against gas and water up to 0.5 bar and fixed against elongations due to temperature changes by using the outside stiffener SHa or the double outside stiffener DSHa and the ADE / TDUX (Tyco).
- The gas- and water-tight sealing of the space between the jacket pipe and the single speed•pipe® up to 0.5 bar is effected by using the inside stiffener SHi and the divisible sealing element EZA-t.

Ordering data

Term	Jacket pipe		Length		speed•pipe®		Weight	Weight *	Item no.
	Colour	D×s (mm)	(m)	Pcs.	D×s (mm)	(kg / m)	(kg)		
SRV 50 / 8×10	black	50×0.5	2300	8	10×1.0	ca. 0.33	ca. 1100		03187
	orange-black	50×0.5	2300	8	10×1.0	ca. 0.33	ca. 1100		04279
Delivery on a non-returnable wooden spool: 2400×1200 mm									
D-SRV 50 / 8×10	black and orange-black	50×0.5	1100 per SRV	8 per SRV	10×1.0	ca. 0.33 per SRV	ca. 1150		42529
Delivery on a non-returnable double wooden spool: 2400×1200 mm									
* Total weight including spool									

Patent remedy for direct burying and for the use of existing ducts

With the speed•pipe® bundles ground gabocom offers maximum flexibility for direct burying and the use of existing duct networks. Highest product quality ensures latest broadband networks.



3.1 Connection network (FTTH / FTTB)

The speed•pipe® bundles ground for customer connection networks (FTTH / FTTB) enable the development of flexible fibre optic networks with maximum capacity utilisation.



3.2 Access network (FTTN / FTTC)

The speed•pipe® bundles ground ensure highest flexibility for the structure of latest access networks (FTTN / FTTC).

Direct burying and use of existing ducts

The direct burying speed•pipe® bundles ground for customer connection networks (FTTH / FTTB) enable the development of flexible fibre optic networks with maximum capacity utilisation. The speed•pipe® bundles ground offer maximum flexibility for direct burying and the use of existing duct networks.



SRV-G tc for direct burying

3.1.1



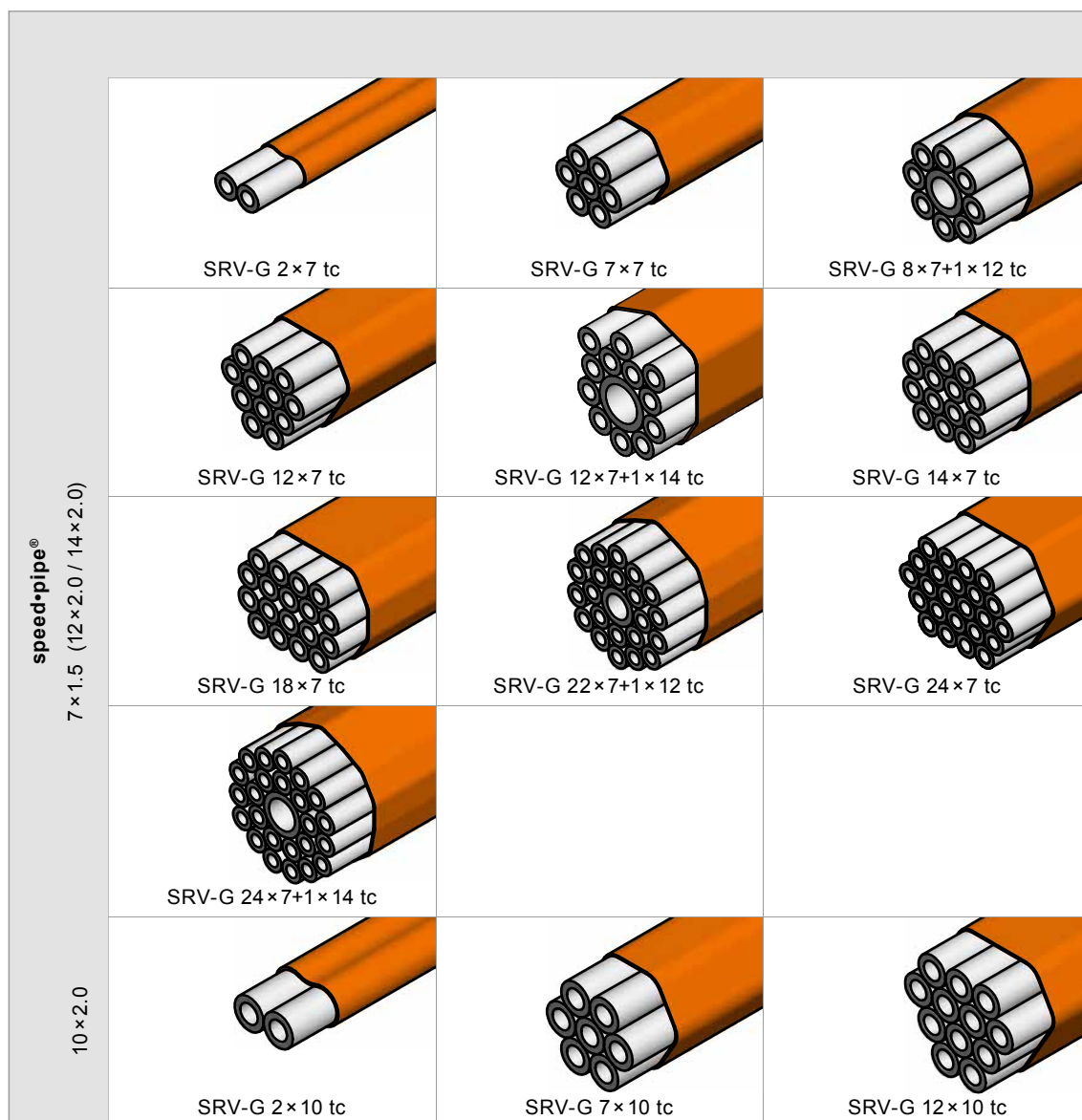
SRV-G for pulling into existing ducts with cutting unit

3.1.2



SRV-G for pulling into existing ducts

3.1.3



Overview of the direct burying SRV-G tc

Product advantages

- With the speed•pipe® bundles ground SRV-G tc gabocom allows flexible and latest fibre optic networks for the customer connection network (FTTH / FTTB).
- The bundles consist of varicoloured speed•pipe® ground which are firmly bundled by a jacket pipe.
- High-quality PE-HD ensures highest product quality and a long life cycle.
- The speed•pipe® bundles ground tc are applicable for all laying procedures.
- Fibre optic cables can be blown into the speed•pipe® ground over long distances.
- The easy and time saving branching off is effected without any special tools.
- The gas- and water-tight sealing of the space between the jacket pipe and the single speed•pipe® ground up to 0.5 bar is effected by using the divisible sealing element EZA-t.

Fittings

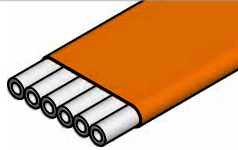
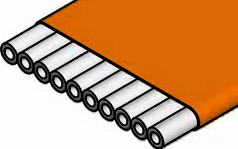




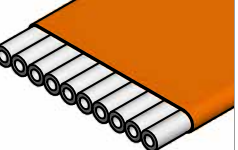



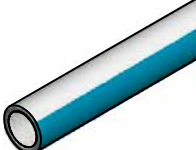
• Transparent permanent connectors	4.2.1	• Branch supports	4.3
• Divisible connectors	4.2.3	• Cable box	4.4.1
• Divisible connectors with gas-stop	4.1.2	• Protective pipes	4.4.2
• Transparent permanent end plugs	4.1.3	• speed•pipe® box	4.4.3
• Divisible sealing elements 7 - 14	4.1.1	• Manhole insertions	4.5
• Divisible sealing elements	4.1.5	• Tools	4.6
• Marking labels with pipe plug	4.1.4		

Ordering data

Term	Length	speed•pipe® ground		Weight	Non-returnable wooden spool	Weight *	Item no.
	(m)	Pcs.	D×s (mm)	(kg / m)	D×s (mm)	(kg)	
SRV-G 2×7 tc	400	2	7×1.5	ca. 0.08	700×370	ca. 50	01445
SRV-G 7×7 tc	4000	7	7×1.5	ca. 0.25	2400×1200	ca. 1325	01283
SRV-G 8×7 + 1×12 tc	4000	8	7×1.5	ca. 0.34	2400×1200	ca. 1685	01289
		1	12×2.0				
SRV-G 12×7 tc	4000	12	7×1.5	ca. 0.36	2400×1200	ca. 1765	01238
SRV-G 12×7 + 1×14 tc	2650	12	7×1.5	ca. 0.46	2400×1200	ca. 1600	01734
		1	14×2.0				
SRV-G 14×7 tc	2650	14	7×1.5	ca. 0.45	2400×1200	ca. 1520	01285
SRV-G 18×7 tc	2650	18	7×1.5	ca. 0.55	2400×1200	ca. 1785	01242
SRV-G 22×7 + 1×12 tc	1950	22	7×1.5	ca. 0.72	2400×1200	ca. 1730	01291
		1	12×2.0				
SRV-G 24×7 tc	1950	24	7×1.5	ca. 0.71	2400×1200	ca. 1710	01287
SRV-G 24×7 + 1×14 tc	1570	24	7×1.5	ca. 0.79	2400×1200	ca. 1570	01294
		1	14×2.0				
SRV-G 2×10 tc	900	2	10×2.0	ca. 0.14	1200×370	ca. 160	01443
SRV-G 7×10 tc	3650	7	10×2.0	ca. 0.41	2400×1200	ca. 1760	01756
SRV-G 12×10 tc	1800	12	10×2.0	ca. 0.67	2400×1200	ca. 1535	01269
Jacket pipe colour: orange							
* Total weight including spool							

Available on request:

- Additional jacket pipe colours
- speed•pipe® bundles SRV-G tc in gabo and DIN colour code
- speed•pipe® double bundles ground D-SRV-G tc
- SRV-G tc as anti-rodent version
- SRV-G tc with locating wire

		speed•pipe® ground	
		7×1.5	7×1.5+1 speed•pipe®
PE-HD duct	Ø 32×2.9 (2.0)	 SRV-G 32 / 6×7 *	
	Ø 40×3.7 (2.5)	 SRV-G 50 / 10×7	 SRV-G 40 / 8×7  14×2.0 (12×2.0)
	Ø 50×4.6 (3.0)	 SRV-G 40 / 14×7	 SRV-G 50 / 18×7  SRV-G 50 / 10×7  14×2.0 (12×2.0)
	Ø 63×5.8 (4.7)	 SRV-G 50 / 24×7	 SRV-G 50 / 24×7  16×2.0 (14×2.0)

Overview of the SRV-G for pulling into existing ducts with cutting unit

* after technical clarification

Product advantages

- The speed•pipe® bundles ground SRV-G consist of varicoloured speed•pipe® ground which are bundled by a flexible jacket pipe.
- The speed•pipe® ground out of the speed•pipe® bundle ground can be pulled into existing PE-HD ducts (32, 40, 50, 63) for ensuring maximum occupation. Thereby the single speed•pipe® ground are pulled in by means of a pulling head (equipment manufacturer Vetter, Lottstetten, Germany). By using a cutting unit for bundles (equipment manufacturer Vetter, Lottstetten, Germany) the jacket pipe is cut before reaching the PE-HD duct and is subsequently recycled.
- Due to the permissible tension of the speed•pipe® ground the reachable pulling length is limited. But it is improved by rotating the spool and by using lubricants. In practice lengths from 300 m up to 600 m are reached. The maximum number of speed•pipe® ground depends on the duct dimension and the possible combination with larger speed•pipe® ground.
- High-quality PE-HD ensures highest product quality and a long life cycle.
- Fibre optic cables can be blown into the speed•pipe® ground over long distances.
- The fixing of the speed•pipe® ground against elongations due to temperature changes and the gas- and water-tight sealing of the space between the PE-HD duct and the single speed•pipe® ground up to 0.5 bar is effected by using the divisible sealing element EZA-t.



Cutting unit for bundles (equipment manufacturer Vetter, Lottstetten, Germany)



Pulling in speed•pipe® ground by means of a pulling head (equipment manufacturer Vetter, Lottstetten, Germany)

Fittings

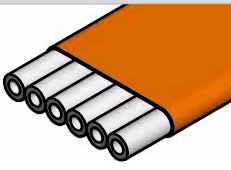
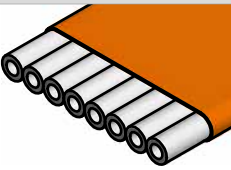
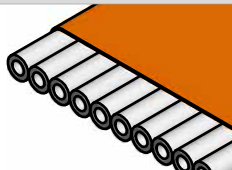

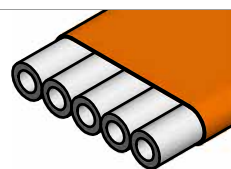
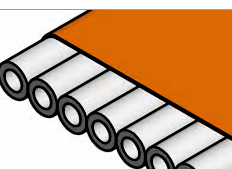
• Transparent permanent connectors	4.2.1	• Branch supports	4.3
• Divisible connectors	4.2.3	• Branches	10
• Divisible connectors with gas-stop	4.1.2	• Cable box	4.4.1
• Transparent permanent end plugs	4.1.3	• Protective pipes	4.4.2
• Divisible sealing elements 12 - 16	4.1.1	• speed•pipe® box	4.4.3
• Divisible sealing elements	4.1.5	• Manhole insertions	4.5
• Marking labels with pipe plug	4.1.4	• Tools	4.6

Ordering data

Term	Jacket pipe (orange)	Length	speed•pipe® ground		Weight	Non-returnable wooden spool	Weight *	Item no.
	D×s (mm)	(m)	Pcs.	D×s (mm)	(kg / m)	D×s (mm)	(kg)	
SRV-G 32 / 6×7**	32×0.5	3500	6	7×1.5	ca. 0.20	2400×1200	ca. 1100	03068
SRV-G 40 / 8×7	40×0.5	3500	8	7×1.5	ca. 0.26	2400×1200	ca. 1300	10326
SRV-G 50 / 10×7	50×0.5	3500	10	7×1.5	ca. 0.35	2400×1200	ca. 1600	03419
SRV-G 40 / 14×7	40×0.5	3500	14	7×1.5	ca. 0.40	2400×1200	ca. 1800	03067
SRV-G 50 / 18×7	50×0.5	1800	18	7×1.5	ca. 0.55	2400×1200	ca. 1400	02068
SRV-G 50 / 24×7	50×0.5	1800	24	7×1.5	ca. 0.70	2400×1200	ca. 1650	01672

speed•pipe® ground	Colour	D×s (mm)	Length	Weight	Pressure	Non-returnable wooden spool	Weight *	Item no.
		(mm)	(m)	(kg / m)		D×s (mm)	(kg)	
12×2.0	yellowgreen	12×2.0	2000	ca. 0.060	PN 16	1200×370	ca. 150	02175
14×2.0	orange	14×2.0	1500	ca. 0.074	PN 16	1200×370	ca. 140	04134
16×2.0	turquoise	16×2.0	1200	ca. 0.084	PN 10	1200×370	ca. 130	42302

* Total weight including spool / ** after technical clarification

	Jacket pipe Ø32	Jacket pipe Ø40	Jacket pipe Ø50
7 × 1.5			
	SRV-G 32 / 6 × 7 *	SRV-G 40 / 8 × 7	SRV-G 50 / 10 × 7
10 × 2.0			
	SRV-G 32 / 4 × 10	SRV-G 40 / 5 × 10 *	SRV-G 50 / 7 × 10

Overview of SRV-G for pulling into existing ducts

* after technical clarification

Product advantages

- The speed•pipe® bundles ground SRV-G consist of varicoloured speed•pipe® ground which are bundled by a flexible jacket pipe.
- The speed•pipe® bundles ground can be pulled into existing ducts (> 80 mm) for ensuring maximum occupation.
- Due to the permissible tension of the speed•pipe® ground the reachable pulling length is limited. But it is improved by rotating the spool and by using lubricants.
- High-quality PE-HD ensures highest product quality and a long life cycle.
- Fibre optic cables can be blown into the speed•pipe® ground over long distances.
- The SRV-G can be sealed against gas and water up to 0.5 bar and is fixed against elongations due to temperature changes by using the ADE / TDUX (Tyco).
- The fixing and gas- and water-tight sealing of the space between the jacket pipe and the single speed•pipe® ground up to 0.5 bar is effected by using the inside stiffener SHi and the divisible sealing element EZA-t.

Fittings

• Transparent permanent connectors	4.2.1	• Branch supports	4.3
• Divisible connectors	4.2.3	• Branches	10
• Divisible connectors with gas-stop	4.1.2	• Cable box	4.4.1
• Transparent permanent end plugs	4.1.3	• Protective pipes	4.4.2
• Divisible sealing elements 7 - 10	4.1.1	• speed•pipe® box	4.4.3
• Divisible sealing elements	4.1.5	• Manhole insertions	4.5
• Marking labels with pipe plug	4.1.4	• Tools	4.6

Ordering data

Term	Jacket pipe (orange)	Length	speed•pipe® ground		Weight	Non-returnable wooden spool	Weight*	Item no.
	D×s (mm)	(m)	Pcs	D×s (mm)	(kg / m)	D×s (mm)	(kg)	
SRV-G 32 / 6×7 **	32×0.5	3500	6	7×1.5	ca. 0.20	2400×1200	ca. 1100	03068
SRV-G 40 / 8×7	40×0.5	3500	8	7×1.5	ca. 0.26	2400×1200	ca. 1300	10326
SRV-G 50 / 10×7	50×0.5	3500	10	7×1.5	ca. 0.35	2400×1200	ca. 1600	03419
SRV-G 32 / 4×10	32×0.5	450	4	10×2.0	ca. 0.25	1200×370	ca. 140	06129
SRV-G 40 / 5×10 **	40×0.5	3650	5	10×2.0	ca. 0.30	2400×1200	ca. 1450	05007
SRV-G 50 / 7×10	50×0.5	3500	7	10×2.0	ca. 0.40	2400×1200	ca. 1800	05004
* Total weight including spool / ** after technical clarification								

Direct burying and use of existing ducts

The direct burying speed•pipe® bundles ground ensure highest flexibility for the structure of latest access networks (FTTN / FTTC). The speed•pipe® bundles ground offer maximum flexibility for direct burying and the use of existing duct networks.



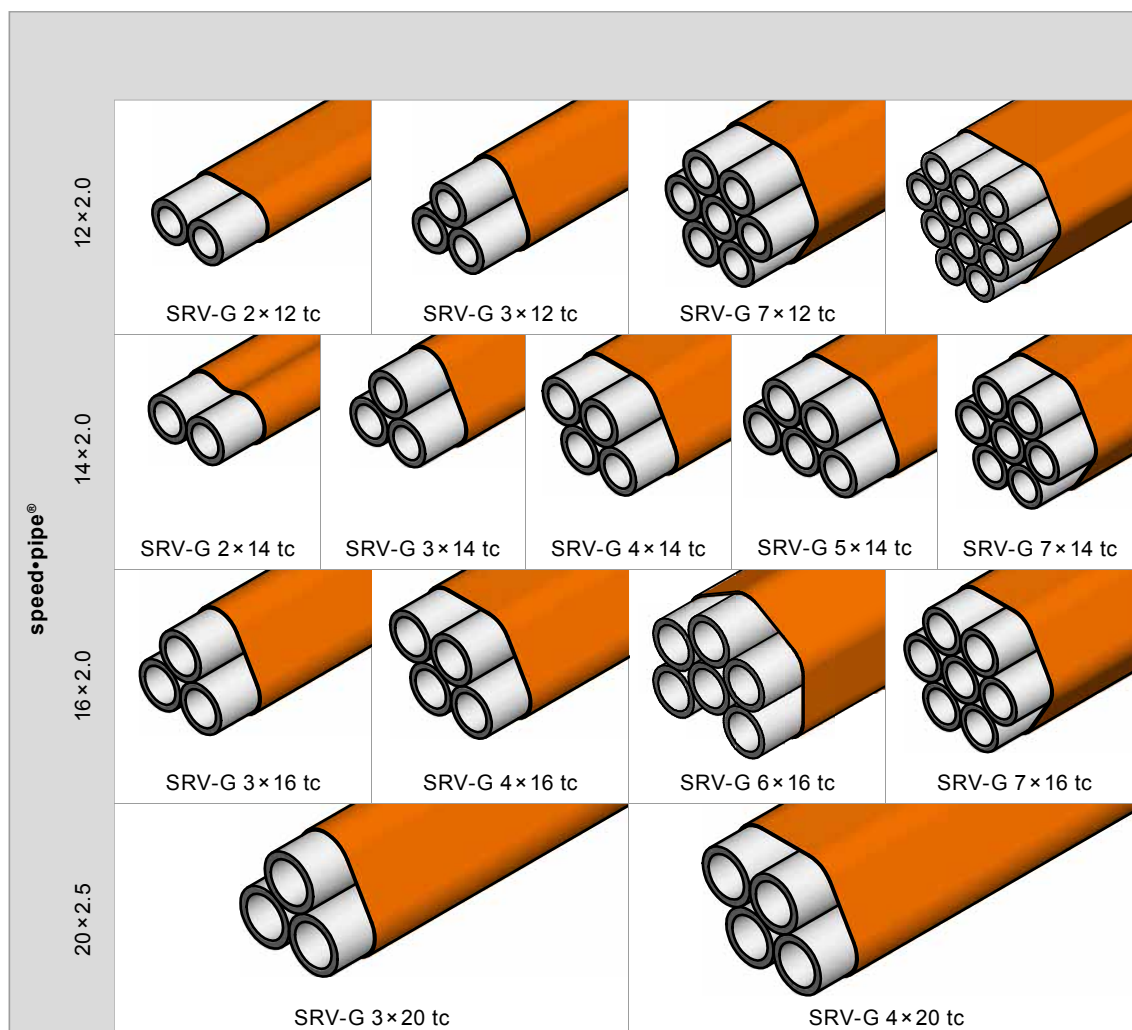
SRV-G tc for direct burying

3.2.1



SRV-G for pulling into existing ducts

3.2.2



Overview of the direct burying SRV-G tc

Product advantages

- Due to the development of the speed•pipe® bundles ground SRV-G tc gabocom allows flexible and latest broadband networks for the access network (FTTN / FTTC).
- The bundles consist of varicoloured speed•pipe® ground which are firmly bundled by a jacket pipe.
- High-quality PE-HD ensures highest product quality and a long life cycle.
- The speed•pipe® bundles ground tc are applicable for all laying procedures.
- Fibre optic cables can be blown into the speed•pipe® ground over long distances.
- The easy and time saving branching off is effected without any special tools.
- The gas- and water-tight sealing of the space between the jacket pipe and the single speed•pipe® ground up to 0.5 bar is effected by using the divisible sealing element EZA-t.

Fittings








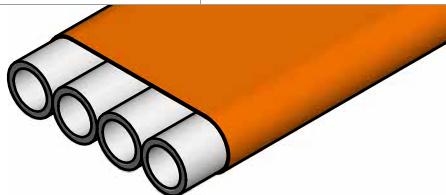
- | | | | |
|--------------------------------------|-------|---------------------------------|-------|
| • Transparent permanent connectors | 4.2.1 | • Marking labels with pipe plug | 4.1.4 |
| • Divisible connectors | 4.2.3 | • Branch supports | 4.3 |
| • Divisible connectors with gas-stop | 4.1.2 | • Cable box | 4.4.1 |
| • Transparent permanent end plugs | 4.1.3 | • Protective pipes | 4.4.2 |
| • Divisible sealing elements 7 - 14 | 4.1.1 | • Manhole insertions | 4.5 |
| • Divisible sealing elements | 4.1.5 | • Tools | 4.6 |

Ordering data

Term	Length	speed•pipe® ground		Weight	Non-returnable wooden spool	Weight *	Item no.
	(m)	Pcs.	D×s (mm)	(kg / m)	D×s (mm)	(kg)	
SRV-G 2 × 12 tc	650	2	12×2.0	ca. 0.15	1200×370	ca. 126	01613
SRV-G 3 × 12 tc	2700	3	12×2.0	ca. 0.25	2400×1200	ca. 1000	01232
SRV-G 7 × 12 tc	2400	7	12×2.0	ca. 0.56	2400×1200	ca. 1670	01296
SRV-G 12 × 12 tc	1050	12	12×2,0	ca. 0,79	2400×1200	ca. 1160	02114
SRV-G 2 × 14 tc	3400	2	14×2.0	ca. 0.20	2400×1200	ca. 1050	42250
SRV-G 3 × 14 tc	3400	3	14×2.0	ca. 0.29	2400×1200	ca. 1315	01300
SRV-G 4 × 14 tc	3000	4	14×2.0	ca. 0.37	2400×1200	ca. 1435	01301
SRV-G 5 × 14 tc	1700	5	14×2.0	ca. 0.46	2400×1200	ca. 1110	01258
SRV-G 7 × 14 tc	1700	7	14×2.0	ca. 0.62	2400×1200	ca. 1380	01304
SRV-G 3 × 16 tc	2100	3	16×2.0	ca. 0.33	2400×1200	ca. 1020	01306
SRV-G 4 × 16 tc	2100	4	16×2.0	ca. 0.43	2400×1200	ca. 1230	01246
SRV-G 6 × 16 tc	1300	6	16×2,0	ca. 0,6	2400×1200	ca. 1105	02133
SRV-G 7 × 16 tc	1300	7	16×2.0	ca. 0.70	2400×1200	ca. 1235	01308
SRV-G 3 × 20 tc	1400	3	20×2.5	ca. 0.49	2400×1200	ca. 1015	01250
SRV-G 4 × 20 tc	1400	4	20×2.5	ca. 0.63	2400×1200	ca. 1210	01758
Jacket pipe colour: orange							
* Total weight including spool							

Available on request:

- Additional jacket pipe colours
- speed•pipe® bundles SRV-G tc in gabo and DIN colour code
- speed•pipe® double bundles ground D-SRV-G tc
- SRV-G tc as anti-rodent version
- SRV-G tc with locating wire

		Jacket pipe Ø32	Jacket pipe Ø40	Jacket pipe Ø50	
speed•pipe®	12×2.0	 SRV-G 32 / 3×12	 SRV-G 40 / 4×12	 SRV-G 50 / 5×12	
	14×2.0		 SRV-G 40 / 3×14	 SRV-G 50 / 4×14	 SRV-G 50 / 5×14
	16×2.0		 SRV-G 40 / 3×16	 SRV-G 50 / 4×16	

Overview of SRV-G for pulling into existing ducts

Product advantages

- The speed•pipe® bundles ground SRV-G consist of varicoloured speed•pipe® ground which are bundled by a flexible jacket pipe.
- The speed•pipe® bundles ground can be pulled into existing ducts (> 80 mm) for ensuring maximum occupation.
- Due to the permissible tension of the speed•pipe® ground the reachable pulling length is limited. But it is improved by rotating the spool and by using lubricants.
- High-quality PE-HD ensures highest product quality and a long life cycle.
- Fibre optic cables can be blown into the speed•pipe® ground over long distances.
- The SRV-G can be sealed against gas and water up to 0.5 bar and is fixed against elongations due to temperature changes by using the ADE / TDUX (Tyco).
- The fixing and gas- and water-tight sealing of the space between the jacket pipe and the single speed•pipe® ground up to 0.5 bar is effected by using the inside stiffener SHi and the divisible sealing element EZA-t.

Fittings

• Transparent permanent connectors	4.2.1	• Branch supports	4.3
• Divisible connectors	4.2.3	• Branches	10
• Divisible connectors with gas-stop	4.1.2	• Cable box	4.4.1
• Transparent permanent end plugs	4.1.3	• Protective pipes	4.4.2
• Divisible sealing elements 12 - 16	4.1.1	• Manhole insertions	4.5
• Divisible sealing elements	4.1.5	• Tools	4.6
• Marking labels with pipe plug	4.1.4		

Ordering data

Term	Jacket pipe (orange)	Length	speed•pipe® ground		Weight	Non-returnable wooden spool	Weight*	Item no.
	D×s (mm)	(m)	Pcs.	D×s (mm)	(kg / m)	D×s (mm)	(kg)	
SRV-G 32 / 3×12	32×0.5	400	3	12×2.0	ca. 0.25	2400×1200	ca. 130	01203
SRV-G 40 / 4×12	40×0.5	2700	4	12×2.0	ca. 0.30	2400×1200	ca. 1200	10546
SRV-G 50 / 5×12	50×0.5	2700	5	12×2.0	ca. 0.40	2400×1200	ca. 1450	05001
SRV-G 40 / 3×14	40×0.5	3400	3	14×2.0	ca. 0.30	2400×1200	ca. 1400	08001
SRV-G 50 / 4×14	50×0.5	1700	4	14×2.0	ca. 0.36	2400×1200	ca. 1000	05100
SRV-G 50 / 5×14	50×0.5	1700	5	14×2.0	ca. 0.45	2400×1200	ca. 1150	08003
SRV-G 40 / 3×16	40×0.5	2100	3	16×2.0	ca. 0.34	2400×1200	ca. 1100	42312
SRV-G 50 / 4×16	50×0.5	2100	4	16×2.0	ca. 0.44	2400×1200	ca. 1300	42308

* Total weight including spool

Product diversity for new and already existing networks

Due to the extensive range of fittings that are compatible to the speed•pipe® system gabocom offers the perfect solution for a complete, gas- and water-tight network. The single elements are divisible, resistant to tensile, reusable and easy to install.



4.1 Sealing and fixing elements

The divisible and easy to install sealing and fixing elements of gabocom allow the gas- and water-tight sealing of empty and occupied ducts and ensure the fixing against elongation.



4.2 Connecting elements

The gabocom connecting elements which are resistant to tensile, easy to install and partially divisible, offer the perfect solution for the gas- and water-tight connection of empty or occupied speed•pipe®.



4.3 Branch supports

With the branch supports for the speed•pipe® bundle ground gabocom ensures simple and secure solutions.



4.4 Protective elements

In order to allow the storage of excess lengths and to guarantee a safe protection of the cables against damages, gabocom developed special protective elements.



4.5 Manhole insertions

With the manhole insertions gabocom ensures the connection of the speed•pipe® bundle ground at the manhole.



4.6 Tools

The gabocom speed•pipe® and speed•pipe® bundles can be professionally cut with the corresponding tools.



4.7 Indoor fittings

This halogen-free and flame-retardant range of products is tested in accordance with the standards DIN EN 13501-1 as well as DIN EN 60684-2 and is the perfect addition to gabocom speed•pipe® indoor.

First choice for empty and occupied ducts

The divisible and easy to install sealing and fixing elements of gabocom allow the gas- and water-tight sealing of empty and occupied ducts and ensure the fixing against elongation.



Divisible sealing elements for speed•pipe®

4.1.1



Divisible connectors with gas-stop

4.1.2



Transparent permanent end plugs

4.1.3



Marking labels with pipe plug

4.1.4



Divisible sealing elements for PE-HD ducts and speed•pipe® bundles

4.1.5



Stiffeners

4.1.6



Divisible sealing element

Product advantages

- The divisible and tensile sealing elements EZA-t are reusable and suit for sealing empty and occupied speed•pipe®.
- They are gas- and water-tight up to 0.5 bar and contain a guiding for fibre optic cables.
- Before 10 bar of blow-in pressure are reached, the integrated safety valve opens.
- The fittings can easily and quickly be installed without any special tools.

Term	D (mm)	Sealing range of cable (mm)	Pcs. / unit	Item no.
EZA-t 7 / 0.8-2.5	7	0.8-2.5	40	04136
EZA-t 7 / 2.0-4.0	7	2.0-4.0	40	04135
EZA-t 8 / 2.0-4.0	8	2.0-4.0	40	01592
EZA-t 10 / 1.8-3.5	10	1.8-3.5	40	02914
EZA-t 10 / 3.0-5.0	10	3.0-5.0	40	01348
EZA-t 10 / 5.0-6.5	10	5.0-6.5	40	00481
EZA-t 12 / 1.8-3.5	12	1.8-3.5	40	02515
EZA-t 12 / 3.0-5.0	12	3.0-5.0	40	01352
EZA-t 12 / 5.0-6.5	12	5.0-6.5	40	01360
EZA-t 12 / 6.5-8.0	12	6.5-8.0	40	01365
EZA-t 14 / 3.0-5.0	14	3.0-5.0	40	10341
EZA-t 14 / 5.0-6.5	14	5.0-6.5	40	05405
EZA-t 14 / 6.5-8.0	14	6.5-8.0	40	05414
EZA-t 14 / 8.0-9.5	14	8.0-9.5	40	01003
EZA-t 16 / 6.5-8.0	16	6.5-8.0	40	42324
EZA-t 16 / 8.0-9.5	16	8.0-9.5	40	42325
EZA-t 16 / 9.5-11.0	16	9.5-11.0	40	42326
EZA-t 20 / 8.0-10.5	20	8.0-10.5	20	01350
EZA-t 20 / 10.5-13.0	20	10.5-13.0	20	01353



Divisible connector with gas-stop

Product advantages

- The divisible connectors EBM-GS are furnished with an integrated gas-stop.
- They were developed by gabocom for connecting occupied speed•pipe® and for longitudinally sealing them against gas and water up to 0.5 bar.
- The fittings are resistant to tensile for all current practical applications.
- They are applicable for direct burying and can easily and quickly be installed.

Term	D (mm)	Sealing range of cable (mm)	Pcs. / unit	Item no.
EBM-GS 7 / 0.8-4.0	7	0.8-4.0	12	42415
EBM-GS 8 / 2.0-4.0	8	2.0-4.0	12	01611
EBM-GS 10 / 1.8-3.5	10	1.8-3.5	12	42450
EBM-GS 10 / 3.0-5.0	10	3.0-5.0	12	42451
EBM-GS 10 / 5.0-6.5	10	5.0-6.5	12	42452
EBM-GS 12 / 3.0-5.0	12	3.0-5.0	12	42447
EBM-GS 12 / 5.0-6.5	12	5.0-6.5	12	42448
EBM-GS 12 / 6.5-8.0	12	6.5-8.0	12	42449
EBM-GS 14 / 5.0-6.5	14	5.0-6.5	12	42445
EBM-GS 14 / 6.5-8.0	14	6.5-8.0	12	42446
EBM-GS 16 / 6.5-8.0	16	6.5-8.0	12	01068
EBM-GS 16 / 8.0-9.5	16	8.0-9.5	12	01069
EBM-GS 16 / 9.5-11.0	16	9.5-11.0	12	01070



Transparent permanent end plugs

Product advantages

- The transparent permanent end plugs ES are used for closing speed•pipe® against gas and water up to 0.5 bar.
- They are resistant to tensile and can easily and quickly be installed.
- If required they can easily be disengaged by removing the locking ring.
- They are applicable for direct burying.

Ordering data

Term	D (mm)	Pcs. / unit	Item no.
ES 7 transparent permanent	7	50	02282
ES 8 transparent permanent	8	50	01311
ES 10 transparent permanent	10	50	02283
ES 12 transparent permanent	12	25	02284
ES 14 transparent permanent	14	25	02285
ES 16 transparent permanent	16	25	02286
ES 20 transparent permanent	20	25	02287



Marking labels with pipe plug

Product advantages

- The marking labels with pipe plug KmR are designed to brand speed•pipe® with a permanent marking like Edding with the customer's address in the branch section.
- They are suitable for the gas- and water-tight sealing of initially unoccupied speed•pipe® up to 0.5 bar and can easily and quickly be installed.
- By breaking off the protection cap the customer's address remains on the speed•pipe® after having blown in a fibre optic cable.

Ordering data

Term	Colour	D (mm)	Pcs. / unit	Item no.
KmR 7	orange	7	40	01094
KmR 10	pink	10	40	00998
KmR 12	yellowgreen	12	40	01059
KmR 14	orange	14	40	01150
KmR 16	turquoise	16	40	01010

Divisible sealing elements

Divisible sealing elements for PEHD ducts and speed•pipe® bundles



Sealing of a duct occupied with speed•pipe® and a cable



Sealing of the speed•pipe® bundle SRV 50 / 8×10



Sealing of the speed•pipe® bundle ground SRV-G 24×7 tc

Product advantages

- The easy to assemble sealing elements EZA-t are divisible, reusable and gas- and water-tight up to 0.5 bar.
- They were developed by gabocom for pipe-in-pipe occupation and the speed•pipe® bundles SRV, SRV-G (with outer jacket) and SRV-G tc (without outer jacket).
- Using these fittings empty and occupied cable ducts are sealed and fixed to speed•pipe®.
- They are also applicable for fixing and sealing the space between the jacket pipe of the speed•pipe® bundles and the single speed•pipe®.

Divisible sealing elements

for pipe-in-pipe occupation, SRV and SRV-G (with outer jacket)

4.1.5

Ordering data

Term	D (mm)	speed•pipe®		Sealing range	Pcs. / unit	Item no.
		Pcs.	D (mm)	Cable (mm)		
EZA-t 32 / 7×7	32	0-7	7		12	02355
EZA-t 40 / 8×7+12-14	40	0-8 0-1	7 12 / 14		12	42329
EZA-t 40 / 10×7	40	0-10	7		12	00526
EZA-t 50 / 10×7+12-14	50	0-10 0-1	7 12 / 14		12	03552
EZA-t 40 / 14×7	40	0-14	7		12	04821
EZA-t 50 / 14×7	50	0-14	7		12	00497
EZA-t 50 / 18×7	50	0-18	7		12	42200
EZA-t 50 / 22×7+1×12	50	0-22 0-1	7 12		12	42331
EZA-t 50 / 24×7	50	0-24	7		12	05080
EZA-t 63 / 24×7+14-16	63	0-24 0-1	7 14 / 16		12	01071
EZA-t 40 / K+2×7	40	0-2	7	18.5-27.5	12	01378
EZA-t 50 / K+2×7	50	0-2	7	18.5-27.5	12	01379
EZA-t 40 / K+5×7	40	0-5	7	8.0-18.5	12	42527
EZA-t 50 / K+7×7	50	0-7	7	8.0-18.5	12	42125
EZA-t 32 / 3×10	32	0-3	10		12	00506
EZA-t 32 / 4×10	32	0-4	10		12	04099
EZA-t 40 / 5×10	40	0-5	10		12	00507
EZA-t 40 / 7×10	40	0-7	10		12	04097
EZA-t 50 / 8×10	50	0-8	10		12	05698
EZA-t 50 / 12×10	50	0-12	10		12	05085
EZA-t 32 / K+2×10	32	0-2	10	8.0-13.5	12	03551
EZA-t 40 / K+3×10	40	0-3	10	8.0-18.5	12	00947
EZA-t 50 / K+3×10	50	0-3	10	16.0-25.5	12	03550
EZA-t 50 / K+5×10	50	0-5	10	8.0-18.5	12	03545
EZA-t 32 / 3×12	32	0-3	12		12	04078
EZA-t 40 / 4×12	40	0-4	12		12	04083
EZA-t 40 / 5×12	40	0-5	12		12	01640
EZA-t 50 / 7×12	50	0-7	12		12	04090
EZA-t 50 / K+5×12	50	0-5	12	8.0-18.5	12	03553
EZA-t 40 / 3×14	40	0-3	14		12	04101
EZA-t 50 / 5×14	50	0-5	14		12	01101
EZA-t 50 / 6×14	50	0-6	14		12	05096
EZA-t 63 / 7×14	63	0-7	14		12	01072
EZA-t 40 / 3×16	40	0-3	16		12	42328
EZA-t 50 / 4×16	50	0-4	16		12	42330
EZA-t 63 / 7×16	63	0-7	16		12	01199
EZA-t 50 / 3×20	50	0-3	20		12	01407
EZA-t 63 / 4×20	63	0-4	20		12	01408

Divisible sealing elements

for SRV-G tc (without outer jacket) for direct burying

Ordering data

Term	speed•pipe®		Pcs. / unit	Item no.
	Pcs.	D (mm)		
EZA-t 7×7	7	7	12	01236
EZA-t 8×7+1×12	8	7	12	01589
	1	12		
EZA-t 12×7	12	7	12	01904
EZA-t 12×7+1×14	12	7	12	02514
	1	14		
EZA-t 14×7	14	7	12	01267
EZA-t 18×7	18	7	12	01274
EZA-t 22×7+1×12	22	7	12	01590
	1	12		
EZA-t 24×7	24	7	12	01275
EZA-t 24×7+1×14	24	7	12	01279
	1	14		
EZA-t 7×10	7	10	12	01268
EZA-t 12×10	12	10	12	01276
EZA-t 3×12	3	12	12	01237
EZA-t 7×12	7	12	12	01591
EZA-t 12×12	12	12	12	02429
EZA-t 3×14	3	14	12	01273
EZA-t 4×14	4	14	12	01857
EZA-t 5×14	5	14	12	01277
EZA-t 3×16	3	16	12	01905
EZA-t 7×14	7	14	12	01280
EZA-t 4×16	4	16	12	01278
EZA-t 7×16	7	16	12	01281
EZA-t 3×20	3	20	12	01906
EZA-t 4×20	4	20	12	01282



Inside stiffener

Inside stiffeners 32 / 40 / 50 / 63

The divided inside stiffeners SHi are suitable for stiffening the flexible jacket pipe of the speed•pipe® bundles SRV and SRV-G and for shaping them to a round duct with standardised diameter before installing the divisible sealing element EZA-t.

Ordering data

Term	D (mm)	Pcs. / unit	Item no.
SHi 32	32	24	04857
SHi 40	40	12	04863
SHi 50	50	12	04547
SHi 63	63	12	01066



Outside stiffener

Outside stiffener 50

The divided outside stiffener SHa is used for the outside stiffening of the jacket pipe of the speed•pipe® bundle SRV 50 / 8×10 before installing the sealing element ADE / TDUX 100 of Tyco.

Ordering data			
Term	D (mm)	Pcs. / unit	Item no.
SHa 50	50	12	04584



Outside double stiffener

Outside double stiffener 50

The divided outside double stiffener DSHa is used for the outside stiffening of the jacket pipes of two speed•pipe® bundles SRV 50 / 8×10 before installing the sealing element ADE / TDUX 90 (100) of Tyco.

Ordering data			
Term	D (mm)	Pcs. / unit	Item no.
DSHa 50	50	12	04565

Accessories for the speed•pipe® system

With connecting elements that are resistant to tensile, easy to install and partially divisible, gabocom offers the perfect solution for the gas- and water-tight connection of empty or occupied speed•pipe®.



Transparent permanent connectors

4.2.1



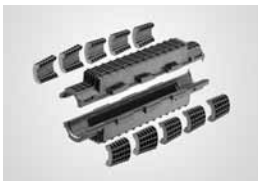
Transparent permanent reducers

4.2.2



Divisible connectors

4.2.3



Connector boxes for speed•pipe® bundle ground

4.2.4



Transparent permanent connectors

Product advantages

- The transparent permanent connectors DSM are used for connecting speed•pipe® and are applicable for direct burying.
- They are pressure-tight up to 15 bar, resistant to tensile and can easily and quickly be installed.
- By removing the locking ring they can easily be disengaged.

Ordering data

Term	D (mm)	Pcs. / unit	Item no.
DSM 7 transparent permanent	7	50	02272
DSM 8 transparent permanent	8	50	01314
DSM 10 transparent permanent	10	50	02273
DSM 12 transparent permanent	12	25	02274
DSM 14 transparent permanent	14	25	02275
DSM 16 transparent permanent	16	25	02276
DSM 20 transparent permanent	20	25	02277



Transparent permanent reducers

Product advantages

- The transparent permanent reducers RSM are used for the gas- and water-tight connection of speed•pipe® with the same inner diameter up to 15 bar.
- They can easily and quickly be installed.
- By removing the locking ring they can easily be disengaged.
- The fittings are applicable for direct burying.

Ordering data

Term	D1 (mm)	D2 (mm)	Pcs. / unit	Item no.
RSM 10-7 transparent permanent	10	7	25	02278
RSM 12-10 transparent permanent	12	10	25	02279
RSM 14-12 transparent permanent	14	12	25	02280
RSM 16-14 transparent permanent	16	14	25	02281



Divisible connector

Product advantages

- The divisible connectors EBM ensure the permanent gas- and water-tight connection of occupied speed•pipe® up to 0.5 bar and for a duration of 30 minutes even up to 10 bar.
- The fittings are resistant to tensile for all current practical applications.
- They are applicable for direct burying and can easily and quickly be installed.

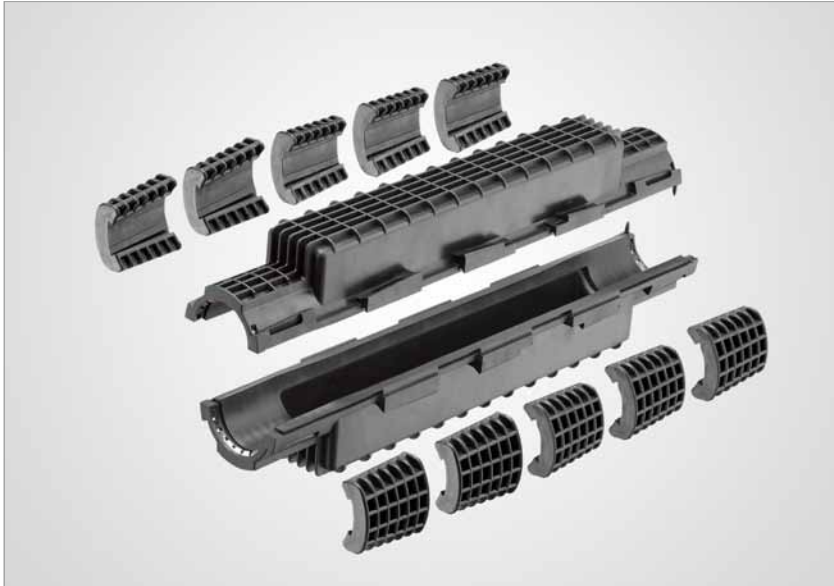
Ordering data

Term	D (mm)	Pcs. / unit	Item no.
EBM 7	7	12	10753
EBM 8	8	12	01610
EBM 10	10	12	10786
EBM 12	12	12	10787
EBM 14	14	12	10788
EBM 16	16	12	01065
EBM 20	20	12	02516

Connector boxes

for speed•pipe® bundles ground SRV-G 40 / 50 / 63 and SRV-G tc

4.2.4



Connector box for speed•pipe® bundle ground

Product advantages

- The divisible connector boxes SRV-M and SRV-M MAXI are suitable for the pressure-tight connection of the speed•pipe® bundles ground SRV-G 40, 50 and 63. They are permanently gas- and water-tight up to 0.5 bar, reusable and applicable for direct bury. For connecting the speed•pipe® bundle ground SRV-G the inside stiffener SHi (refer to chapter 4.1.6) has to be inserted on both sides.
- The divisible SRV-M MAXI for SRV-G tc are suitable for the pressure-tight connection of the speed•pipe® bundles ground SRV-G tc. They are reusable and applicable for direct bury.

Ordering data

Term	D (mm)	Length (mm)	Pcs. / unit	Item no.
SRV-M 40	40	455	10	04853
SRV-M 50	50	455	10	04852
SRV-M 50 MAXI	50	550	2	01190
SRV-M 63 MAXI	63	550	2	01191
SRV-M 63-50 MAXI	63-50	550	2	01358
SRV-M MAXI for SRV-G tc - size 1	tc	550	2	01704
Use for SRV-G 7×7 tc, SRV-G 8×7 + 1×12 tc, SRV-G 12×7 tc, SRV-G 12×7 + 1×14 tc, SRV-G 14×7 tc, SRV-G 18×7 tc, SRV-G 22×7 + 1×12 tc, SRV-G 24×7 tc, SRV-G 24×7 + 1×14 tc, SRV-G 7×10 tc, SRV-G 12×10 tc, SRV-G 3×12 tc, SRV-G 7×12 tc, SRV-G 3×14 tc, SRV-G 4×14 tc, SRV-G 5×14 tc, SRV-G 7×14 tc, SRV-G 3×16 tc, SRV-G 4×16 tc, SRV-G 6×16 tc, SRV-G 7×16 tc, SRV-G 3×20 tc				
SRV-M MAXI for SRV-G tc - size 2	tc	550	2	02321
Use for SRV-G 12×12 tc, SRV-G 4×20 tc, SRV-G 5×20 tc				



T-branch-support and L-branch-support

Product advantages




- Single speed•pipe® ground can be branched off the speed•pipe® bundle ground in a safe bend to the customer or to the distribution box by using the T-branch-support TBS or the L-branch-support LBS.
- The branch supports are connected with the speed•pipe® bundle ground and the branching speed•pipe® ground by means of cable straps.
- The use of a marking system like the markerpeg or the 3M ball marker facilitates the subsequent localisation of the branch.
- The gabocom markerpeg is used for the localisation of tracks and branches.

Ordering data

Term	Pcs. / unit	Item no.
TBS	12	02423
LBS	12	02330
Markerpeg with holder	10	02424

Maximum safety for cable and duct

In order to allow the storage of excess lengths and to guarantee a safe protection of the cables against damages, gabocom developed special protective elements.

	Cable box	4.4.1
	Protective pipes	4.4.2
	speed•pipe® box	4.4.3



Cable box

Product advantages

- The cable box was developed for excess lengths of micro cables.
- It can be locked with a cover and protects the cables against damages.
- The installation can easily and quickly be effected.

Ordering data

Term	Excess length of micro cable (m)	H×B×T (mm)	Pc. / unit	Item no.
C-box type A	30	600×300×120	1	00091
C-box type B	120	650×680×160	1	04088



Divided corrugated PP pipe

Product advantages

- The corrugated PP pipe is divided longitudinally.
- It protects the speed•pipe® against damages in the manhole.

Ordering data

Term	D (mm)	d (mm)	Pc. / unit	Item no.
PPWR-t 40	40	31	1 (25 m)	01913
PPWR-t 50	50	42	1 (25 m)	01914



speed•pipe® box

Product advantages

- The speed•pipe® box is a direct buried storing element for the mechanical protection of the excess length of a bundle of speed•pipe® ground 7×1.5 up to maximum 50 m.
- The use of a marking system like for example the 3M ball marker facilitates the subsequent localisation of the box.

Ordering data

Term	Pcs. / unit	Item no.
speed•pipe® box	10	42465



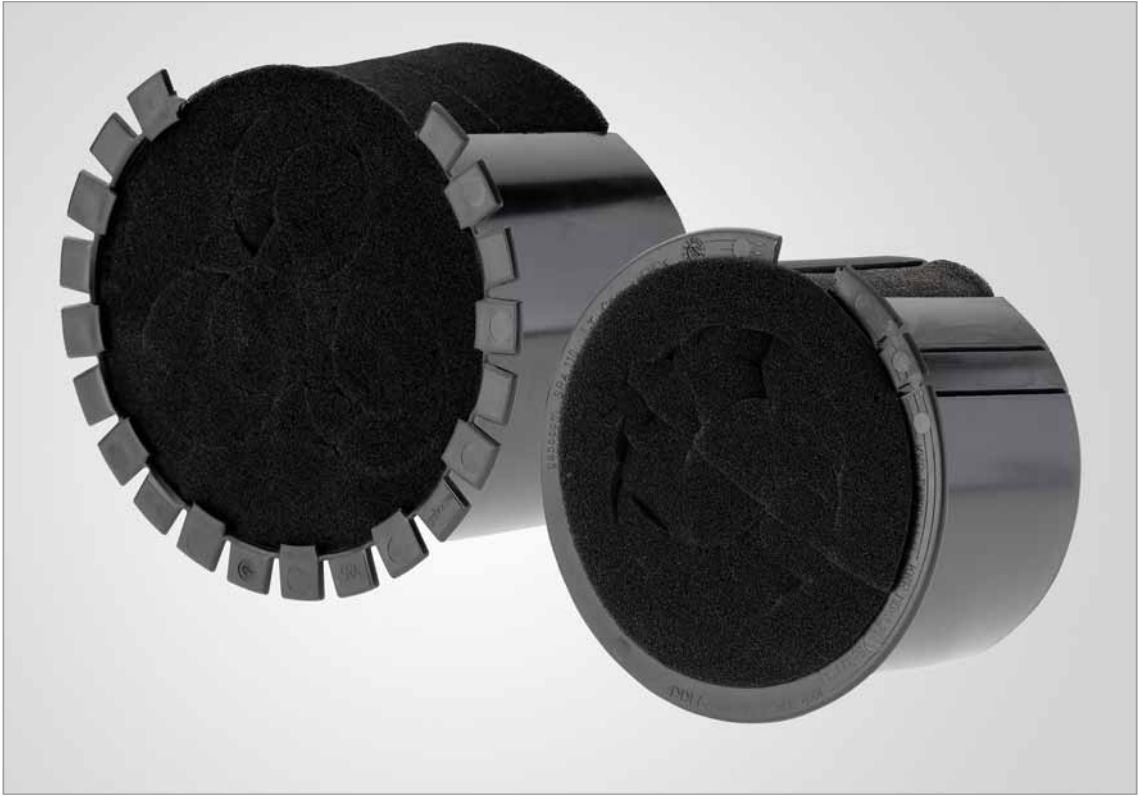
Duct adaptors

Duct adaptors 110

With the divided duct adaptors RAAd-t the speed•pipe® bundle ground is connected to the manhole.

Ordering data

Term	D (mm)	Length (mm)	Pcs. / unit	Item no.
RAAd-t 110 / 2×50 (40)	110	63	20	01474



Protective duct sealings

Protective duct sealings 110 / 125

The flexible protective duct sealings SRA ensure a sand-tight connection of the speed•pipe® bundle ground to the manhole.

Ordering data			
Term	Sealing range (mm)	Pcs. / unit	Item no.
SRA 110	99 - 110	18	02998
SRA 125	110 - 120	22	03357



Tools

Product advantages

- The speed•pipe® cutter and the bundle cutter are used for the professional installation.
- By means of these tools the speed•pipe® and the speed•pipe® bundles are cut in a chipless and rectangular way.
- The sheath cutter with sliding guide and the ceramic safety cutter are particularly suitable for opening a coated bundle because these tools reduce the risk of injury in contrast to a knife for instance.
- The gabocom tool box contains a sheath cutter with sliding guide, a speed•pipe® cutter, a spare blade for the speed•pipe® cutter, a hammer, a pliers and a bundle cutter.

Ordering data

Term	Pcs. / unit	Item no.
speed•pipe® cutter	1	01204
Spare blade for speed•pipe® cutter	1	01205
Bundle cutter	1	42348
Sheath cutter with sliding guide	1	01806
Ceramic safety cutter	1	02430
Spare blades for ceramic safety cutter	3	02431
gabocom tool box	1	01976

Accessories for gabocom speed•pipe® indoor

This halogen-free and flame-retardant range of products is tested according to EN 61386 and EN 60684-2 and is the perfect addition to gabocom speed•pipe® indoor.



Divisible indoor sealing elements

4.7.1



Divisible indoor connectors with gas-stop

4.7.2



Indoor end plugs

4.7.3



Indoor connectors

4.7.4



Divisible indoor connectors

4.7.5



Indoor bends

4.7.6



Indoor marking labels with pipe plug

4.7.7



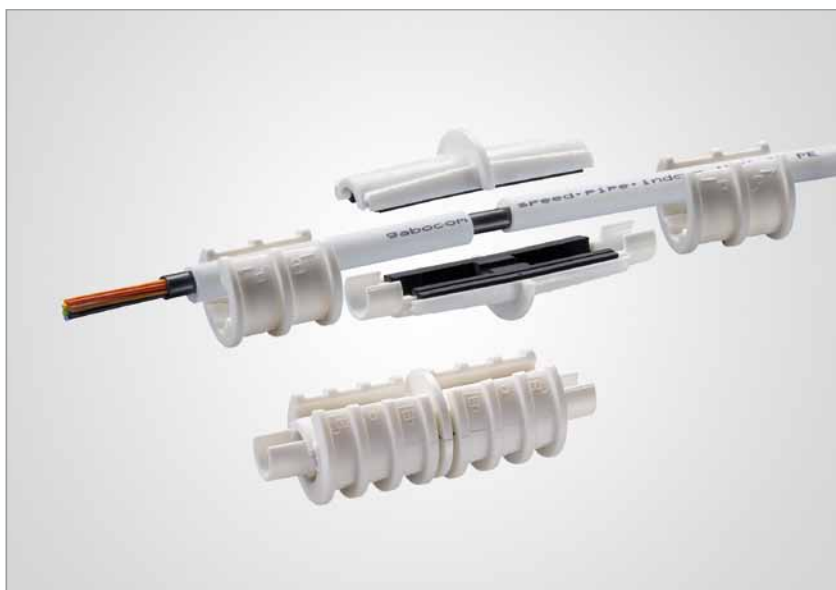
Divisible sealing element
for speed•pipe® indoor

Product advantages

- The flame-retardant, halogen-free and divisible sealing elements EZA-t indoor are reusable and are suitable for sealing empty and occupied speed•pipe® indoor.
- They are tensile, gas- and water-tight up to 0.5 bar and contain a lead for fiber optic cables.
- The integrated safety valve opens before a possible blow-in pressure of 10 bar is reached.
- The fittings are quick and easy to assemble without any special tools.

Ordering data

Term	D (mm)	Sealing range of cable (mm)	Pcs. / unit	Item no.
EZA-t 4 / 1.0-2.0 indoor	4	1.0-2.0	40	01085
EZA-t 7 / 0.8-2.5 indoor	7	0.8-2.5	40	01320
EZA-t 7 / 2.0-4.0 indoor	7	2.0-4.0	40	01324
EZA-t 10 / 1.8-3.5 indoor	10	1.8-3.5	40	01325
EZA-t 10 / 3.0-5.0 indoor	10	3.0-5.0	40	01326
EZA-t 10 / 5.0-6.5 indoor	10	5.0-6.5	40	01327
EZA-t 12 / 3.0-5.0 indoor	12	3.0-5.0	40	01328
EZA-t 12 / 5.0-6.5 indoor	12	5.0-6.5	40	01329
EZA-t 14 / 3.0-5.0 indoor	14	3.0-5.0	40	01331
EZA-t 14 / 5.0-6.5 indoor	14	5.0-6.5	40	01332
EZA-t 14 / 6.5-8.0 indoor	14	6.5-8.0	40	01333



Divisible connector with gas-stop for speed•pipe® indoor

Product advantages

- The flame-retardant and halogen-free connectors EBM-GS indoor are equipped with an integrated gas-stop.
- They were developed by gabocom for connecting occupied speed•pipe® indoor and for sealing them against gas and water up to 0.5 bar in longitudinal direction.
- The divisible fittings are tensile and quick and easy to assemble.

Ordering data

Term	D (mm)	Sealing range of cable (mm)	Pcs. / unit	Item no.
EBM-GS 7 / 0.8-4.0 indoor	7	0.8-4.0	12	01335
EBM-GS 10 / 1.8-3.5 indoor	10	1.8-3.5	12	01336
EBM-GS 10 / 3.0-5.0 indoor	10	3.0-5.0	12	01337
EBM-GS 10 / 5.0-6.5 indoor	10	5.0-6.5	12	01338
EBM-GS 12 / 3.0-5.0 indoor	12	3.0-5.0	12	01339
EBM-GS 12 / 5.0-6.5 indoor	12	5.0-6.5	12	01341
EBM-GS 14 / 5.0-6.5 indoor	14	5.0-6.5	12	01343
EBM-GS 14 / 6.5-8.0 indoor	14	6.5-8.0	12	01344



End plugs for speed•pipe® indoor

Product advantages

- The flame-retardant and halogen-free end plugs ES indoor are suitable for sealing the speed•pipe® indoor against gas and water up to 0.5 bar.
- They are tensile and quick and easy to assemble.

Ordering data

Term	D (mm)	Pcs. / unit	Item no.
ES 4 indoor	4	50	01978
ES 5 indoor	5	50	01980
ES 7 indoor	7	50	01694
ES 10 indoor	10	50	01695
ES 12 indoor	12	25	01696
ES 14 indoor	14	25	01697



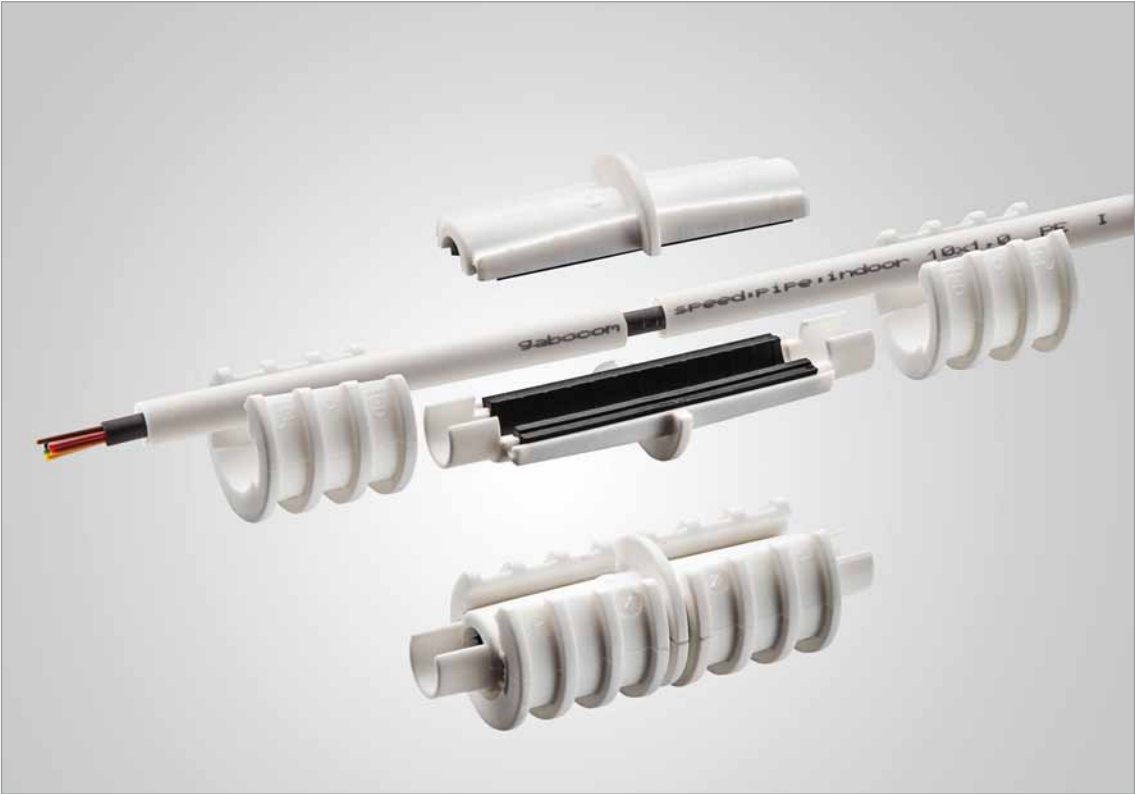
Connectors for speed•pipe® indoor

Product advantages

- The flame-retardant and halogen-free connectors DSM indoor are used for connecting speed•pipe® indoor.
- They are pressure-tight up to 15 bar.
- They are tensile and quick and easy to assemble.

Ordering data

Term	D (mm)	Pcs. / unit	Item no.
DSM 4 indoor	4	50	01298
DSM 5 indoor	5	50	01479
DSM 7 indoor	7	50	01220
DSM 10 indoor	10	50	01221
DSM 12 indoor	12	25	01222
DSM 14 indoor	14	25	01223



Divisible connector for speed•pipe® indoor

Product advantages

- The flame-retardant and halogen-free connectors EBM indoor ensure the permanent gas- and water-tight connection of occupied speed•pipe® indoor up to 0.5 bar.
- The divisible fittings are resistant to tensile and can easily and quickly be installed.

Ordering data

Term	D (mm)	Pcs. / unit	Item no.
EBM 7 indoor	7	12	01748
EBM 10 indoor	10	12	01749
EBM 12 indoor	12	12	01750
EBM 14 indoor	14	12	01751



Indoor bends for speed•pipe® indoor 7

Product advantages

- The flame-retardant and halogen-free indoor bend IB is used for deflecting speed•pipe® indoor 7 inside the building without any kinks.
- Any number of indoor bends can be stacked one onto the other.

Ordering data

Term	D (mm)	Pcs. / unit	Item no.
IB 7 with dowels	7	10	01414
IB 7 without dowels	7	10	01415



Marking labels for speed•pipe® indoor

Product advantages

- The marking labels with pipe plug KmR indoor are designed to brand speed•pipe® indoor with a permanent marking like Edding with the customer's address in the branch section.
- They are suitable for the gas- and water-tight sealing of initially unoccupied speed•pipe® indoor up to 0.5 bar and can easily and quickly be installed.
- By breaking off the protection cap the customer's address remains on the speed•pipe® indoor after having blown in a fibre optic cable.

Ordering data

Term	D (mm)	Pcs. / unit	Item no.
KmR 7 indoor	7	40	02017
KmR 10 indoor	10	40	02018
KmR 12 indoor	12	40	02019
KmR 14 indoor	14	40	02020

Proven solutions for the customer connection

The gabocom house lead-ins allow the fast and easy connection of buildings to the fibre optic network.



5.1 Application in the cellar

A variety of gabocom components allows the gas- and water-tight realisation of the customer connection in the cellar.



5.2 Above ground application

The above ground house lead-in ensures the gas- and water-tight customer connection through the facade. Therefore gabocom developed a special design for all common facades which guarantees a comfortable atmosphere.



5.3 Sleeves

The gabocom sleeves allow the application of all house lead-ins in brick walls.



Set of sealing element with protective bend 28 / 7



Set of sealing element with protective bend 7.0 - 9.0



Set of double sealing element with
protective bend 9.0 - 12.5

House lead-ins for the application in the cellar

gabocom offers two different sealing elements with protective bend: ADSB (single) and ADSB-D (double). Both versions allow the house lead-in of cables or speed•pipe® ground in the cellar. They are furnished with an integrated deflection to the inside wall with a radius of 60 mm (or 45 mm at ADSB 28 / 7) and they are suitable for the application in non-pressing water. In the following applications they are gas- and water-tight up to 1 bar:

- Between a cable or a speed•pipe® ground and a core drilling of 47 mm (or a drilling of 28 mm at ADSB 28 / 7) in a concrete wall with grade C 20 / 25 or C 25 / 30 according to DIN 1045
- Between a cable or a speed•pipe® ground and a brick wall using the sleeve SKW 50 (or SKW 32 at ADSB 28 / 7)

Ordering data

Term	Suitable for		Quantity	Pcs. / unit	Item no.
	Cable diameter (mm)	speed•pipe® ground (mm)	Cable / speed•pipe® ground		
Set ADSB 28 / 7		7×1.5	1	10	42124
Set ADSB 7.0-9.0	7.0-9.0	7×1.5	1	10	42157
Set ADSB-D 7.0-9.0	7.0-9.0	7×1.5	2	10	42159
Set ADSB 9.0-12.5	9.0-12.5	10×2.0 / 12×2.0	1	10	42158
Set ADSB-D 9.0-12.5	9.0-12.5	10×2.0 / 12×2.0	2	10	42160
The set contains an inner and an outer part.					



Set of flexible sealing element with protective bend 28 / 7

Fittings

Sleeves 5.3

Ordering data

Term	speed•pipe® ground (mm)	Pcs. / unit	Item no.
Set ADSB-F 28 / 7	7 × 1.5	10	42469
Set ADSB-F 28 / 10	10 × 2.0	10	42470
The set contains an inner and an outer part.			

Flexible house lead-ins for the application in the cellar

The flexible sealing elements with protective bend ADSB-F enable the house lead-in of a speed•pipe® ground 7 × 1.5 (ADSB-F 28 / 7) or a speed•pipe® ground 10 × 2.0 (ADSB-F 28 / 10). They have an integrated deflection with a radius of 45 mm and an excess length of approximately 54 mm to the inside wall. They are tight against gas and non-pressing water up to 1 bar between the speed•pipe® ground and the drilling of 28 mm in a concrete wall with grade C 20 / 25 or C 25 / 30 according to DIN 1045. They are also tight against gas and non-pressing water up to 1 bar in a brick wall by using the sleeve SKW 32.

The following applications are common:

- Insert of a speed•pipe® ground 7 × 1.5 or 10 × 2.0 into houses with no access through the cellar
- Installation in concrete walls through a drilling of 28 mm like for example Hilti at which a core drilling is not necessary
- Installation in brick walls by using the sleeve SKW 32
- Possible installation in drill holes with a slope of up to 30°

House lead-ins

Above ground application



Above ground application HEO

Product advantages

- The above ground house lead-in HEO is applied for leading speed•pipe® ground 7 × 1.5 / 10 × 2.0 into houses or apartments without access through the cellar.
- It comprises a splash water protection according to IP 65.
- The integrated gas-stop transforms from a speed•pipe® ground 7 × 1.5 / 10 × 2.0 (outside area) to a speed•pipe® indoor 7 × 1.5 / 10 × 2.0 (inside area).
- The cable is fixed against tensile loadings.
- Additionally this gas-stop allows the gas- and water-tight sealing of the cable to the speed•pipe® ground in longitudinal direction up to 0.5 bar.
- The integrated deflection bend with a radius of 25 mm assures an accurate lead of the speed•pipe® indoor along the wall.

Ordering data

Term	speed•pipe® ground (mm)	Pc. / unit	Item no.
Set HEO 7 (with gas-stop)	7 × 1.5	1	42488
Set MOB 7 (without gas-stop)	7 × 1.5	1	01345
Set HEO 10 (with gas-stop)	10 × 2.0	1	02214



Set of sealing element with protective bend 28 / 7 with sleeve 32

Product advantages

- The sanded sleeves SKW are used for being plastered in brick walls.
- The fittings are protected against contamination when being plastered.

Ordering data

Term	D (mm)	Length (mm)	Pcs. / unit	Item no.
SKW 32	32	390	2	01987
SKW 32	32	500	2	01988
SKW 50	50	390	2	01989
SKW 50	50	500	2	01990
SKW 50	50	390	8	04546
SKW 50	50	500	8	05422

Split duct system

Safe repairing of
occupied cable ducts



Split duct system

Split ducts

Pressure-tight and divisible repairing solutions

6

Connectors

Divisible, gas- and water-tight fittings

7

Assembly tools

For an expert assembly

8

Split duct bends

Divisible, gas- and water-tight fittings

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Branches

Divisible, gas- and water-tight fittings

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Repairing sleeves

Divisible, gas- and water-tight fittings

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Introduction: Patented products for repairing, pictures of practical experience

Split ducts

6



Connectors

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Assembly tools

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Split duct bends

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Branches

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Repairing sleeves

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Split duct system: Optimum choice for repairs and more

In case a cable duct is damaged the gas- and water-tight repair must be carried out as quickly and economically as possible. Also for branching off single speed•pipe® from the overall system or for existing pipe ways, time and cost saving solutions are needed which can be realised in practice. Exactly for this reason gabocom has developed the proven split duct system. In addition to split ducts this system also comprises connectors and split duct branches in the dimensions 32, 40, 50, 110 and 125, as well as tools for the user-friendly installation.

On the following pages you learn more about the split duct system. Your personal contact person will advise you and will accompany you on your way to the solution that exactly meets your demands.

The advantages of the split duct system at a glance:

Quick repair without any network interruptions

- Repairs and installation works can be carried out quickly and cost-effectively.
- In the meantime occupied ducts may continue to be used without any interruptions of the signal.

Fulfillment of all route requirements

- All fittings are manufactured out of high-quality materials and can even be connected to manholes without any problems.
- They are divisible, tensile, gas- and water-tight.
- With their gas- and water-tightness of 0.5 bar they fulfill the standard of telecommunication companies.
- The dimensions 32, 40 and 50 also are suitable for blowing in with a compressor pressure of up to 10 bar.

Proven solutions for practice



Here gabocom split ducts are laid in a pipe way.



This picture shows the application in practice at close proximity.



Occupied pipe ways can be repaired quickly and economically.



Split ducts

Product advantages

- The split ducts KKHR were developed by gabocom for the pressure-tight repair of empty ducts or ducts occupied with cables or speed•pipe®.
- They are suitable for the gas- and water-tight sealing of blow-in points.
- They consist of two half shells manufactured out of high-quality PVC-U.
- The easy installation facilitates the branching off pipeline routes.

Fittings

- | | |
|------------------|---|
| • Connectors | 7 |
| • Assembly tools | 8 |

Ordering data

Term	D×s (mm)	Length (mm)	Gas- and water-tight up to	Pcs. / unit	Pcs. / pallet	Item no.
KKHR 32	32×1.8	2000	0.5 bar permanent (10 bar / 30 min.)	2	84	12195
KKHR 40	40×1.9	2000	0.5 bar permanent (10 bar / 30 min.)	2	68	09956
KKHR 50	50×2.4	2000	0.5 bar permanent (10 bar / 30 min.)	3	51	09957
KKHR 110	110×3.2	2000	0.5 bar	3	78	14149
KKHR 110	110×3.2	6000	0.5 bar	3	78	04709
KKHR 125	125×3.7	3000	0.5 bar	4	52	05298
KKHR 125	125×3.7	6000	0.5 bar	4	52	05299



Split duct sleeve KKHRM and connector EBM

Product advantages

- The connector EBM and the split duct sleeve KKHRM are used for the gas- and water-tight connection of split ducts and ducts.
- The connectors EBM are resistant to tensile.
- Both fittings are out of PVC-U and are divisible.

Fittings

- Split ducts 6
- Assembly tools 8

Ordering data

Term	D (mm)	Gas- and water-tight up to	Pcs. / unit	Item no.
EBM 32	32	0.5 bar permanent (10 bar / 30 min.)	12	10777
EBM 40	40	0.5 bar permanent (10 bar / 30 min.)	12	10778
EBM 50	50	0.5 bar permanent (10 bar / 30 min.)	12	10779
KKHRM 110	110	0.5 bar	12	05891
KKHRM 125	125	0.5 bar	12	05695



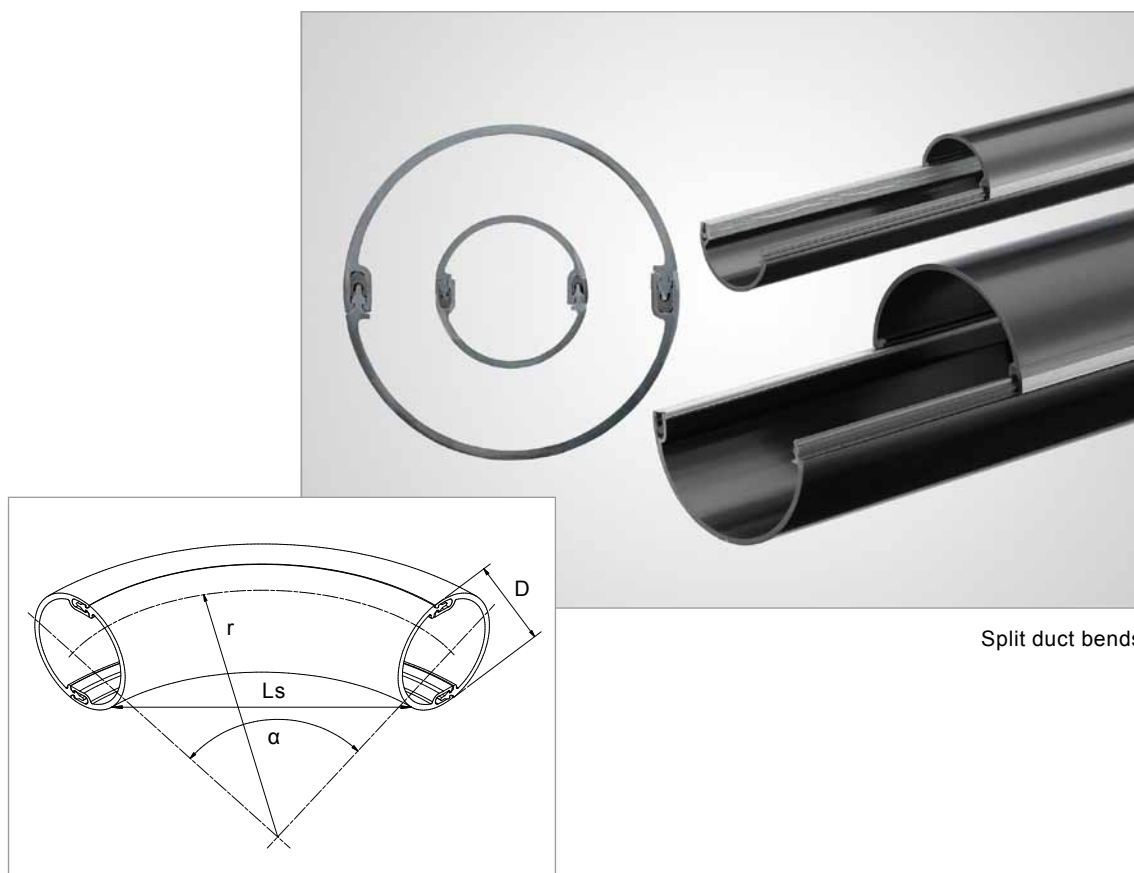
Assembly tool

Product advantages

- The assembly tools KKHRG are divisible.
- They are used for the professional assembly of the gabocom split ducts.

Ordering data

Term	D (mm)	Pc. / unit	Item no.
KKHRG 32	32	1	05022
KKHRG 40	40	1	04179
KKHRG 50	50	1	07624
KKHRG 110	110	1	01930
KKHRG 125	125	1	09747



Split duct bends

Product advantages

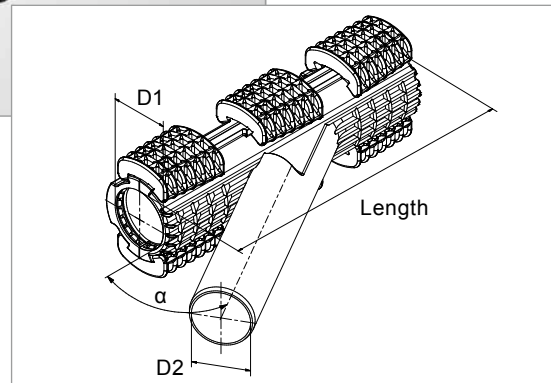
- The divided split duct bends KKHRB are used for repairing ducts which are laid in a bend due to changes of the pipe ways or to height differences.
- They consist of PVC-U and are gas- and water-tight up to 0.5 bar.

Ordering data

Term	D (mm)	r (mm)	α	Ls	Pc. / unit	Item no.
KKHRB 50 type I	50	1000	90°	1379	1	04765
KKHRB 50 type II	50	3100	45°	2776	1	04763
KKHRB 110	110	1000	90°	1336	1	05067
KKHRB 110	110	1000	45°	723	1	05068
KKHRB 110 type I	110	2710	45°	2181	1	04757
KKHRB 110 type II	110	3340	45°	2706	1	04754
KKHRB 110 type III	110	4040	45°	3252	1	04750
KKHRB 110 type IV	110	4810	45°	3893	1	04741
KKHRB 110 type V	110	6070	45°	5148	1	04739
KKHRB 125 type I	125	2710	45°	2181	1	01196



Split duct branch 50 / 50-30°



Product advantages

- By means of the divided split duct branch HRMA and split duct double branch HRM-DA, speed•pipe® or cables are safely branched off a PE / PVC duct.
- They are gas- and water-tight up to 0.5 bar.

Ordering data

Term	D1 (mm)	D2 (mm)	α	Length (mm)	Pcs. / unit	Item no.
HRMA 32 / 32-30°	32	32	30°	261	6	42174
HRMA 40 / 32-30°	40	32	30°	125	6	01034
HRMA 40 / 40-90°	40	40	90°	261	6	10315
HRMA 50 / 32-30°	50	32	30°	125	6	00486
HRMA 50 / 50-30°	50	50	30°	261	6	04621
HRMA 50 / 50-90°	50	50	90°	261	6	00983
HRMA 110 / 50-30°	110	50	30°	300	5	00288
HRM-DA 40 / 2×32-30°	40	32	30°	125	6	01043
HRM-DA 50 / 2×32-30°	50	32	30°	125	6	01045



Repairing sleeve 110

Product advantages

- The divided repairing sleeves EBM-R and RM are applicable for the repair of light damages of empty ducts or ducts occupied with cables.
- They are gas- and water-tight up to 0.5 bar.
- The EBM-R 32, 40 and 50 are resistant to tensile.

Ordering data

Term	D (mm)	Length (mm)	Pcs. / unit	Item no.
EBM-R 32	32	260	6	42233
EBM-R 40	40	260	6	10316
EBM-R 50	50	260	6	00997
RM 110	110	300	12	11188

Common fittings

Products concerning
cable and pipe



Common fittings

Sealing elements

Divisible, gas- and water-tight fittings for sealing and fixing

12

Jointed duct bends

Flexible and pressure-tight fittings

13

Connecting elements

Connecting possibilities for cable ducts

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Repair set for multi pipes

For repairing and connecting occupied multi pipes

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Ducting terminal panels

For connecting junction boxes and manholes

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Spacers

For direct burying and for above ground laying

17

Protective half shells

For protecting cables when laying above ground

18

Introduction to the system: Fittings for all duct systems

Sealing elements

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Divisible sealing elements

12.1

Protective duct sealings

12.2

Sealing plugs

12.3

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12.4

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Jointed duct bends

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Connecting elements

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Transition fittings

14.1

Transition duct socket

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Double clamp fittings

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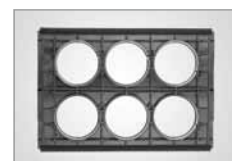
Repair set for multi pipes

15



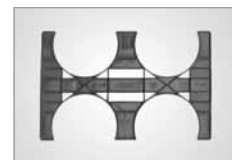
Ducting terminal panels

16



Spacers

17



Protective half shells

18



Common fittings: Technically mature products concerning cable and pipe

gabocom has specialised in the production of innovative duct systems for telecommunication companies and network providers. Together with the special requirements of these future-oriented business fields also the assortment of gabocom continuously has increased. Nowadays it comprises a wide range of gas-, water- and dirt-tight accessories. These products can be combined in new and existing pipe ways for individual quality solutions.

On the following pages you will make a find from the sealing element up to the half shell for protective ducts. Take advice from your personal contact person concerning your choice.

The advantages of the common fittings at a glance:

- gabocom products are manufactured out of best raw materials and are characterised by a particularly high quality and durability.
- They are available in various dimensions which allow a utilisation meeting all demands.
- Their assembly is possible in new as well as in existing pipe ways.
- All fittings are gas-, water- and sand-tight.
- The simple handling saves time and costs.

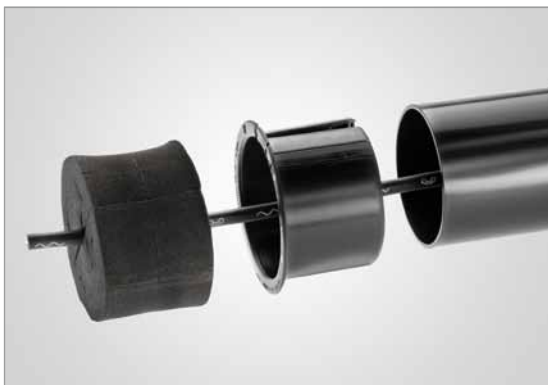
Patented fittings for all demands

With the sealing elements gabocom offers optimised solutions for the sand- or gas- and water-tight sealing of existing and new duct networks depending on the application.



12.1 Divisible sealing elements

The divisible sealing elements ensure the gas- and water-tight sealing of empty ducts or ducts occupied with cables.



12.2 Protective duct sealings

The protective duct sealings allow the sealing against sand of empty ducts or ducts occupied with cables.



12.3 Sealing plugs

The sealing plugs ensure the gas- and water-tight sealing of insertion ends and sockets up to 0.5 bar.



12.4 Sealing caps

The sealing caps are suitable for the protection of ducting terminal panels and vents against the penetration of sand.



12.5 Divisible sealing and fixing discs

With the divisible sealing and fixing discs gabocom offers an optimised solution for the gas- and water-tight sealing of the cavity between the cable duct and the multi pipe.



12.6 Cable end caps

The cable end caps ensure the gas- and water-tight sealing of cable ends.



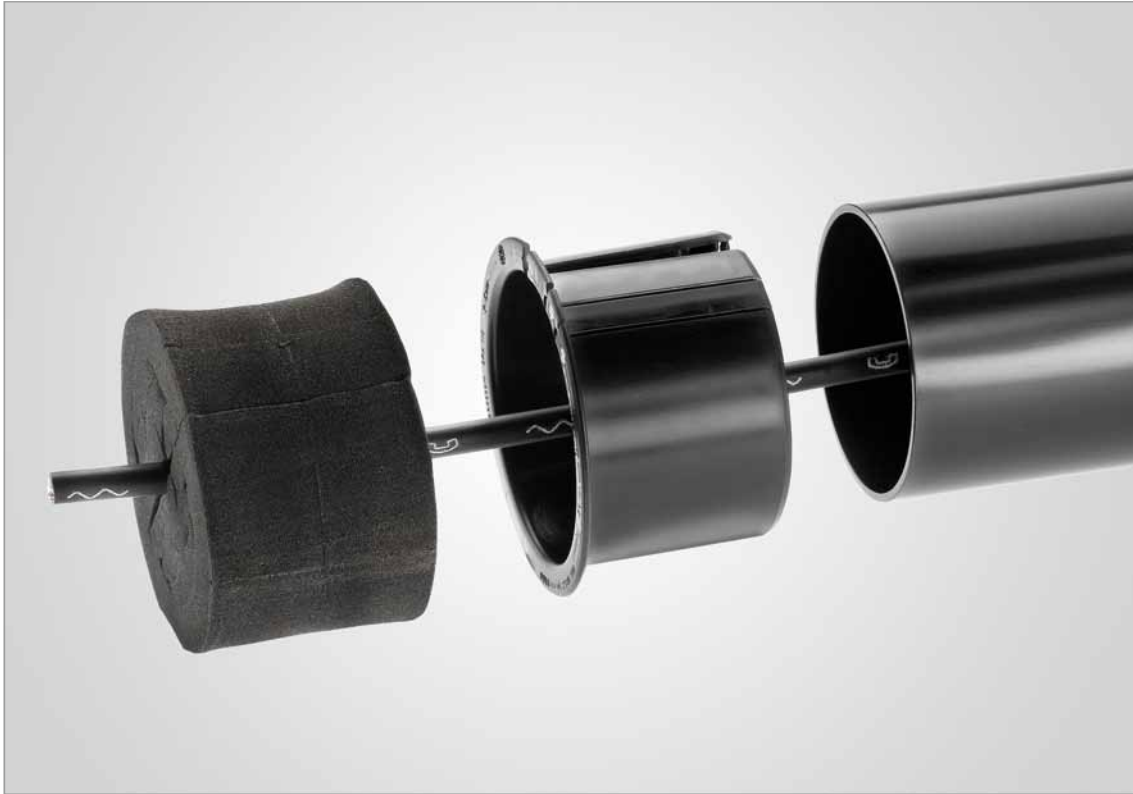
Divisible sealing element

Product advantages

- The divisible sealing elements EZA-t allow the gas- and water-tight sealing of empty ducts and ducts occupied with cables up to 0.5 bar.
- They are also applicable for fixing against elongations due to temperature changes.
- The high-quality fittings are reusable and can easily and quickly be installed.

Ordering data

Term	D (mm)	Sealing range of cable (mm)	Pcs. / unit	Item no.
EZA-t 32 / K	32	1 cable (10.5 - 21.5)	12	00271
EZA-t 40 / K	40	1 cable (10.5 - 25.5)	12	00272
EZA-t 40 / 2K	40	1 cable (10.5 - 16.0) and 1 cable (10.5 - 18.5)	12	00527
EZA-t 50 / K	50	1 cable (21.5 - 34.0)	12	04344
EZA-t 50 / 2K	50	1 cable (10.5 - 16.0) or 1 cable (10.5 - 25.5); at occupation with 2 cables: total of both cable diameters \leq 30.0	12	00274
EZA-t 50 / 3K	50	2 cables (10.5 - 16.0) and 1 cable (10.5 - 18.5)	12	00277
EZA-t 63 / K	63	1 cable (21.5 - 34.0)	12	01846
EZA-t 63 / 2K	63	1 cable (10.5 - 16) or 1 cable (10.5 - 25.5); at occupation with 2 cables: total of both cable diameters \leq 30.0	12	01797
EZA-t 63 / 3K	63	2 cables (10.5 - 16.0) and 1 cable (10.5 - 18.5)	12	01817



Protective duct sealing

Product advantages

- The protective duct sealings SRA are used at road crossings and for unoccupied cable ducts against the penetration of sand.
- Due to the pre-cut sealing frame, ducts occupied with cables can be protected against alluvial sand.
- The high-quality fittings are suitable for cable duct sockets and insertion ends.
- They can easily and quickly be installed and substitute insecure temporary solutions.
- No tools are necessary in case of removal for a future reuse.

Ordering data

Term	D (mm)	Sealing range of cable (mm)	Pcs. / unit	Item no.
SRA 50	50	40.0 - 50.0	24	04271
SRA 110	110	99.0 - 110.0	18	02998
SRA 125	125	110.0 - 120.0	22	03357
SRA 140	140	125.0 - 134.5	20	07567



Sealing plugs

Product advantages

- The sealing plugs AdS ensure the gas- and water-tight sealing of insertion ends and sockets up to 0.5 bar.
- As soon as the toggle is turned over, the sealing is guaranteed and the correct installation is obvious.

Ordering data

Term	D (mm)	Sealing range (mm)	Pcs. / unit	Item no.
AdS 50	50	39.5 - 50.5	20	05997
AdS 110	110	97.5 - 111.0	18	06135
AdS 125	125	118.0 - 126.0	18	06144



Sealing caps

Product advantages

- The sealing caps AdK of PVC-U are used for sealing unoccupied cable ducting terminal panels and vents.
- They are also applicable for closing the socket ends of PVC-U ducts.

Ordering data

Term	D (mm)	Pcs. / unit	Item no.
AdK 50	50	400	03867
AdK 110	110	100	03398



Divisible sealing and fixing discs

Product advantages

- The divisible sealing and fixing discs AdSe-t are used for sealing and fixing the remaining cavity between the cable duct, split duct or multi pipe.
- The fittings are gas- and water-tight up to 0.5 bar and are also suitable for the subsequent installation for an occupied or pulled through multi pipe.

Ordering data

Term	Application for	Colour of cover disc	Pcs. / unit	Item no.
AdSe-t 110×3.2	PVC duct 110×3.2 / KKHR 110×3.2	black	20	01264
AdSe-t 110×3.4	PP duct 110×3.4 / KKF 110	green	20	00309
AdSe-t 110×4.3	PE duct 110×4.3 / Steel duct 108×3.6	white	20	00292
AdSe-t 125×3.7	PVC duct 125×3.7	black	18	03354



Cable end caps

Product advantages

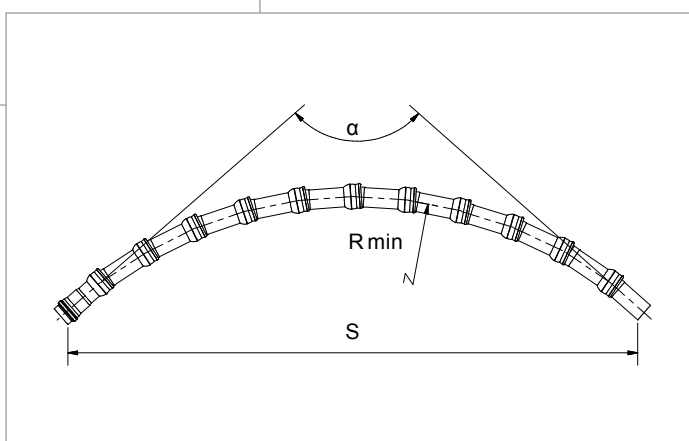
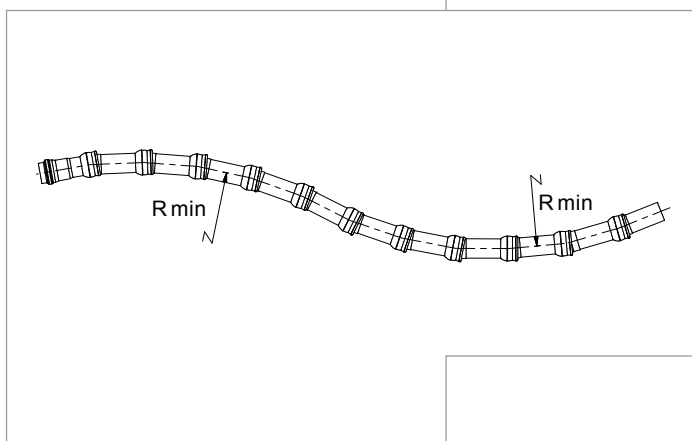
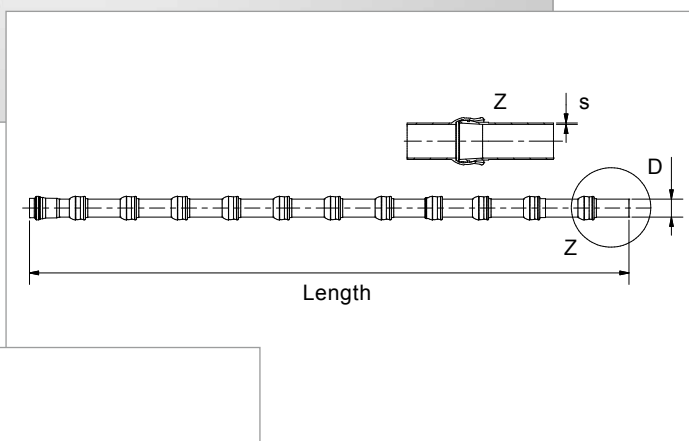
- The cable end caps KEK are the low-cost alternative to high-priced shrink sleeves and are applicable for the gas- and water-tight sealing of cable ends.
- They are used during production, transport, storage and on the construction site.
- The easy installation of the reusable fittings (up to 40 times) saves energy and time and substitutes the use of a gas torch.

Ordering data

Term	Sealing range of cable (mm)	Pcs. / unit	Item no.
KEK 8.0-17.0	8.0-17.0	100	01865
KEK 15.0-24.5	15.0-24.5	30	01866



Jointed duct bends



Product advantages

The jointed duct bends KKGB and the divided jointed duct bend KKGB-t were developed for different application possibilities:

- For redirecting the pipe way in case of obstacles or external plants like gas or district heating pipelines
- In case of height or lateral differences of the pipe way
- In case of changes in the pipe way level due to slopes or subsidence when crossing the road
- For skipping obstacles within a bend area
- For branching off and refixing ducts onto the pipe way
- In case of local tightness at distribution boxes, cable manholes or distribution stations
- For connection ranges that do not align
- Generally in rough terrain

The flexible duct bends with socket and insertion end include the smallest possible bending radius limit. Furthermore they are gas- and water-tight up to 0.5 bar.

Ordering data

Term	D×s (mm)	R min (m)	α	Length (m)	S (m)	Pcs. / unit	Pcs. / pallet	Item no.
KKGB 50 / 1.0m / 90°	50×1.8	1.0	90°	1.65	1.44	3	60	00540
KKGB 110 / 1.0m / 90°	110×3.2	1.0	90°	1.94	1.56	3	45	03328
KKGB 110 / 2.5m / 45°	110×3.2	2.5	45°	2.03	1.95	3	45	03228
KKGB 110 / 8°	110×3.2		8°			18	72	03992
KKGB-t 110 / 8°	110×3.2		8°			4	36	03968

Safe junctions from duct to duct

gabocom offers sand-, gas- and water-tight junction and connection possibilities. These are convenient for empty as well as for occupied duct networks.



14.1 Transition fittings

The transition fittings connect cable ducts and cable duct blocks.



14.2 Transition duct socket

The transition duct socket allows the connection of PE-HD culvert pipes to cable ducts.



14.3 Duct adaptor

The duct adaptor is used as transition elements in sockets.



14.4 Connector

PE-HD ducts are connected with this fitting.



14.5 Double clamp fittings

The double clamp fittings connect PE-HD ducts.



Transition fittings

Product advantages

- The transition fitting ÜFT connects cable ducts with cable duct blocks and is manufactured out of PVC-U.
- For cable duct blocks which are already occupied with cables gabocom developed the divided transition fitting ÜFT-t out of PVC-U.

Ordering data

Term	D (mm)	Length (mm)	Pcs. / unit	Pcs. / pallet	Item no.
ÜFT 110	110	1650	1	95	08254
ÜFT-t 110	110	1650	3	153	08255



Transition duct socket

Product advantages

- The transition duct socket UMPE is used for connecting PE-HD culvert pipes to cable ducts.
- The fitting is manufactured out of resistant PVC-U.

Ordering data

Term	D (mm)	Length (mm)	Pcs. / unit	Item no.
UMPE 125	125	690	12	04336



Duct adaptors

Product advantages

- The divisible duct adaptor RAD-t out of PE-HD is used in sockets with a diameter of 110 mm.
- They are also available in the divided version RAD-t out of PE-HD.

Ordering data

Term	D (mm)	Length (mm)	Pcs. / unit	Item no.
RAd-t 110 / 2×50 (40)	110	63	20	01474



Connector

Product advantages

- The connector DSM connects PE-HD ducts in the dimension 50.
- It is resistant to tensile and applicable for being ploughed.
- The fitting is pressure-tight up to 0.5 bar and for a blow-in pressure higher than 10 bar.

Ordering data

Term	D (mm)	Pcs. / unit	Item no.
DSM 50	50	10	12215



Double clamp fittings

Product advantages

- By means of the double clamp fittings DKF, PE-HD ducts of the dimension 50 are connected or reduced from the dimension 50 to 32.
- They are pressure-tight up to 0.5 bar and are suitable for a blow-in pressure higher than 10 bar.

Ordering data

Term	D (mm)	Pcs. / unit	Item no.
DKF 50 / 32	50 / 32	9	01442
DKF 50	50	25	01441



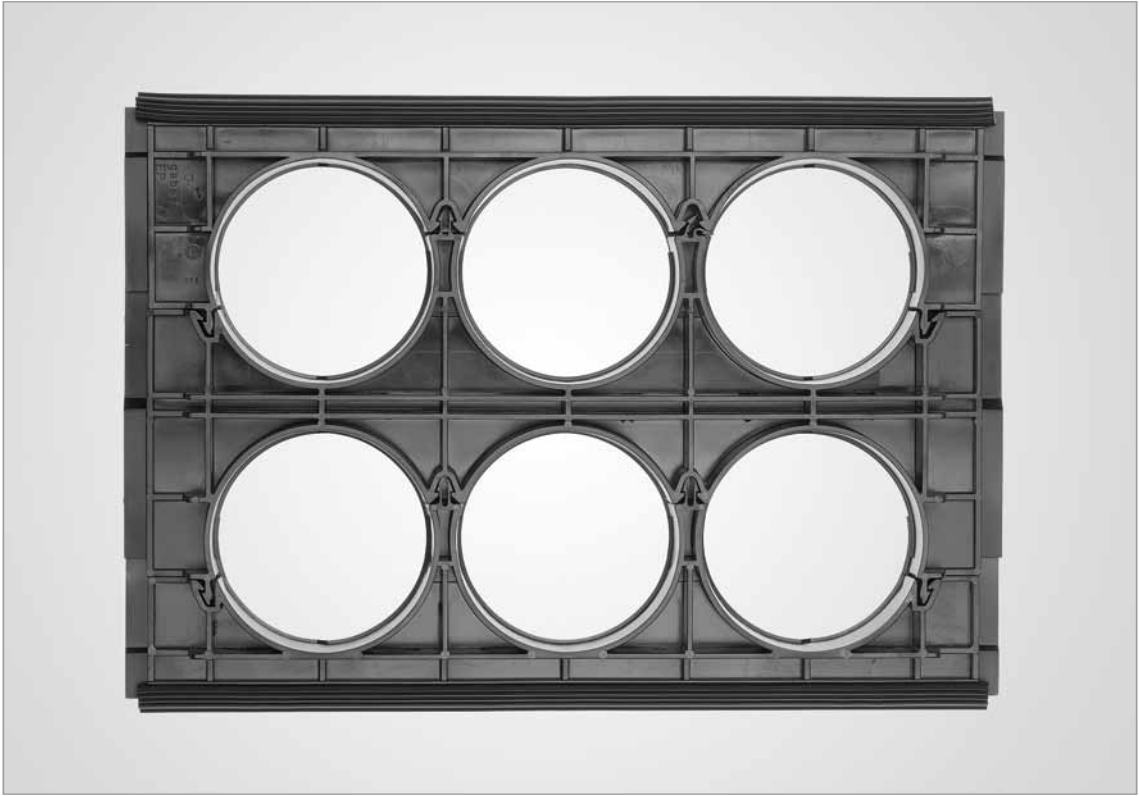
Repair set for multi pipes

Product advantages

- The repair set for multi pipes MR-RS was developed by gabocom for repairing occupied multi pipes and for the connection in manholes.
- The gas- and water-tight system completes the split duct system KKHR 110 (refer to chapter 6, 7 and 8).
- It is compatible with multi pipes of the dimension 2×32 and 2×40 and can easily be installed.

Ordering data

Term	D (mm)	Length (mm)	Pc. / unit	Item no.
MR-RS	32 / 40	4000	1	06348
Consisting of:				
2×split ducts MR-HR 32				
2×split ducts MR-HR 40				
2×connectors MR-VM				



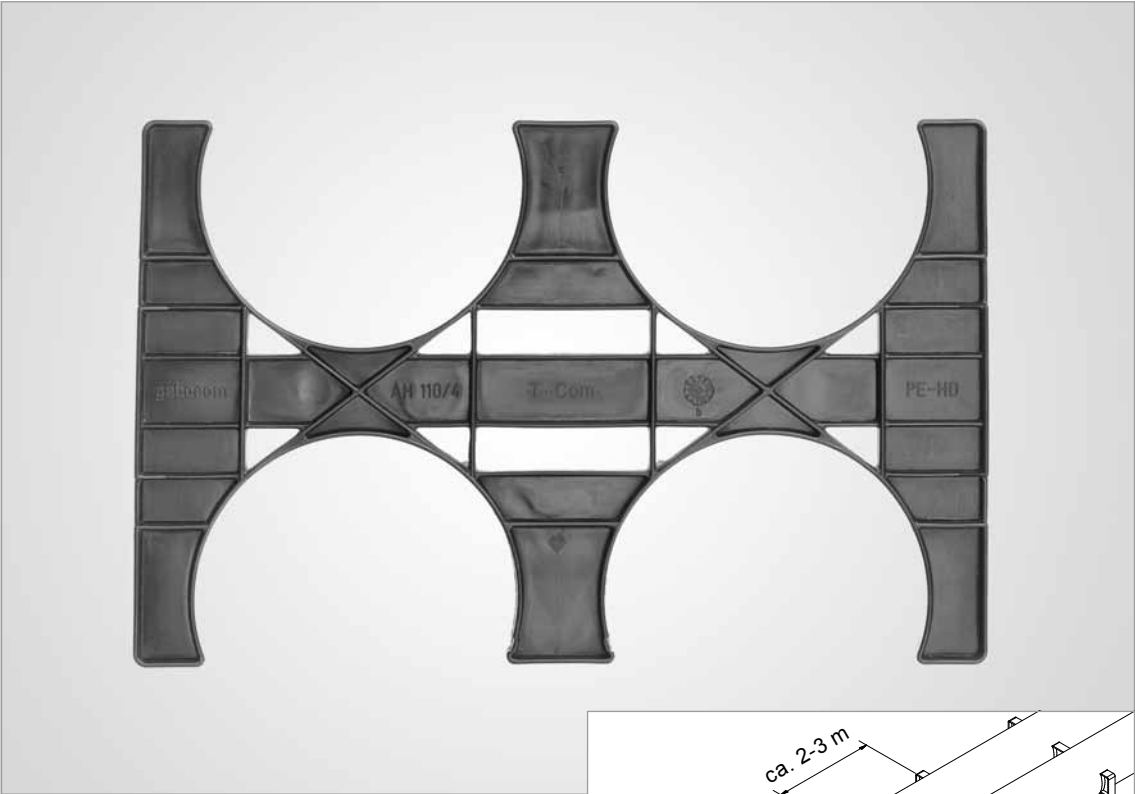
Ducting terminal panel

Product advantages

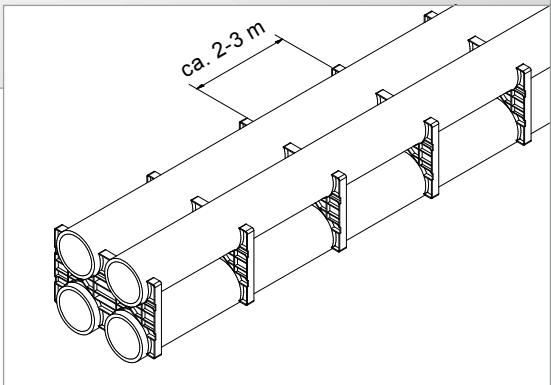
- The ducting terminal panels EP were developed for the insertion of ducts with diameter 110 mm into distribution boxes and small manholes.
- They consist of PE-HD, are self-clamping at the duct and thus easy to install.
- An afterward installation is also possible.

Ordering data

Term	Application for	Pcs. / unit	Item no.
EP 1×110	Azk 83	5	01769
EP 3×110	Azk 86 / KS 88R1	2	00280
EP 6×110	Azk 83 / Azk 86 / KS 88R1	2	00282



Spacer 110 / 4



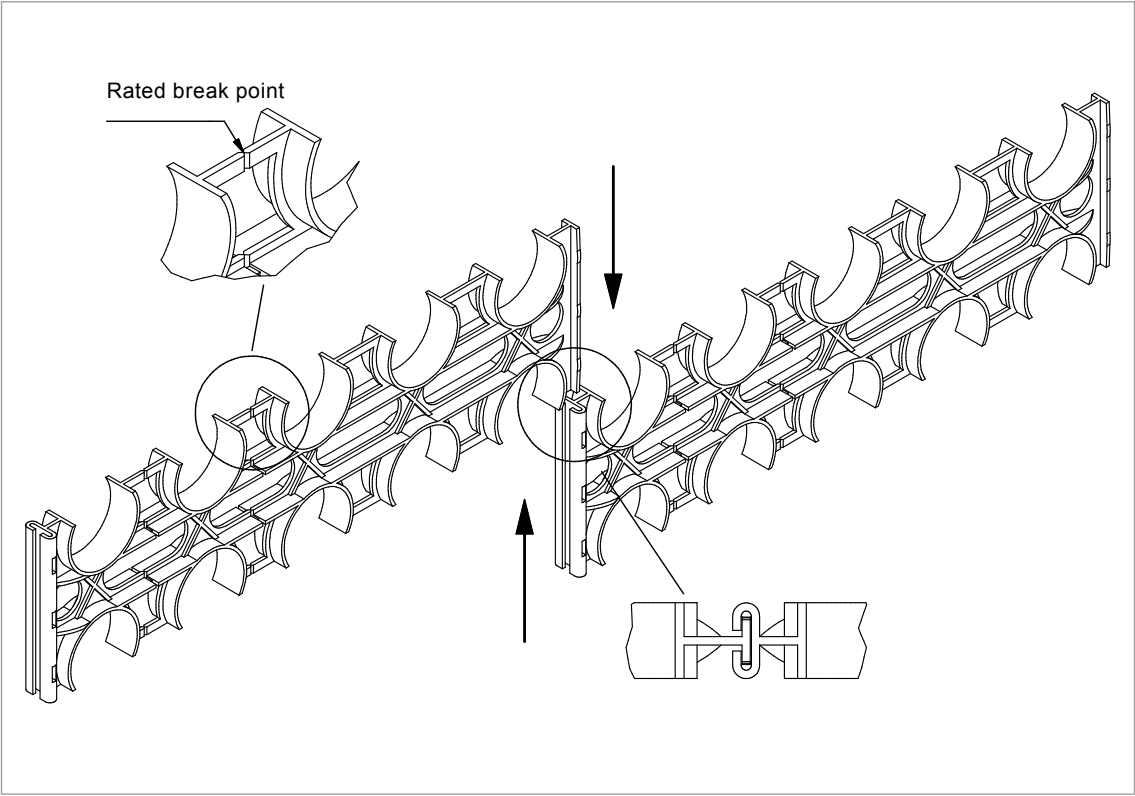
Application example of spacer 110

Product advantages

The spacers AH are used for direct burying and are manufactured out of PE-HD.

Ordering data

Term	Length (mm)	Pcs. / unit	Item no.
AH 50 / 3 + 110 / 2	294	50	00208
AH 110 / 4	294	50	00209
AH 110 / 6	433	50	00210
AH 110 / 8	573	50	00211



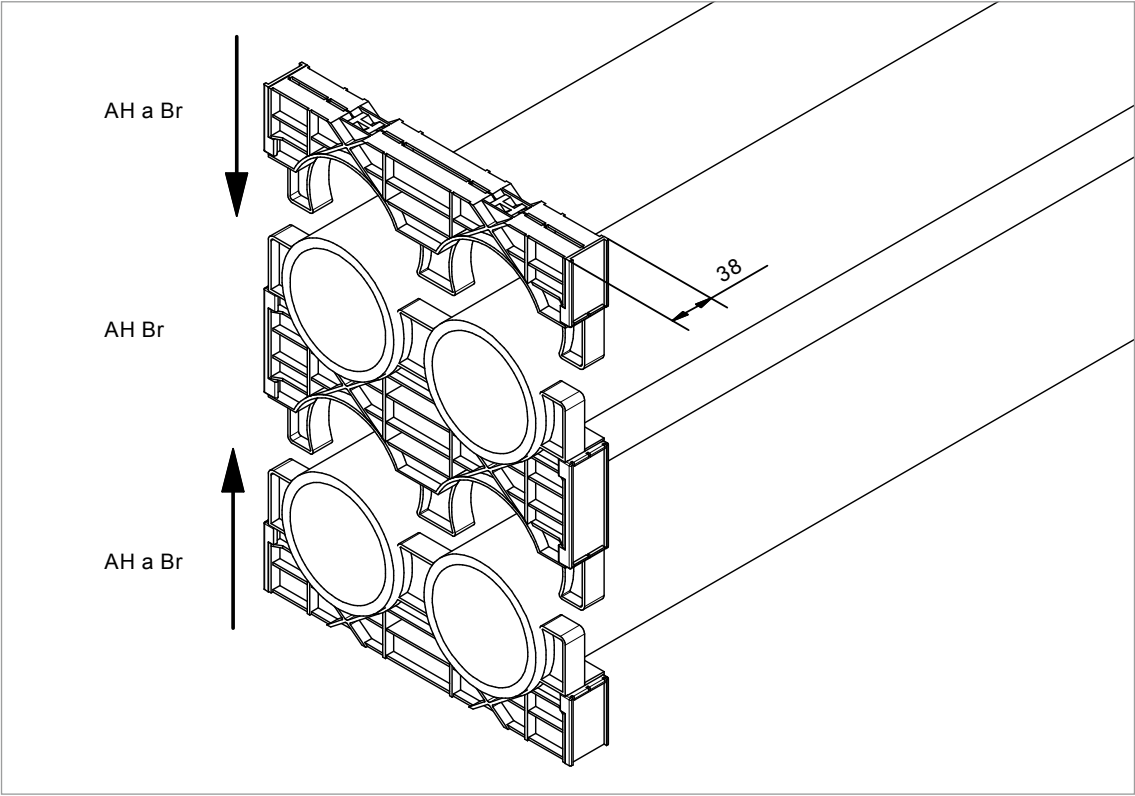
Extension of spacer 50 / 10

Product advantages

The spacer AH is used for direct burying. It is manufactured out of durable PVC-U and can be divided and extended.

Ordering data

Term	Length (mm)	Pcs. / unit	Item no.
AH 50 / 10	400	50	07563



Assembly of spacer for bridge construction 110 Br

Product advantages

The spacers AH are suitable for the above ground laying and are manufactured out of high-quality PE-HD.

Ordering data

Term	Length (mm)	Pcs. / unit	Item no.
AH 110 / 4 a Br	304	40	04603
AH 110 / 6 a Br	443	25	04605
AH 110 / 8 a Br	583	30	04388
AH 50 / 3 + 110 / 2 Br	304	15	04601
AH 110 / 4 Br	304	30	04604
AH 110 / 6 Br	443	15	04606
AH 110 / 8 Br	583	15	04389



Protective half shells and half shell sleeve

Protective half shells 110

The protective half shells HS protect communication and power cables being laid above ground. Furthermore they meet all requirements for repairing half shells for sand-tight cable protection ducts. They consist of two half shells with snap lock and are manufactured out of UV-resistant PVC-U. Due to its white colour the extension caused by solar radiation is kept low. The easy handling allows a fast installation. The half shells are reusable.

Ordering data					
Term	D×s (mm)	Length (mm)	Pcs. / unit	Pcs. / pallet	Item no.
HS 110	110×3.2	3000	3	78	04222
HS 110	110×3.2	6000	3	78	07757

Half shell sleeve 110

The divided half shell sleeve HSM is equipped with two fixing clamps and is manufactured out of PVC-U. The UV-resistant white fitting is sand-tight and reusable.

Ordering data

Term	D (mm)	Length (mm)	Pcs. / unit	Item no.
HSM 110	110	180	12	07749

Assembly tool for protective half shells

By means of the divisible assembly tool KKHRG the protective half shells can professionally be installed.

Ordering data

Term	D (mm)	Pc. / unit	Item no.
KKHRG 110	110	1	01930

Half shell branch

The half shell branch HSA is used for passing through and branching cables. It is divided along its longitudinal axis and is tensile in the master as well as in the branching direction. The fitting is sand-tight and can easily and quickly be installed.

Ordering data

Term	D1 (mm)	D2 (mm)	α	Pcs. / unit	Item no.
HSA 110 / 50-90°	110	50	90°	5	12233

Product advantages

- Flexible and compatible duct systems
- Divisible, gas- and water-tight fittings
- Significantly lower civil engineering costs
- Optimum utilisation of existing duct networks
- Simple and cost-saving branching
- Individual cable occupation