

Product brochure

# Drainage systems – road and track construction



with perfectly matched components

## Challenge of road drainage

**Stormwater runoff from roads is considered wastewater according to Section 54 of the Federal Water Act (*Wasserhaushaltsgesetz*) and must be collected, reliably discharged and treated. Our drainage systems reliably and sustainably meet all the requirements in handling polluted surface water and infiltration water in road drainage. We have a suitable solution whatever the challenge may be!**

Where surface water cannot be discharged naturally, it needs to be reliably collected and then discharged. Properly functioning drainage is one of the crucial requirements for reliable usability and long service life of roads and tracks.

Water is often a hindrance on the road, and it can cause danger to road users due to aquaplaning or icing. Even the pavement itself can be damaged due to washing-out or frost. These hazards can be eliminated by means of road drainage with appropriate pipe systems. Drainage systems help to collect and discharge surface water, water from the soil and/or road superstructure, and water coming from external sources. Drainage and transport pipes are used to collect, channel or discharge the different types and amounts of water.

Flushing and inspection shafts are essential to guarantee that drainage systems work reliably.

# Table of contents

## Surface water in road drainage 5

AquaPipe – transport pipe SN 8 (PE-HD)	6
AquaDock – 90° connection	10
AquaFlex – flexible connection pipe	11

## Infiltration water in road drainage 13

Strabusil – drainage pipe SN 4 (PE-HD)	14
StormPipe – drainage pipe SN 8 (PE-HD)	18
Strasil – drainage pipe SN 4 (PVC-U)	22

## Flushing and inspection shafts in road drainage 27

General information on flushing and inspection shafts	28
Overview of shafts	30
StrabuControl / StrabuControl HP	32
StrabuControl 600 / StrabuControl 600 HP	33
StrabuControl 600 V / StrabuControl 600 V HP	34
AquaTrafficControl / AquaTrafficControl HP	35
AquaTrafficControl V / AquaTrafficControl V HP	36
Shaft covers	37
Installation situations	38

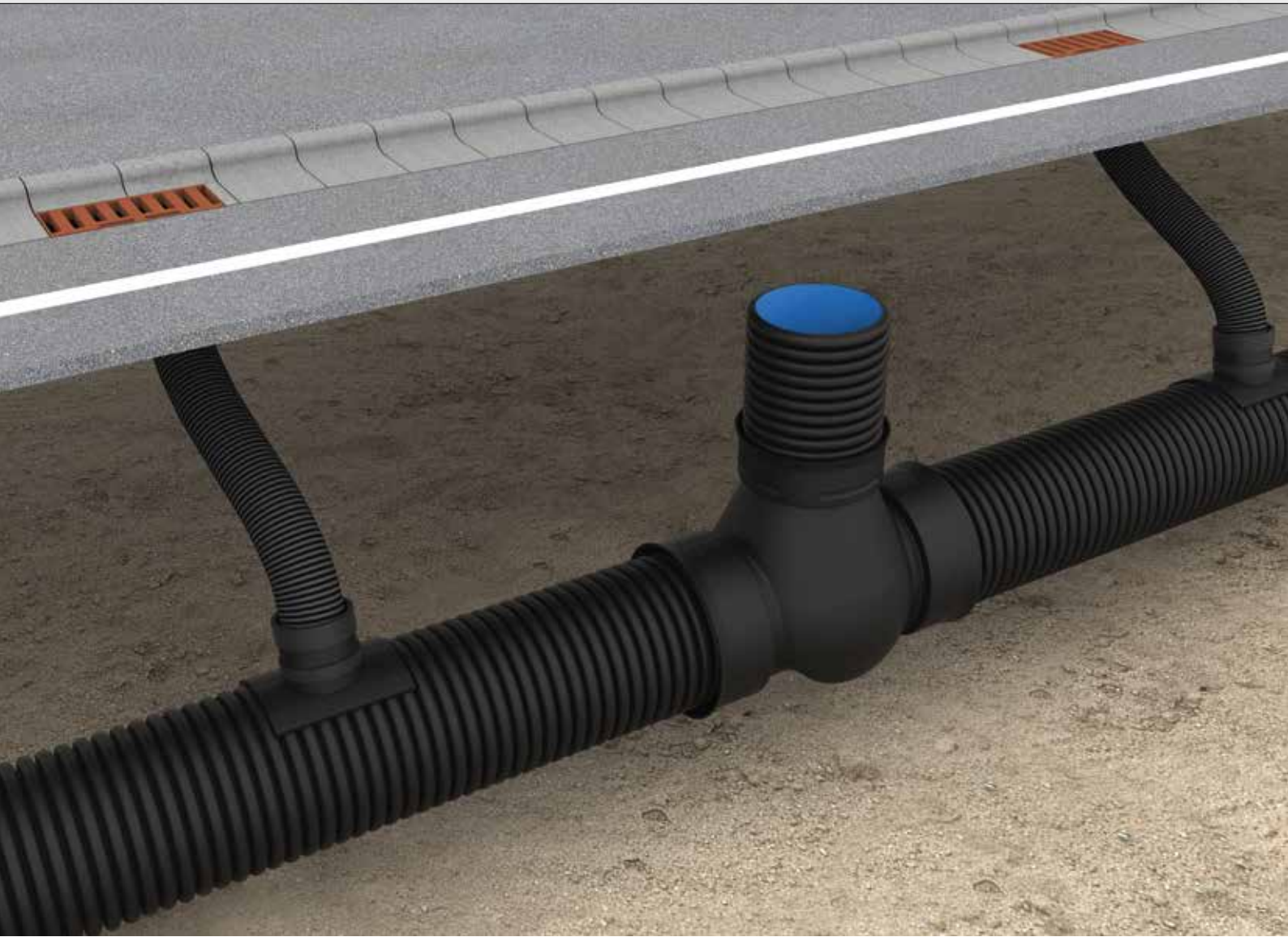
## Product range overview 41

AquaPipe and accessories	42
Strabusil and accessories	48
StormPipe and accessories	52
Strasil and accessories	56
StrabuControl and accessories	60
StrabuControl 600 and accessories	62
AquaTrafficControl and accessories	65

## Information concerning DIN 4262-1 68

## Contact 69





## Surface water in road drainage

Impervious road surfaces prevent the groundwater that accrues in rainfall events from infiltrating, thus jeopardising road traffic, and must therefore be discharged in a controlled and reliable manner.

# AquaPipe® – transport pipe SN 8 made of PE-HD

## AquaPipe® – straightforward installation

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AquaPipe, the transport pipe to discharge polluted surface water from **roads and highways** and municipal surface water from **residential, commercial and industrial areas**, and to **discharge stormwater into receiving waters**.

Collected road surface water must be discharged into leak-tight pipe systems according to the "Directive relating to road construction (RAS), Part: Drainage" (RAS-Ew) (*Richtlinien für die Anlage von Straßen (RAS), Teil: Entwässerung*). With its proof of leak tightness according to DIN EN 1277, AquaPipe complies with all leak tightness requirements of RAS-Ew, DIN EN 13476-3 and DIN EN 1610.

AquaPipe is made of polyethylene (PE-HD) in tried-and-tested structured-wall design as described in DIN EN 13476. The structured-wall design leads to a high ring stiffness of SN 8 according to DIN EN ISO 9969 and pipe profile class 5 according to DIN 16961. AquaPipe complies with DIN 4262-1.

This covers virtually any application in the drainage of traffic areas.

The PE-HD pipe material features a very high chemical resistance against nearly any compound, even in high concentrations.

AquaPipe features a corrugated black outside and a smooth blue inside. Inside and outside are homogeneously welded along the corrugation troughs.

AquaPipe is available in lengths of 1 m, 3 m and 6 m and in nominal widths ranging from DN 150 to DN 800.

The AquaDock retrofit connection and the AquaFlex flexible connection pipe complete the range of accessories.

The low weight of AquaPipe has many advantages for on-site transportation and installation.

## Most important advantages at a glance:

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- Lengths of 1, 3 and 6 m
- DN 150 – DN 800
- PE-HD structured-wall pipe according to DIN 16961
- Ring stiffness SN 8 according to DIN EN ISO 9969
- Pipe profile class 5 according to DIN 16961
- Proof of leak tightness according to DIN EN 1277 for at least 0.5 bar; complies with leak tightness requirements of DIN EN 1610 and DIN EN 13476-3
- Easy handling thanks to low weight
- Complete range of accessories
- Inspection-friendly thanks to blue inside
- Very high chemical resistance
- Proof of jetting resistance according to DIN 19523
- Suited for SLW 60 / HGV 60



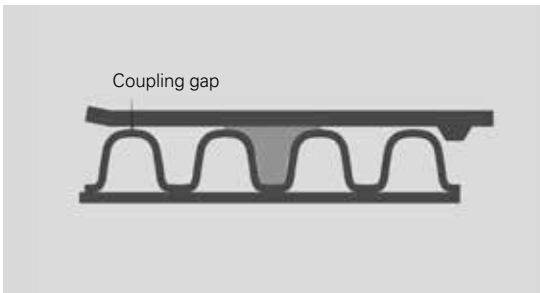
# Discharging surface water safely

## Sealing ring with enhanced safety

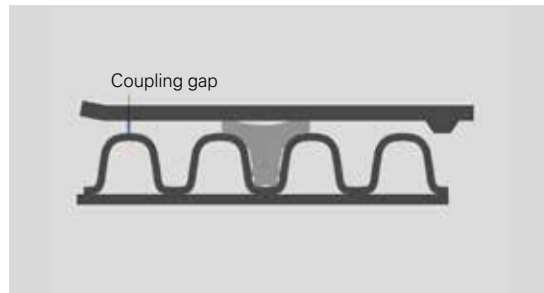
The leak tightness of the pipe system has been tested externally according to DIN EN 1277 for at least 0.5 bar. The EPDM sealing ring has very large sealing lips.

This is hardly needed for proper installations with normal coupling gaps.

If, however, due to misinstallation or, e.g., settling of the ground in the area of the shaft connection, a wide coupling gap shows, the sealing system still remains leak-tight.



Proper installation resulting in a normal coupling gap.



Installation resulting in a larger coupling gap.  
The sealing ring still remains leak-tight.

### **NB**

With its proof of leak tightness according to DIN EN 1277, AquaPipe complies with all leak tightness requirements of RAS-Ew, DIN EN 13476-3 and DIN EN 1610.



# Impresses with excellent hydraulics ...

## Hydraulic properties

The following limit values referring to the inside diameter (d) of the pipe are used as reference for the selection of the slope I:

Max.  $I = 1 : d$  (d in cm)

Min.  $I = 1 : d$  (d in mm)

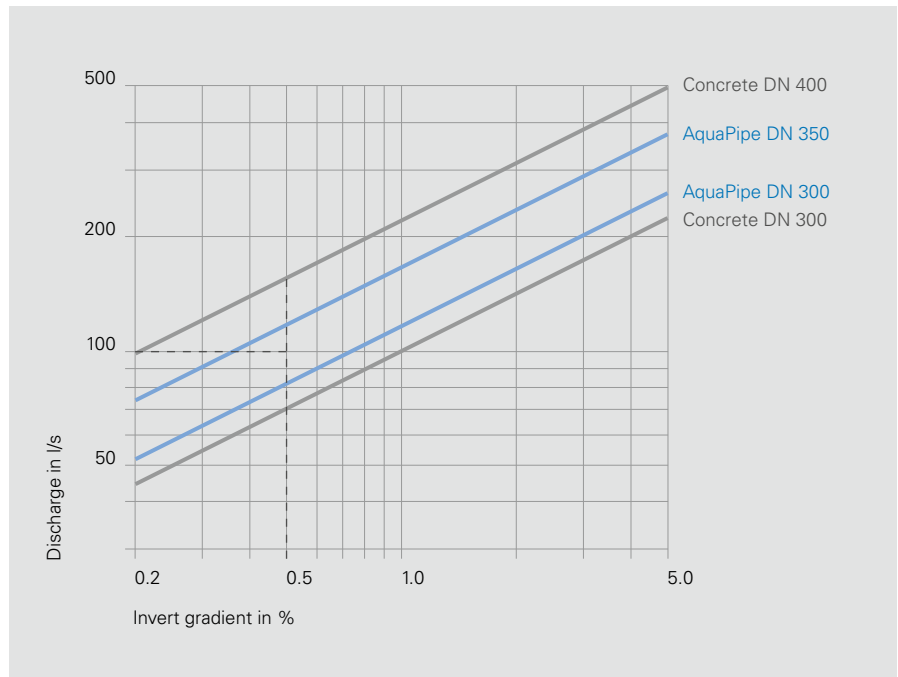
(I greater than or equal to 0.3 % recommended according to RAS-Ew)

The flow velocity with reference to the calculated water amount should not fall below 0.5 m/s.

Flow velocities of 6 to 8 m/s can be permitted depending on the selection of the pipe material.

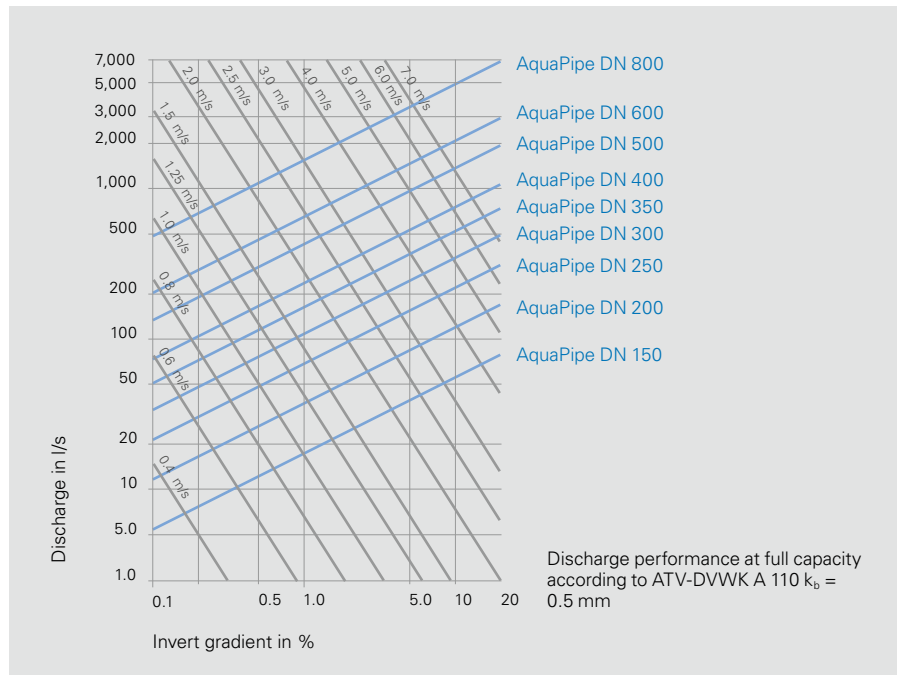
The hydraulic chart can be used to determine the discharge performance (at full capacity).

The hydraulics were determined using the ATV-DVWK regulation A 110 based on the operative roughness ( $k_b = 0.5$  mm).



Example: AquaPipe DN 350 is appropriate for 100 l/s discharge with an invert gradient of 0.5 %. DN 400 would be required in concrete.

The chart shows the discharge (l/s) and flow velocity (m/s) depending on nominal diameter (DN) and invert gradient (%).



The discharge (l/s) and flow velocity (m/s) depending on nominal diameter (DN) and invert gradient (%)



## ... and proven stability

### Loading

The high ring stiffness of AquaPipe ensures a high degree of reliability. If installed correctly (DIN EN 1610, DWA-A 139), – for standard installations as described below with high traffic loads – the deflection value is significantly below the admissible deflection value of 6.0 % according to DWA-A 127.

However, the deflection chart does not replace the project-specific pipe stress analysis according to DWA-A 127.

In addition to the deflection analysis, the static verification includes a stress and stability analysis.

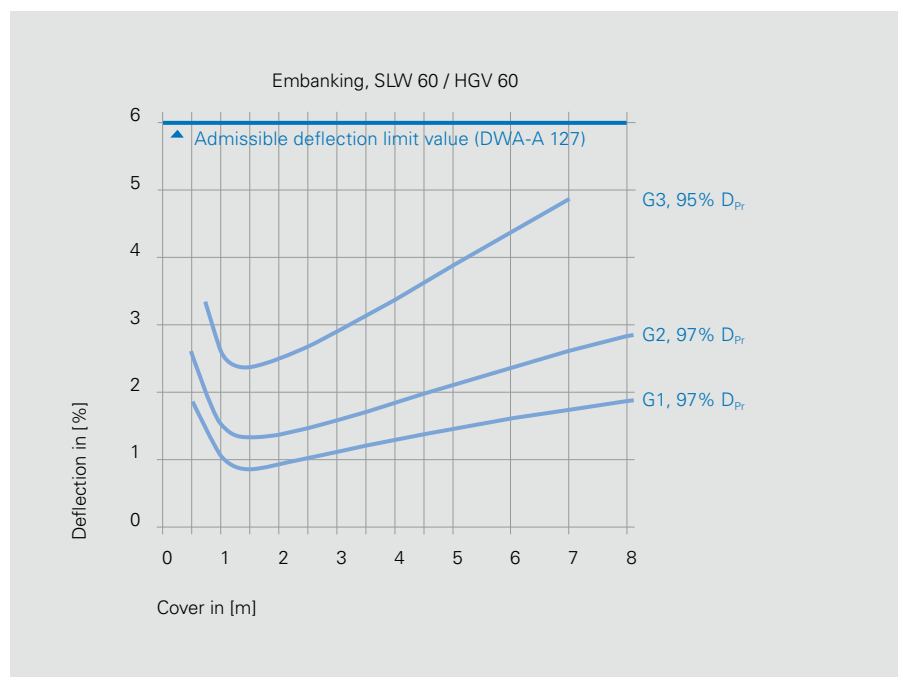
The validity range of the chart complies with the safety factors of 2.5.

#### NB

Please refer to the relevant DIN EN 1610, DWA-A 139, DWA-A 127 standards and our installation manual for detailed information.

The following installation conditions apply to the deflection chart on the right (average of all nominal diameters):

- AquaPipe DN 150 – DN 800
- Embanking
- Soil cover 0.5 – 8.0 m
- SLW 60 / HGV 60 traffic loads
- Piping zone – soil of the groups:
  - G3** / cohesive mixed soils and coarse clay (topmost curve)
  - G2** / slightly cohesive soils (middle curve)
  - G1** / cohesionless soils (lowest curve)
 See also soil class 3 according to DIN 18300; bedding angle 180°, loose bedding.
- Native soil and backfill G3 with 95 %  $D_{Pr}$



Applies to the installation conditions on the left only!

## AquaDock®/saddle – watertight and reliable 90° connections

### AquaDock®

AquaDock allows the watertight and reliable connection of lateral inlets of AquaFlex DN 150 to AquaPipe. AquaDock has been designed as 90° connection for AquaPipe DN 300 to DN 600. The set includes AquaDock, a DN 150 profile sealing ring and an installation manual.

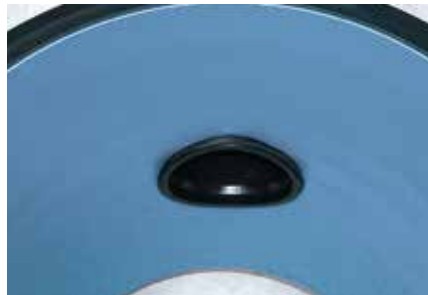
Both new and existing pipe systems can be connected. It offers high reliability as compared to push-fit solutions with, e.g., sealing collars. Use the AquaDock hole saw (Ø 178.5 mm) to cut a hole into the collector.

The drill stand helps to cut a clean hole.

Hole saw and drill stand are part of our range of products. AquaDock can be easily installed using the installation wrench.



Readily installed AquaDock



Interior view

#### NB

Please see our installation manual for more detailed information.

### Advantages

- Watertight 90° connection
- Suitable for both new and retrofit installations
- For DN 300 – DN 600
- No heavy drilling equipment required
- Easy, uncomplicated installation
- Only minimum reduction in the cross-sectional area of the collector pipe

### Saddle

The saddle allows the watertight and reliable connection of AquaPipe/AquaFlex DN 200 to AquaPipe DN 300 and higher, and AquaPipe/AquaFlex DN 150 to AquaPipe DN 800. Both new and existing pipe systems can be connected.

The set comprises the saddle, a profile sealing ring DN 150 and/or DN 200, a KG adapter DN 150 and/or DN 200 and installation instructions. Use our saddle hole saw (standard drilling machine greater than or equal to 1,000 watts required) to cut a hole (Ø 214.5 mm or Ø 220 mm) into the collector pipe.

We recommend using our drill stand.



## AquaFlex® – flexible connection pipe

AquaFlex is a flexible PE structured-wall pipe in nominal diameters of DN 150 and DN 200 designed for use as a connecting pipe between road gully and drainage pipe.

AquaFlex is a R2 pipe type according to DIN 4262-1. The corrugated pipe design provides a high ring stiffness.

A DN 150 shaft coupling is available for factory-provided installation in the bottom of the road gully (1a) according to DIN 4052. It allows AquaFlex to be directly connected to the road gully.

Thanks to its flexibility, no accessories such as bends are required in general. Its flexibility ensures tension-free installation.

Small obstacles can be bypassed without any problems if the required slope and the smallest bend radius are observed.



### NB

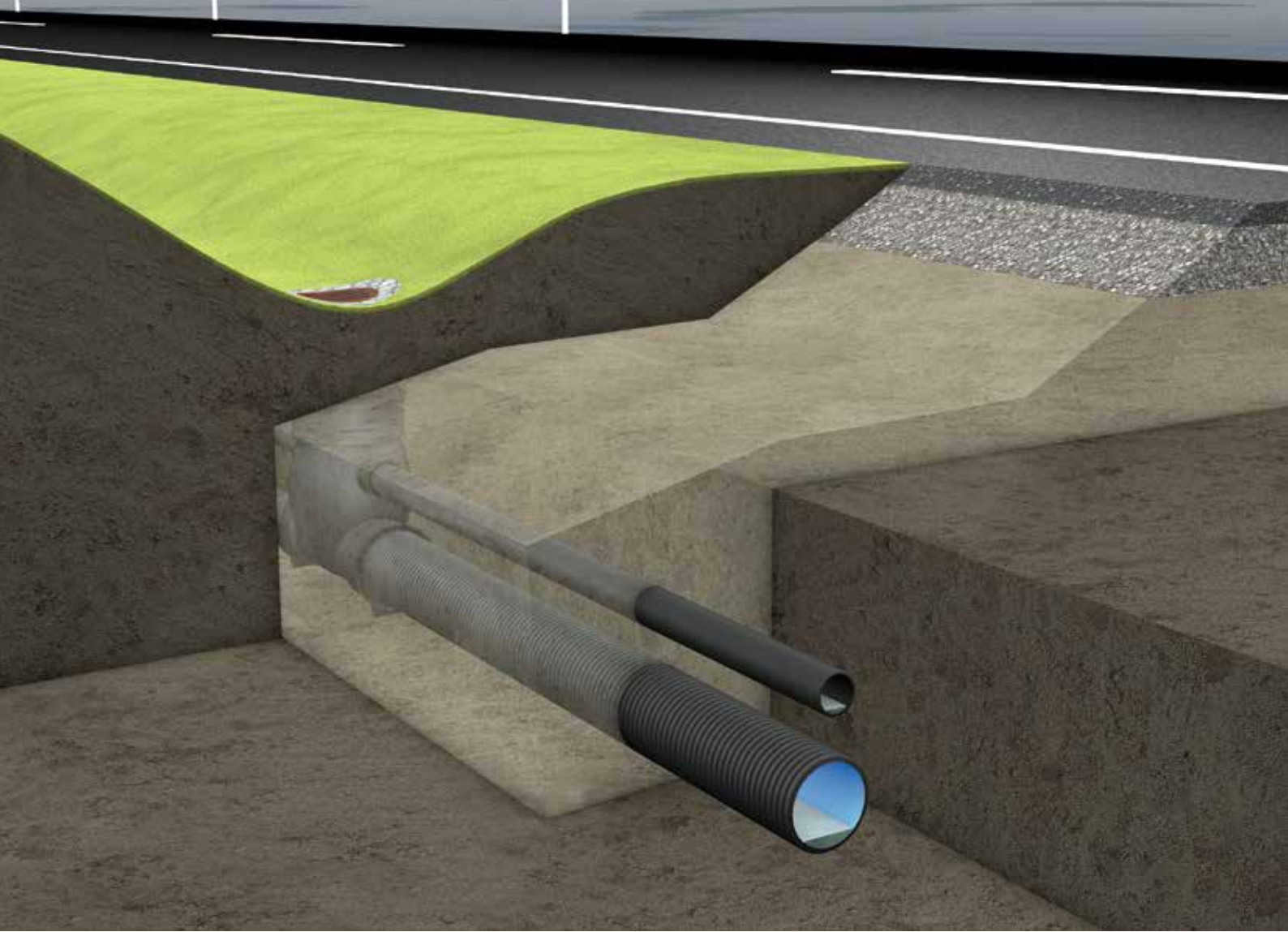
Please see our installation manual for more detailed information.

## Advantages

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- Structured-wall PE pipe, R2 pipe type according to DIN 4262-1
- Ring stiffness SN 8 according to DIN EN ISO 9969
- Economical length of 25 m
- Small bend radii possible
- No additional bends required
- Easy handling
- High chemical resistance
- Suited for SLW 60 / HGV 60





## Infiltration water in road drainage

Drainage pipe systems help collect infiltration water, water from the soil and water from the road surface. For virtually all requirements FRÄNKISCHE provides suitable pipes that comply with applicable standards and are state of the art.

## Strabusil® drainage pipes SN 4 made of PE-HD ...

Strabusil drainage pipes are PE-HD structured-wall pipes (corrugated outside, smooth inside) according to DIN 4262-1 type R2 in ring stiffness class SN 4. The combination of these two properties combines the advantages of the high static strength of corrugated pipes with the high discharge performance of pipes with a smooth inside.


Strabusil drainage pipes are manufactured in 6 m lengths in nominal diameters ranging from DN 100 to DN 400. They are temperature resistant even at sub-zero temperatures. The black colour provides high UV resistance and allows the pipes to be stored outside for longer periods of time. Strabusil drainage pipes are resistant to acids and bases according to DIN 8075 supplementary sheet 1. Strabusil drainage pipes are used according to relevant standards, guidelines and regulations.

The most important are:

- DIN EN 1610
- RAS-Ew
- DWA-A 139
- ZTV A-StB 97/06
- ZTV Ew-StB 14

The perforations are symmetrically arranged along the crown and guarantee optimum water intake thanks to the matched perforation-wall ratio. The perforations are located in the corrugation troughs and protected by a surrounding filter layer so that water can flow freely into the pipe.

### NB

Please refer to the applicable standards EN 1610, DWA-A 139, DWA-A 127 and our installation manual at  [www.fraenkische.com](http://www.fraenkische.com) for detailed information.

## Strabusil® – the pipe

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- High infiltration rate thanks to perfectly arranged perforations and low water infiltration resistance
- Push-fit coupling ensures rapid installation. A profile sealing ring seals MP pipes.
- Extremely high degree of drainage thanks to smooth inside
- High compressive strength and impact resistance thanks to PE-HD structured-wall design
- Easy to install thanks to low weight
- Suited for SLW 60 / HGV 60



## ... tried-and-tested in road and track construction for many years

The perforation area is greater than or equal to  $50 \text{ cm}^2/\text{m}$  per pipe. The crown marking of locally perforated pipes ensures the correct installation of Strabusil so that the perforations are located in the upper half of the pipe.

The tried and tested structured-wall design gives the pipe a high ring stiffness and a low weight. The smooth surface of the pipe inside ensures unimpeded, rapid discharge of water.

Pipe inside and outside are homogeneously welded along the contact surfaces. The combination of maximum water infiltration and discharge performance, low weight, easy-to-handle 6 m lengths, pliability and high static strength make its use easy and safe and its installation economical.

Strabusil drainage pipes have been designed for the reliable drainage of roads, airfields, sports fields and for cases where increased requirements are placed on drainage pipes.

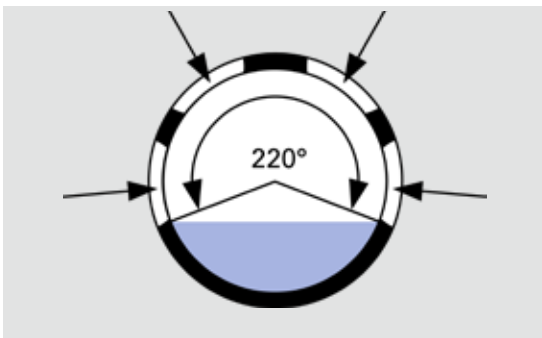


Its low weight facilitates installation. Matching accessories meet all the demands that are placed on easy-to-install drainage technology.

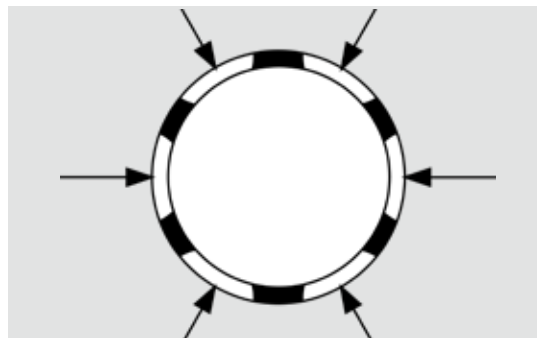
### The different types of perforations

#### Use and function:

**Strabusil locally perforated (LP)** and **totally perforated (TP) pipes** ensure drainage of the ground level and the anti-frost layer. This holds true during and after construction by collecting the accumulating unbound soil water and then transporting it to the receiving waters.

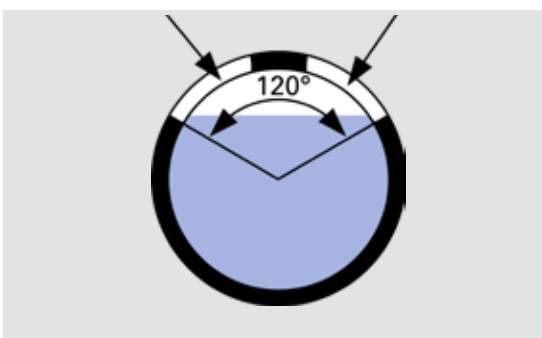


Locally perforated pipe (LP)



Totally perforated pipe (TP)

**Strabusil multi-purpose pipes (MP)** feature both the function of locally perforated pipes and collectors for longer distances. They must store and transport the accumulating surface water if required. As opposed to locally perforated pipes, the coupling connection must provide a watertight (WD) seal according to DIN 4262-1. This is achieved by slipping a profile sealing ring into the second corrugation trough. The connection is sandtight (SD) without a profile sealing ring. Make sure that in the case of watertight connections both the coupling inside and the profile sealing ring must be covered with a sufficient amount of lubricant upon installation.



Multi-purpose pipe (MP)

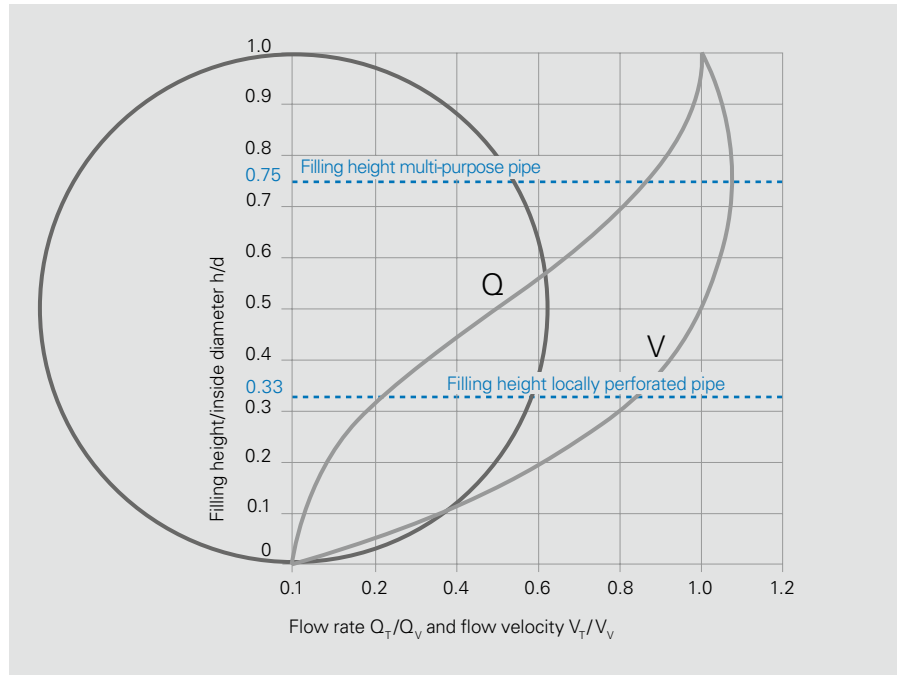
# Strabusil® – high drainage capacity ...

## Hydraulic properties

The partial capacity curve for circular profiles according to the diagram on the right is used to determine partial discharges according to DWA-A 110.

Key:

- $d$  [m] = inside diameter
- $h$  [m] = filling height
- $Q_v$  [m<sup>3</sup>/s] = flow rate at full capacity
- $Q_T$  [m<sup>3</sup>/s] = flow rate at partial capacity
- $V_v$  [m/s] = flow velocity at full capacity
- $V_T$  [m/s] = flow velocity at partial capacity

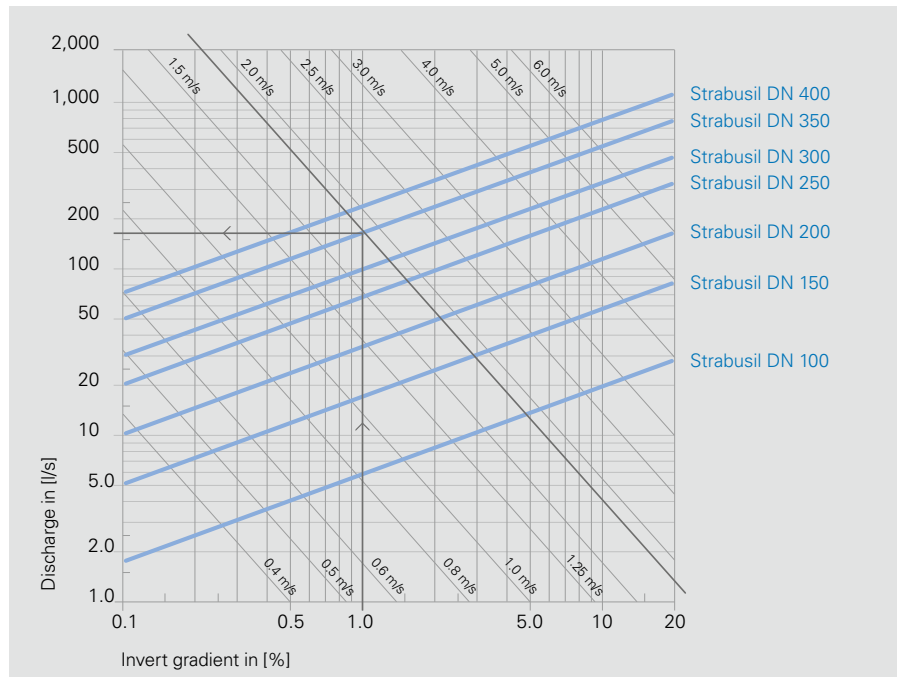


The hydraulic chart can be used to determine the discharge performance (at full capacity).

The hydraulic properties were calculated according to DWA-A 110 and are based on a roughness coefficient of ( $k_b = 0.5$  mm).

The chart shows the discharge (l/s) and flow velocity (m/s) depending on nominal diameter (DN) and invert gradient (%).

If Strabusil multi-purpose pipes (MP) DN 350 are used, a water quantity of approx. 160 l/s or 580 m<sup>3</sup>/h can be discharged at a gradient of 1 % and a flow velocity of approx. 1.8 m/s.





## ... and excellent robustness guaranteed

### Loading

Strabusil drainage pipes are robust and ideal for use in harsh construction site environments. They are impact resistant at sub-zero temperatures.

Strabusil drainage pipes are jetting resistant according to DIN 19523.

The structured-wall design provides high ring stiffness. They can be used wherever high static and dynamic loads must be absorbed. If installed according to standards (DIN EN 1610, DWA-A 139), – for standard installations as described below with high traffic loads – the deflection values calculated using the pipe stress analysis (see chart) are not exceeded. The values do not exceed the admissible deflection value of 6.0 % according to DWA-A 127.

However, the deflection chart does not replace the project-specific pipe stress analysis according to DWA-A 127. In addition to the deflection analysis, the static verification includes a stress and stability analysis.

#### NB

Please refer to the applicable standards DIN EN 1610, DWA-A 139, DWA-A 127 and our installation manual at [www.fraenkische.com](http://www.fraenkische.com) for detailed information.

The following installation conditions apply to the deflection chart on the right (average of all nominal diameters):

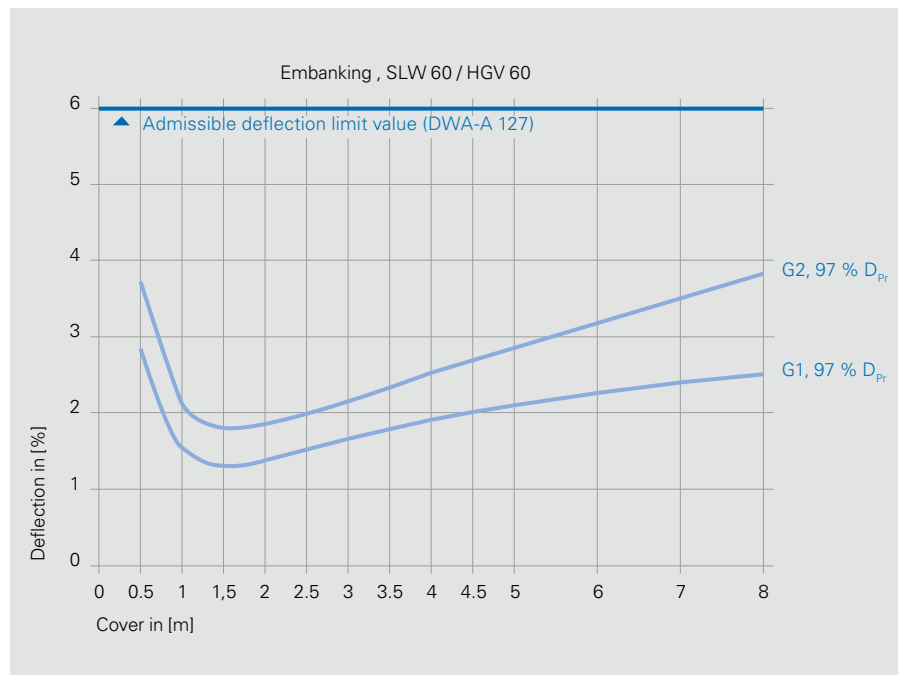
- Strabusil DN 100 – DN 400
- Embanking
- Soil cover 0.5 – 8.0 m
- SLW 60 / HGV 60 traffic loads
- Piping zone – soil of the groups:

**G2** / slightly cohesive soils  
(top curve)

**G1** / non-cohesive soils  
(bottom curve)

See also soil class 3 according to DIN 18300; bedding angle 180°, loose bedding.

- Native soil and backfill  
G3 with 95 %  $D_{Pr}$



Applies to the installation conditions on the left only!

## StormPipe – drainage pipes SN 8 made of PE-HD

StormPipe, drainage pipes for demanding requirements in road and track drainage.

StormPipe is made of PE-HD in tried-and-tested structured-wall design. StormPipe complies with DIN 4262-1, R2 pipe type.

The combination of structured-wall design and PE-HD ensures a high ring stiffness of SN 8 according to EN ISO 9969.

StormPipe features a corrugated black outside and a smooth grey inside.

Inside and outside are homogeneously welded along the corrugation troughs.

StormPipe is available in straight lengths of 6 m in nominal diameters DN 100 to DN 600 as totally perforated pipe, locally perforated pipe and multi-purpose pipe.

Thanks to the low weight, StormPipe has many advantages for on-site transportation and installation.

### Most important advantages at a glance

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- DN 100 – DN 600 as perforated drainage pipe
- Ring stiffness SN 8 according to EN ISO 9969
- Structured-wall PE-HD pipe, R2 pipe type according to DIN 4262-1
- Easy handling thanks to low weight
- Inspection-friendly thanks to grey inside
- High infiltration rate of drainage pipes thanks to perfectly arranged perforations and low water infiltration resistance
- Extremely high degree of drainage thanks to smooth inside
- Suited for SLW 60 / HGV 60



# High-performance drainage pipes for road and track construction

The perforations are symmetrically arranged along the crown and ensure optimum water infiltration thanks to the perfect ratio of perforation area to wall area. The perforations are arranged in the corrugation troughs protected by the surrounding filter layer, which allows best-possible unobstructed water intake. The pipe stiffness is extremely high.

StormPipe drainage pipes are resistant to acids and bases according to DIN 8075 supplementary sheet 1. They are temperature-resistant also at sub-zero temperatures and feature high UV resistance. The perforation area is greater than or equal to 50 cm<sup>2</sup>/m per pipe. The perforation width is 1.2 mm + 0.4 mm.

The locally perforated pipes feature a crown marking ensuring correct installation of StormPipe drainage pipes so that the perforations are located in the upper part of the pipe.

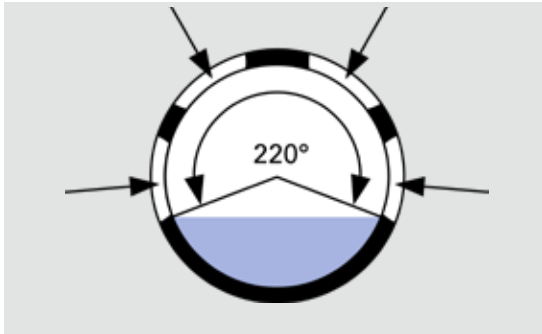
Pipe inside and outside are homogeneously welded along the contact surfaces. The combination of maximum drainage and discharge, low weight, easy-to-handle pipe length, pliability and high static strength make its use easy and safe and its installation economic.

StormPipe drainage pipes have been designed for the reliable drainage of roads, airfields, sports fields and for cases where utmost requirements are placed on drainage pipes.

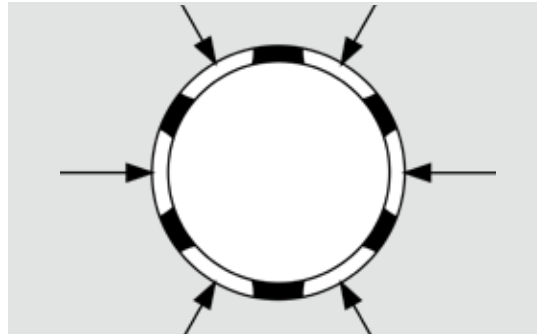
## The different types of perforations

### Use and function:

**StormPipe locally perforated pipes (LP) and totally perforated pipes (TP)** ensure drainage of the ground level and the anti-frost layer. This holds true during and after construction by collecting the accumulating unbound soil water and then transporting it to the receiving waters.

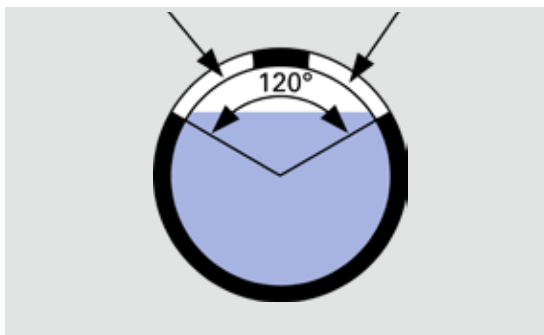


Locally perforated pipe (LP)



Totally perforated pipe (TP)

**StormPipe multi-purpose pipes (MP)** feature both the function of a locally perforated pipe and a collector for longer distances. They must store and transport the accumulating surface water if required. The coupling connection must therefore be watertight (WD) as opposed to locally perforated pipes. This is achieved by slipping a profile sealing ring into the second corrugation trough. The connection is sandtight (SD) without a profile sealing ring. Make sure that in the case of watertight connections both the coupling inside and the profile sealing ring must be covered with a sufficient amount of lubricant upon installation.



Multi-purpose pipe (MP)

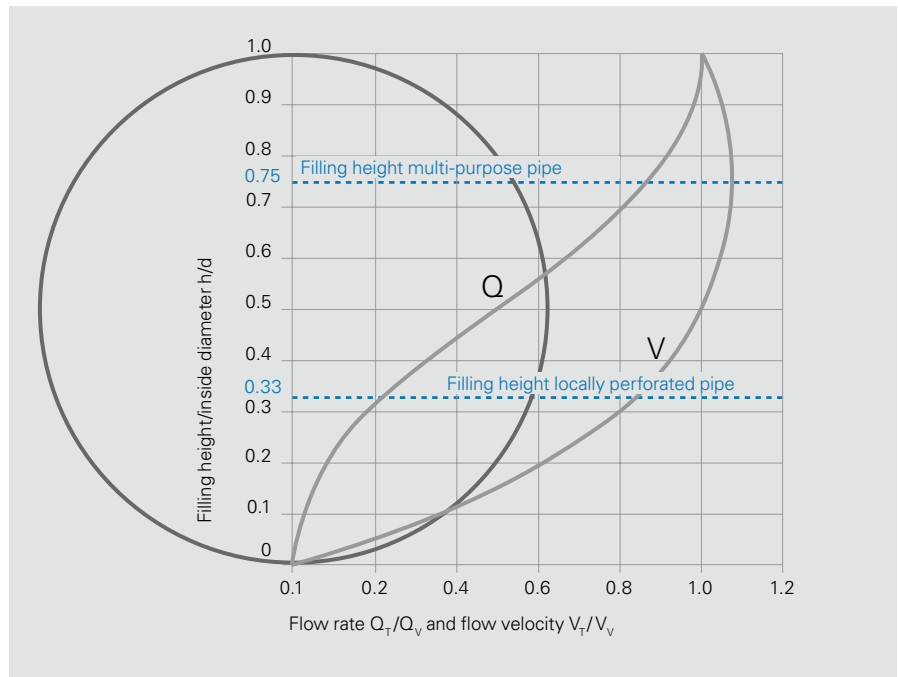
# StormPipe – impresses with excellent hydraulics ...

## Hydraulic properties

The partial capacity curve for circular profiles according to the diagram on the right is used to determine partial discharges according to DWA-A 110.

Key:

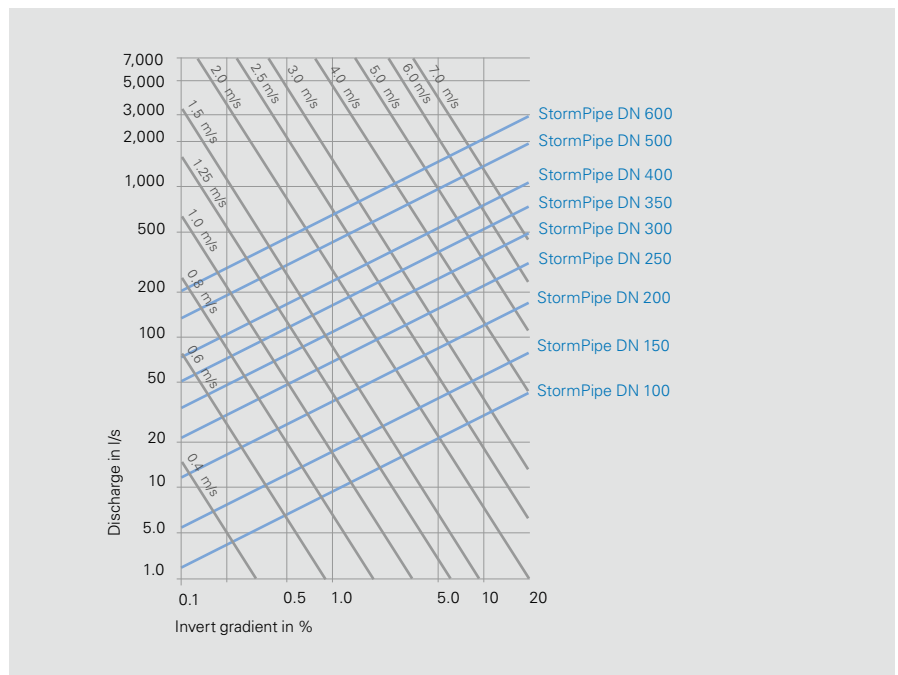
- $d$  [m] = inside diameter
- $h$  [m] = filling height
- $Q_v$  [m<sup>3</sup>/s] = flow rate at full capacity
- $Q_T$  [m<sup>3</sup>/s] = flow rate at partial capacity
- $V_v$  [m/s] = flow velocity at full capacity
- $V_T$  [m/s] = flow velocity at partial capacity



The hydraulic chart can be used to determine the discharge performance (at full capacity).

The hydraulic properties were calculated according to DWA-A 110 and are based on a roughness coefficient of ( $k_b = 0.5$  mm).

The chart shows the discharge (l/s) and flow velocity (m/s) depending on nominal diameter (DN) and invert gradient (%).



## ... and proven stability

### Loading

The high ring stiffness of StormPipe ensures a high degree of reliability. If installed correctly (DIN EN 1610, DWA-A 139), – for standard installations as described below with high traffic loads – the deflection value is significantly below the admissible deflection value of 6.0 % according to DWA-A 127. However, the deflection chart does not replace the project-specific pipe stress analysis according to DWA-A 127.

In addition to the deflection analysis, the static verification includes a stress and stability analysis.

The validity range of the chart complies with the safety factors of 2.5.

#### NB

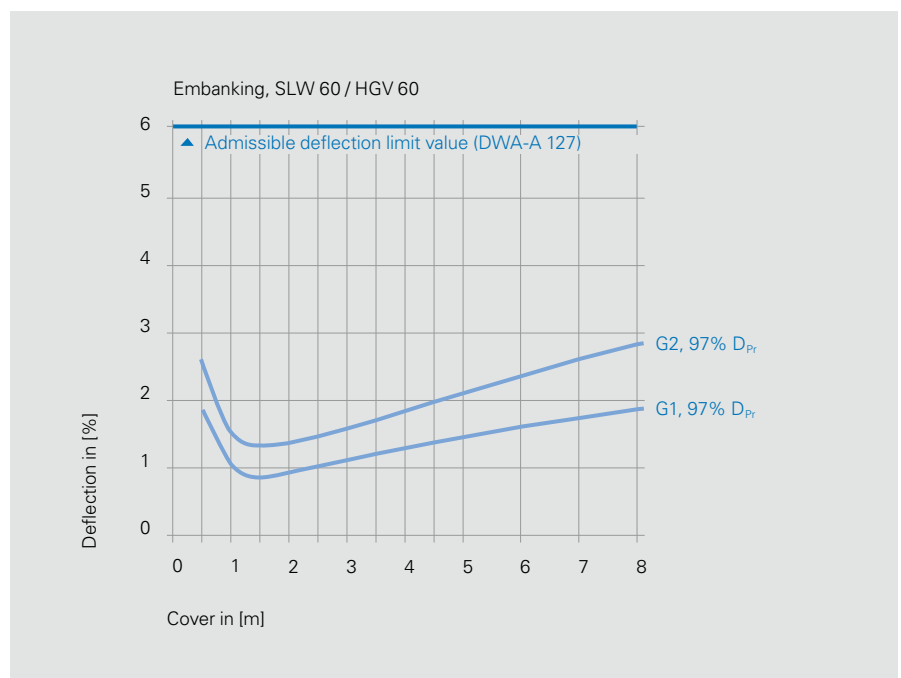
Please refer to the relevant DIN EN 1610, DWA-A 139, DWA-A 127 standards and our installation manual available at [www.fraenkische.com](http://www.fraenkische.com) for detailed installation information.

The following installation conditions apply to the deflection chart on the right (average of all nominal diameters):

- StormPipe DN 100 – DN 600
- Embanking
- Soil cover 0.5 – 8.0 m
- SLW 60 / HGV 60 traffic loads
- Piping zone – soil of the groups:
  - G2** / slightly cohesive soils (top curve)
  - G1** / non-cohesive soils (bottom curve)

See also soil class 3 according to DIN 18300; bedding angle 180°, loose bedding.

- Native soil and backfill G3 with 95 %  $D_{Pr}$



Applies to the installation conditions on the left only!

## Strasil® drainage pipes SN 4 made of PVC-U ...

Strasil is a classic, tunnel-shaped drainage pipe for road and track construction featuring a characteristic smooth invert.

Strasil pipes are resistant to acids and bases according to DIN 8061, supplementary sheet 1.

Strasil drainage pipes are used according to relevant standards, guidelines and regulations.

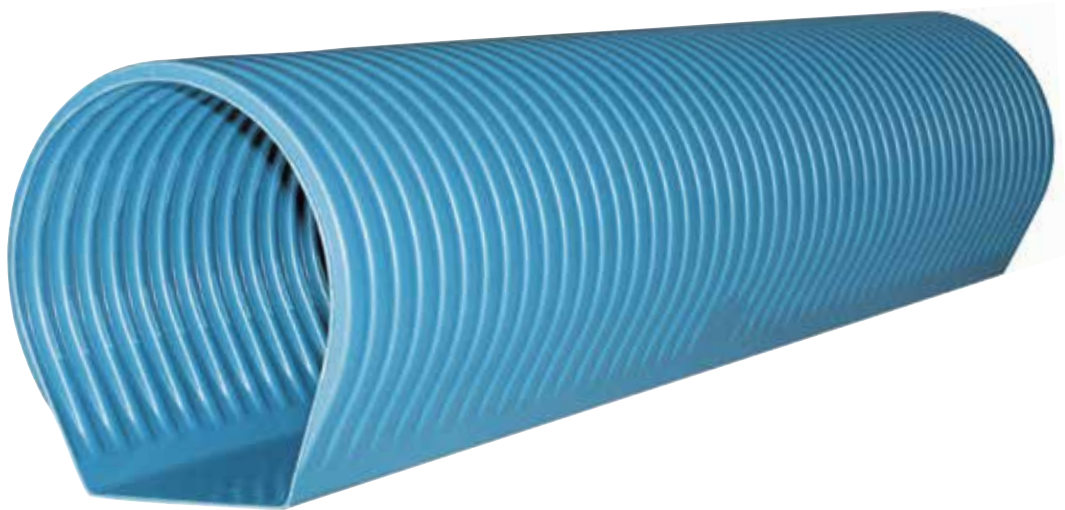
The most important are:

- DIN EN 1610
- RAS-Ew
- DWA-A 139
- ZTVA-StB 97/06
- ZTV Ew-StB 14



### Strasil® – the smooth-invert pipe

- Quick to assemble thanks to push-fit coupling for LP and MP pipes. A profile sealing ring seals MP pipes.
- Unobstructed water infiltration
- High degree of drainage thanks to smooth invert
- High compressive strength thanks to optimum corrugation geometry. Static and dynamic loads are easily absorbed.
- Suited for SLW 60 / HGV 60



## ...convincing thanks to high discharge performance

The perforations are symmetrically arranged along the crown and guarantee optimum water intake thanks to the matched perforation-wall ratio.

The perforations are 1.2 mm wide and protectively located in the corrugation troughs; the total perforation area is greater than or equal to 50 cm<sup>2</sup>/m per pipe. The smooth invert improves drainage.

Strasil drainage pipes have been dimensioned according to applicable provisions and regulations.

The combination of maximum water infiltration and discharge performance, low weight, easy-to-handle lengths (6 m) and high strength make its use easy and safe and its installation economical.

Due to the design, the coupling provides an absolutely reliable and sandtight (SD) connection; a profile sealing ring renders the connection watertight (WD). The extensive selection of accessories meets the needs of installation situations and the wide range of possible applications.

### NB

For detailed information, please refer to our installation manual at [www.fraenkische.com](http://www.fraenkische.com).

## The different types of perforations

### Use and function:

**Strasil locally perforated pipes (LP)** ensure drainage of the ground level and the anti-frost layer. This holds true during and after construction by collecting the accumulating unbound soil water and then transporting it to the receiving waters. Strasil locally perforated pipes comply with these requirements.

**Strasil multi-purpose pipes (MP)** feature both the function of locally perforated pipes and collectors for longer distances. They must store and transport the accumulating surface water if required. As opposed to locally perforated pipes, the coupling connection must provide a watertight (WD) seal according to DIN 4262-1.

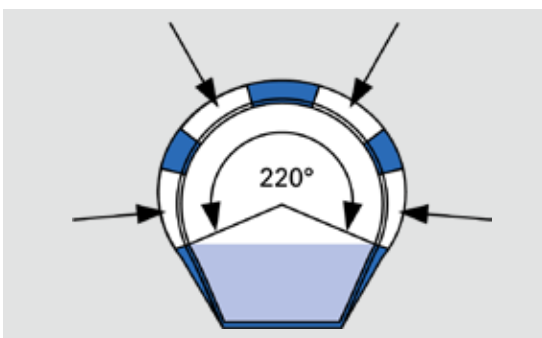
Position of sealing ring to establish a watertight seal between MP pipes:

DN 200 – 7th corrugation trough

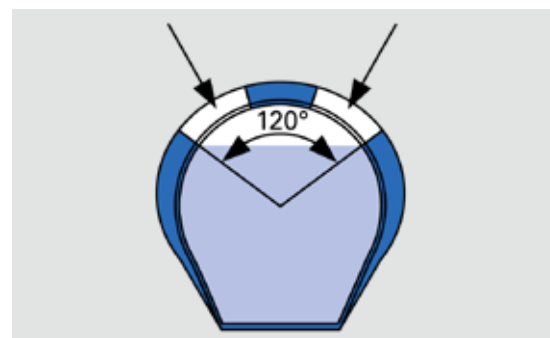
DN 250 – 6th corrugation trough

DN 350 – 5th corrugation trough

If no sealing ring is used, the connection is sandtight (SD).



Locally perforated pipe (LP)



Multi-purpose pipe (MP)

## Strasil® – excellent hydraulic ...

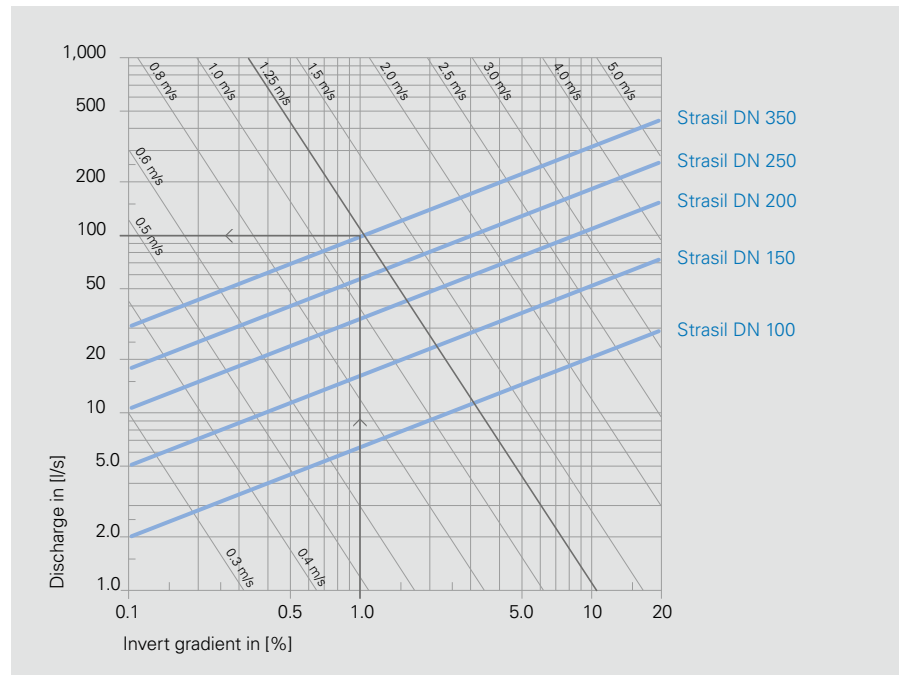
### Hydraulic properties

The smooth invert of Strasil multi-purpose pipes only offers little resistance to the discharge of the infiltrated water. Due to the additional collection function, at least 240° of the pipe circumference are unperforated, i.e., watertight.

The hydraulic properties were determined by the University of Applied Sciences in Karlsruhe and the Technical University in Munich.

The diagram shows the discharge (l/s) and flow velocity (m/s) depending on nominal diameter (DN) and invert gradient (%).

If Strasil DN 350 multi-purpose pipes (MP) are used, a water quantity of approx. 100 l/s or 360 m<sup>3</sup>/h can be discharged at a gradient of 1 % and a flow velocity of approx. 1.25 m/s.





## ... and static properties

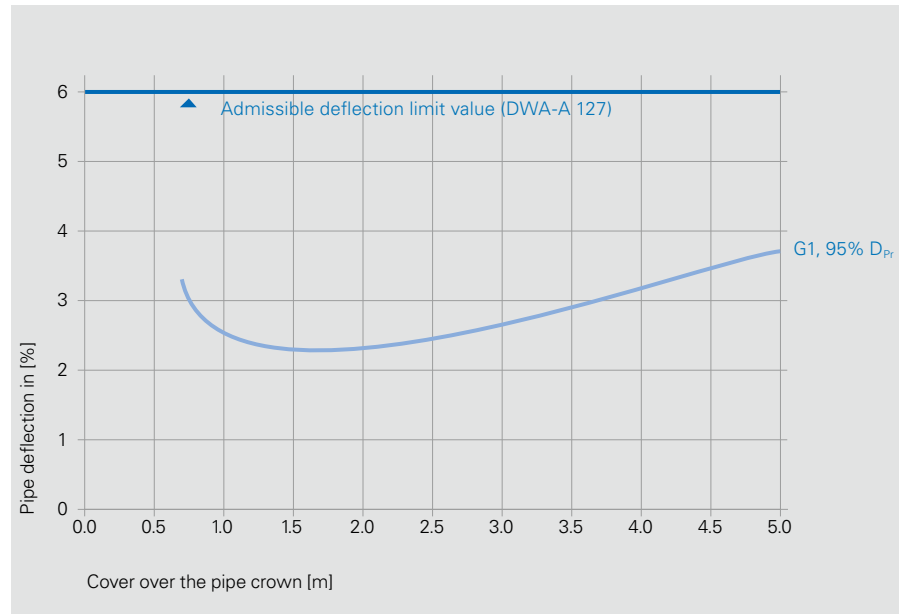
### Loading

The optimised pipe geometry leads to particularly high compressive strength. Strasil multi-purpose pipes can be used wherever high static and dynamic loads must be absorbed.

The diagram shows the deflection behaviour of Strasil DN 250 with a cover of 0.7 - 5.0 m if non-cohesive soils G1 are used and a degree of compaction of 95 %  $D_{Pr}$  in the embedding area with heavy goods vehicle traffic SLW 60 / HGV 60.

The maximum permissible deflection value of 6.0 % as required in the corresponding regulations (e.g., DWA-A 127) is generally not exceeded if exposed to long-term load. If necessary, there is a survey on the proof of stability by the Technical University in Munich that can be used to furnish proof of static.

#### Strasil DN 250 pipe deflection caused by soil and traffic loads SLW 60 / HGV 60 if installed in G1 soil, 95 % $D_{Pr}$







## Flushing and inspection shafts for road drainage

Pipe systems must be inspectable and flushable. FRÄNKISCHE system shafts define what is state of the art and easily meet these requirements. Whether to connect a drainage pipe or a transport pipe to classic shafts or wye shafts, or for a piggyback arrangement.

## All benefits at a glance

### Classic solution

Classic flushing and inspection shafts by FRÄNKISCHE cover virtually any application.

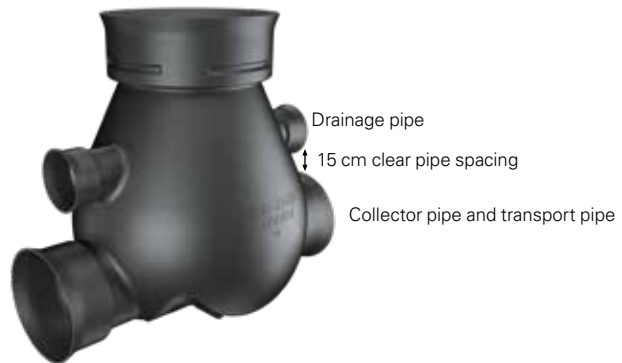
- A comprehensive line of accessories makes design and installation from one source a breeze
- High-quality durable shafts „made in Germany“



### Piggyback shafts

In addition to connections to the tight collector pipe and transport pipe situated at the bottom, piggyback shafts have connections for a drainage pipe at the top that reliably collects accumulating infiltration water as well as planum water from the road superstructure, and transports it to inspection shafts.

- Different shaft base bodies and connection options allow adjustment to on-site conditions
- In-house manufactured quality products
- Clear pipe spacing of 15 cm between drainage pipe and collector and transport pipe



## ADVANTAGES

- Monolithic product made of PE-HD
- Easy construction site handling thanks to low weight
- Extremely durable, robust and resistant
- Resistant to oils, acids, bases, greases, gasoline, diesel fuel according to DIN 8075 supplementary sheet 1
- High UV resistance
- Ideal maintenance and inspection of connected systems possible
- Edgeless inside design
- Compact designs and low total heights
- Decoupling of forces from the extension pipe and the cover
- Integrated compensating area for the extension pipe
- Can also be used as a combined road gully and inspection shaft

# Flushing and inspection shafts for road drainage

## Basics of the piggyback system

Stormwater runoff from roads is considered wastewater according to the Federal Water Act (*Wasserhaushaltsgesetz (WHG)*) (see Section 54). To protect groundwater and waterbodies it must be collected and discharged in leak-tight pipes taking into consideration Section 60 of the WHG and according to recognized rules of engineering (DIN, DWA and FGSV regulations). In addition, the accumulating drainage / infiltration water must be collected separately from wastewater through drainage pipes.

With its piggyback shafts, FRÄNKISCHE allows for the possibility of complying with standards as easily as possible while remaining state of the art. The piggyback shaft combines a tight transport pipe and a top drainage pipe in one flushing and inspection shaft through which accumulating water can be reliably discharged. Thus, it can be ensured that no polluted surface water infiltrates into the soil. The tasks of both road drainage and environmental protection are perfectly fulfilled. The shafts available in many different designs with various diameters and connection options are operationally-safe and utterly reliable solutions for collecting and discharging surface and infiltration water.







StrabuControl HP with a tight bottom transport pipe and a top drainage pipe

## Overview








### Classic solution

Product	StrabuControl	StrabuControl 600	StrabuControl 600 V	AquaTrafficControl	AquaTrafficControl V
Illustration					
Inside diameter of base body	> 500 mm	> 600 mm	> 600 mm	> 900 mm	> 900 mm
Extension pipe D <sub>o</sub>	400	600	600	600	600
Designs	2/250 3/250 4/250 3/350 4/350 2/400	2/250 2/400 2/250 – 150 (90°) 2/400 – 150 (90°)	Variable shaft angle 90 – 270 degrees	2/300 2/400 2/500 2/600	Variable shaft angle 90 – 270 degrees
Connectable types of pipe*	Strasil Strabusil StormPipe	Strasil Strabusil StormPipe AquaPipe	Strasil Strabusil StormPipe AquaPipe	AquaPipe StormPipe	AquaPipe StormPipe
Available nominal connection diameters	DN 100 – 400	DN 100 – 400	DN 100 – 400	DN 300 – 600	DN 300 – 600
Cover	FRÄNKISCHE (470 mm)	Standard cover (625 mm), on site	Standard cover (625 mm), on site	Standard cover (625 mm), on site	Standard cover (625 mm), on site
For more details, see	page 32	page 33	page 34	page 35	page 36

\* Other FRÄNKISCHE structured-wall pipes possible

# Piggyback



Product	StrabuControl HP	StrabuControl 600 HP	StrabuControl 600 V HP	AquaTrafficControl HP	AquaTrafficControl V HP
Illustration					
Inside diameter of base body	> 500 mm	> 600 mm	> 600 mm	> 900 mm	> 900 mm
Extension pipe D <sub>o</sub>	400	600	600	600	600
Designs	2/250 3/250 2/350 2/250 – 150 (90°) 2/350 – 150 (90°)	2/250 2/350 2/250 – 150 (90°) 2/350 – 150 (90°)	Variable shaft angle 90 – 270 degrees	2/300 2/400 2/500 2/600	Variable shaft angle 90 – 270 degrees
Transport pipe*	AquaPipe	AquaPipe	AquaPipe	AquaPipe	AquaPipe
Nominal connection diameters of transport pipe	DN 200 – 350	DN 200 – 350	DN 200 – 350	DN 300 – 600	DN 300 – 600
Drainage pipe	Strabusil StormPipe	Strabusil StormPipe	Strabusil StormPipe	Strabusil StormPipe	Strabusil StormPipe
Nominal connection diameters of drainage pipe	DN 150	DN 150	DN 150	DN 150	DN 150
Cover	FRÄNKISCHE (470 mm)	Standard cover (625 mm), on site	Standard cover (625 mm), on site	Standard cover (625 mm), on site	Standard cover (625 mm), on site
For more details, see	page 32	page 33	page 34	page 35	page 36

\* Other FRÄNKISCHE structured-wall pipes possible

## StrabuControl® / StrabuControl® HP



As a classic solution, StrabuControl is a particularly versatile inspection and flushing shaft just like in the piggyback design. It is suited for virtually any form of road drainage and can easily be integrated into traffic areas using the FRÄNKISCHE shaft covers.

### StrabuControl®

**Total height:**

approx. 750/860 mm (depending on design)

**Inside diameter of base body:**

> 500 mm

**Connectable types of pipe:**

Strasil  
Strabusil  
StormPipe

**Extension pipe D<sub>o</sub>:**

400 mm

**Available nominal connection diameters  
DN: 100 – 400**
**Designs:**

2/250  
3/250  
4/250  
3/350  
4/350  
2/400



- The compact height allows soil depths from approx. 1.0 m
- Standard nominal diameters ranging from DN 100 to DN 300 can be connected using reducers
- Use of FRÄNKISCHE 470 mm shaft covers

### StrabuControl® HP

**Total height:**

approx. 900/1,000 mm (depending on design)

**Inside diameter of base body:**

> 500 mm

**Drainage pipe(s):**

Strabusil  
StormPipe

**Extension pipe D<sub>o</sub>:**

400 mm

**Nominal connection diameters of drainage pipe  
DN: 150**
**Transport pipe:**

AquaPipe

**Available nominal connection diameters of transport pipe  
DN: 200 – 350**
**Designs:**

2/250  
3/250  
2/350  
2/250 – 150 (90°)  
2/350 – 150 (90°)



- All FRÄNKISCHE 470 mm shaft covers can be used in combination with FRÄNKISCHE extension pipes D<sub>o</sub> 400
- Compact and statically optimised shaft base body
- Standard nominal diameters ranging from DN 200 to DN 300 can be connected using reducers
- Open flume



## StrabuControl® 600 / StrabuControl® 600 HP



StrabuControl 600 and StrabuControl 600 HP have a particularly low height despite their relatively large shaft base body. Due to their compact and optimised design, they can be installed even in low soil depths, for instance as swale infiltration shafts.

### StrabuControl® 600

**Total height:**  
approx. 825 mm

**Connectable types of pipe:**  
Strasil  
Strabusil  
StormPipe  
AquaPipe

**Available nominal connection diameters DN:** 100 – 400



**Inside diameter of base body:**  
> 600 mm

**Extension pipe D<sub>o</sub>:**  
600 mm

**Designs:**  
2/250  
2/400  
2/250 – 150 (90°)  
2/400 – 150 (90°)

- Standard nominal diameters ranging from DN 100 to DN 350 can be connected using reducers
- The compact height allows soil depths from approx. 1.0 m
- Open flume
- Also perfectly suited as swale infiltration shaft
- standard 625 mm shaft covers can be used
- Installation possible in soil depths of approx. 1.0 to 5 m\*; statically substantiated with HGV 60 traffic loads

\* Shallow installation depths available on request

### StrabuControl® 600 HP

**Total height:**  
approx. 970/1,050 mm (depending on design)

**Drainage pipe(s):**  
Strabusil  
StormPipe

**Nominal connection diameters of drainage pipe DN:** 150

**Transport pipe:**  
AquaPipe

**Available nominal connection diameters of transport pipe DN:** 200 – 350



**Inside diameter of base body:**  
> 600 mm

**Extension pipe D<sub>o</sub>:**  
600 mm

**Designs:**  
2/250  
2/350  
2/250 – 150 (90°)  
2/350 – 150 (90°)

- Compact and statically optimised shaft base body
- Standard nominal diameters ranging from DN 100 to DN 300 can be connected using reducers
- Open flume
- Standard 625 mm shaft covers can be used

## StrabuControl® 600 V / StrabuControl® 600 V HP



V stands for variable: StrabuControl 600 and StrabuControl 600 HP are also available as variable shafts for particularly demanding individual installation situations. Thanks to the freely selectable connection angles of these shafts, transport pipes and drainage pipes can be installed at small and irregular bend radii in particularly narrow areas without additional fittings.

### NB

Variable shafts are custom-manufactured exclusively for each specific project.

### StrabuControl® 600 V

**Total height:**  
approx. 1,000 mm

**Connectable types of pipe:**  
Strasil  
Strabusil  
StormPipe  
AquaPipe

**Available nominal connection diameters DN:**  
100 – 400



**Inside diameter of base body:**  
> 600 mm

**Extension pipe D<sub>o</sub>:**  
600 mm

**Designs:**  
Freely selectable shaft angle  
90 – 270 degrees

- Standard 625 mm shaft covers can be used

### StrabuControl® 600 V HP

**Total height:**  
approx. 1,000 mm

**Drainage pipe(s):**  
Strabusil  
StormPipe

**Nominal connection diameters of drainage pipe DN:** 150

**Transport pipe:**  
AquaPipe

**Available nominal connection diameters of transport pipe DN:**  
200 – 350



**Inside diameter of base body:**  
> 600 mm

**Extension pipe D<sub>o</sub>:**  
600 mm

**Designs:**  
Freely selectable shaft angle  
90 – 270 degrees

- Standard 625 mm shaft covers can be used

# AquaTraffic® Control / AquaTraffic® Control HP



AquaTrafficControl and AquaTrafficControl HP are ideally suited for the use in highway construction. Thanks to their large base body, nominal pipe diameters of up to DN 600 can be connected, so that even large amounts of surface water can be collected and reliably discharged. Despite their substantial dimensions, both shafts are easy to handle thus being a perfect solution in road drainage.

## AquaTraffic® Control

**Total height:**  
approx. 1,130 mm

**Inside diameter of base body:**  
> 900 mm

**Connectable types of pipe:**  
AquaPipe  
StormPipe

**Extension pipe D<sub>o</sub>:**  
600 mm

**Available nominal connection diameters DN:**  
300 – 600

**Designs:**  
2/300  
2/400  
2/500  
2/600



- Standard 625 mm shaft covers can be used
- Open flume
- The compact total height allows soil depths from approx. 1.35 m

## AquaTraffic® Control HP

**Total height**  
approx. 1,130 mm

**Inside diameter of base body:**  
> 900 mm

**Drainage pipe(s):**  
Strabusil  
StormPipe

**Extension pipe D<sub>o</sub>:**  
600 mm

**Nominal connection diameters of drainage pipe DN:** 150

**Transport pipe:**  
AquaPipe

**Designs:**  
2/300  
2/400  
2/500  
2/600



- Standard 625 mm shaft covers can be used
- Open flume

# AquaTraffic® Control V / AquaTraffic® Control V HP



AquaTrafficControl V and AquaTrafficControl V HP are used under narrow conditions. AquaPipe stormwater pipes can be installed very economically also in areas with very small bend radii, e.g., in highway construction. Custom-manufactured to meet specific project needs, drainage pipes with freely selectable connection angles can be connected.

**NB**

Variable shafts are custom-manufactured exclusively for each specific project.

## AquaTraffic® Control V

**Total height:**  
approx. 1,130 mm

**Inside diameter of base body:**  
> 900 mm

**Connectable types of pipe:**  
AquaPipe  
StormPipe

**Extension pipe D<sub>o</sub>:**  
600 mm

**Available nominal connection diameters DN:**  
300 – 600

**Designs:**  
Freely selectable shaft angle 90 – 270 degrees



- Standard 625 mm shaft covers can be used

## AquaTraffic® Control V HP

**Total height:**  
approx. 1,130 mm

**Inside diameter of base body:**  
> 900 mm

**Drainage pipe(s):**  
Strabusil  
StormPipe

**Extension pipe D<sub>o</sub>:**  
600 mm

**Nominal connection diameters of drainage pipe DN:** 150

**Transport pipe:**  
AquaPipe

**Designs:**  
Freely selectable shaft angle 90 – 270 degrees

**Available nominal connection diameters of transport pipe DN:**  
300 – 600



- Standard 625 mm shaft covers can be used

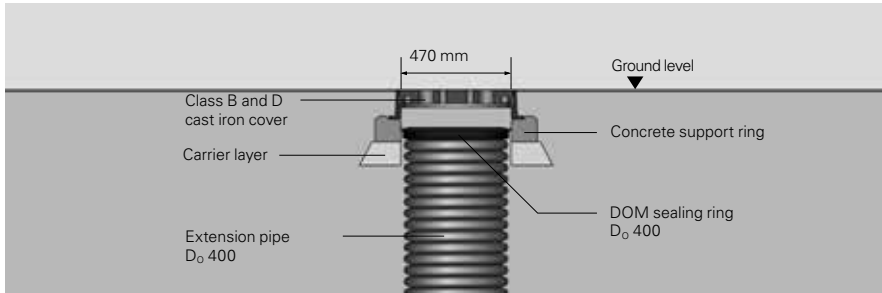
## Shaft covers

### FRÄNKISCHE covers (470 mm)

FRÄNKISCHE covers can be integrated in the road surface without any problems. Whether classic or piggyback: the special-purpose DOM sealing ring D<sub>o</sub> 400 ensures that extension pipes D<sub>o</sub> 400 are properly connected to corresponding covers.

#### Applies to the following shafts:

- StrabuControl
- StrabuControl HP



FRÄNKISCHE cover (470 mm)



DOM sealing ring D<sub>o</sub> 400

### Installation with standard covers (625 mm)

The special-purpose DOM sealing ring D<sub>o</sub> 600 provides a proper connection of the extension pipes D<sub>o</sub> 600 to the cover.

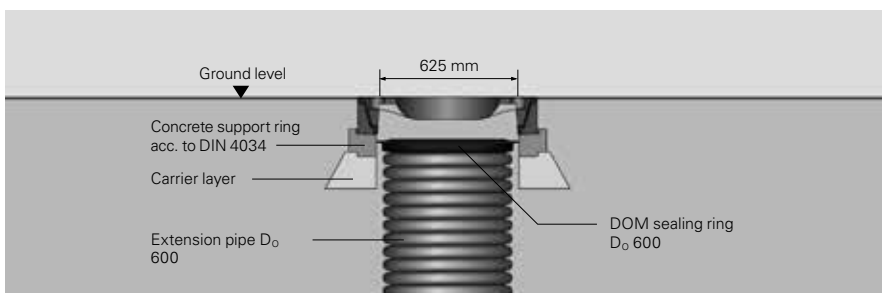
More covers such as roll-in covers can be used without any problems under certain preconditions.

#### Please observe in general

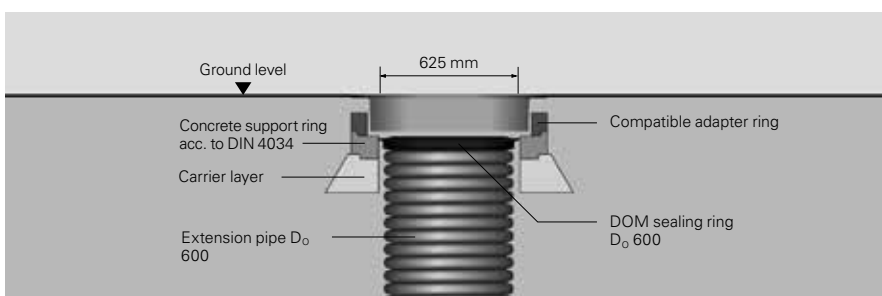
The height of support ring and frame must be clarified in connection with the use of a dirt trap. The dirt trap should not rest directly on the extension pipe.

#### Applies to the following shafts:

- StrabuControl 600
- StrabuControl 600 HP
- StrabuControl 600 V
- StrabuControl 600 V HP
- AquaTrafficControl
- AquaTrafficControl HP
- AquaTrafficControl V
- AquaTrafficControl V HP



Standard cover (625 mm)



Cover for rolling-in in bituminous road surfaces

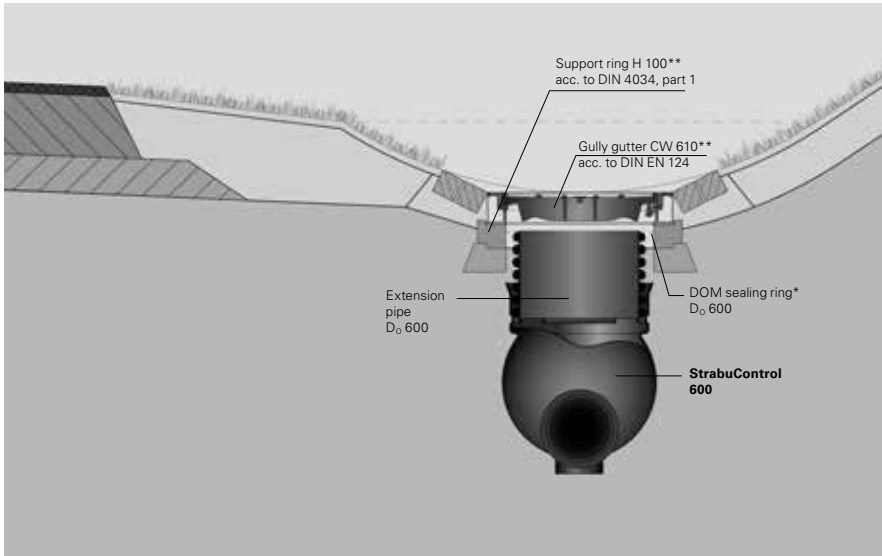


DOM sealing ring D<sub>o</sub> 600

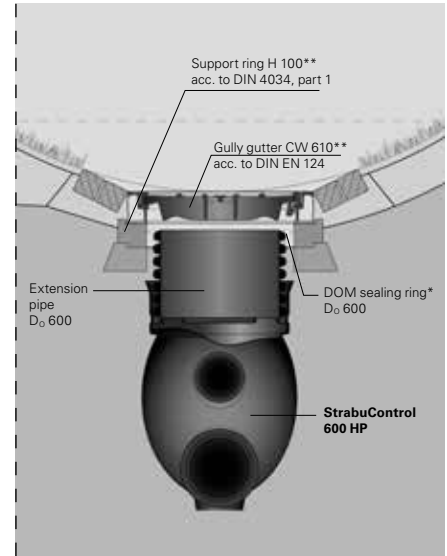
# Installation as swale infiltration shaft

The compact design makes StrabuControl 600 / HP and AquaTrafficControl / HP ideally suited as swale infiltration shafts with perforated gully gutters.

## StrabuControl® 600 / HP as swale infiltration shaft

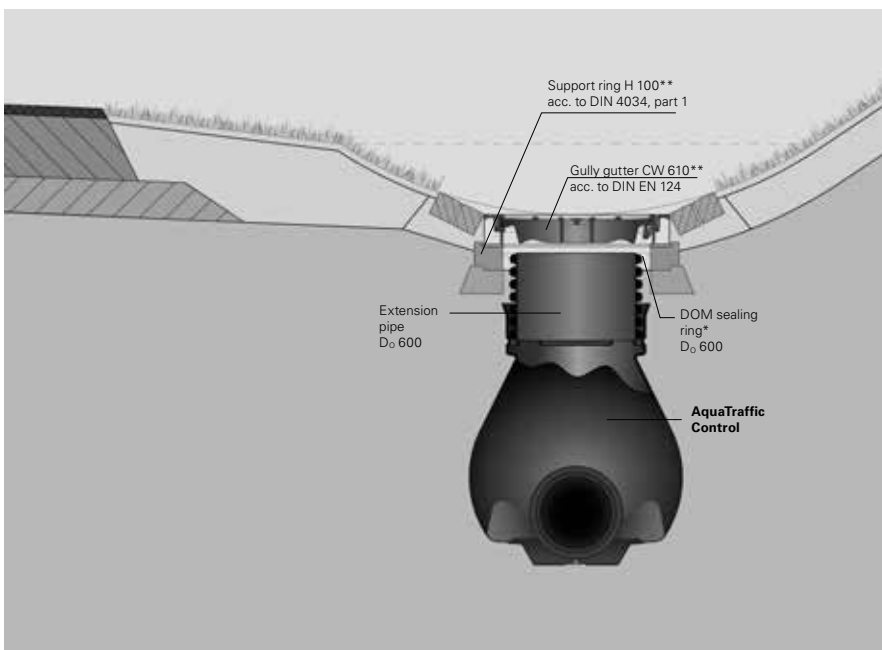


StrabuControl 600 as swale infiltration shaft

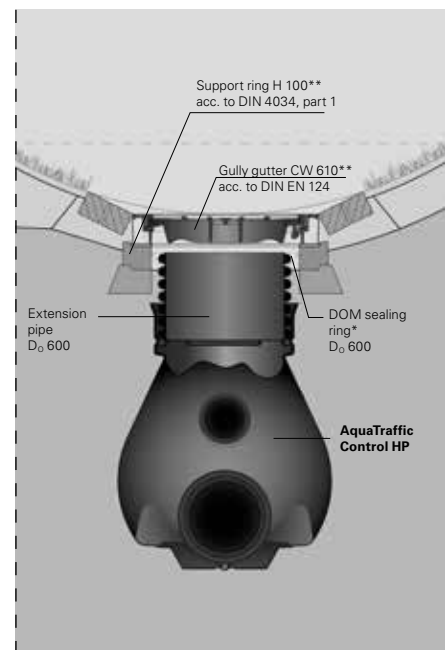


StrabuControl 600 HP as swale infiltration shaft

## AquaTrafficControl® / HP as swale infiltration shaft



AquaTrafficControl as swale infiltration shaft



AquaTrafficControl HP as swale infiltration shaft

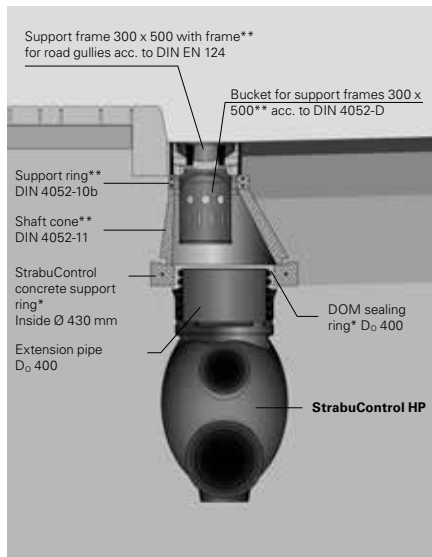
\* see FRÄNKISCHE shaft accessories  
 \*\* to be supplied on site

# Road gully and inspection shaft as a two-in-one solution

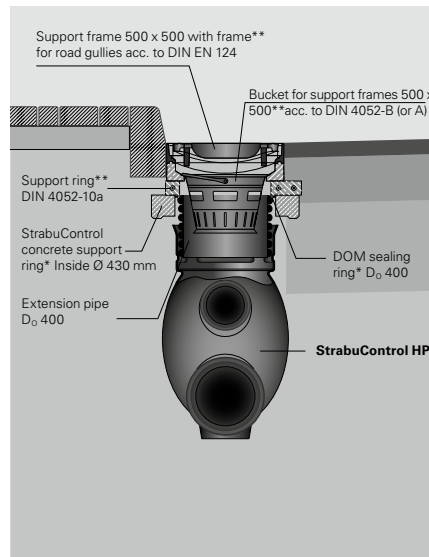
The shallow and compact design of the shaft base body also makes it ideally suited as a combined road gully and inspection shaft.

Using the respective accessories, commercially available support frames 300 x 500 mm and / or 500 x 500 mm can be connected to the concrete support rings and/or extension pipes. With the help of the sloped concrete support ring by FRÄNKISCHE, the road gully can be formed as a v-shaped gutter.

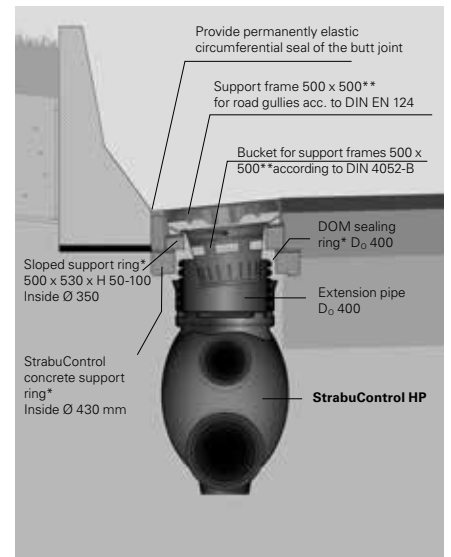
## Installation examples for shafts with extension pipe D<sub>0</sub> 400



StrabuControl HP with support frame 300 x 500 mm (desk type)

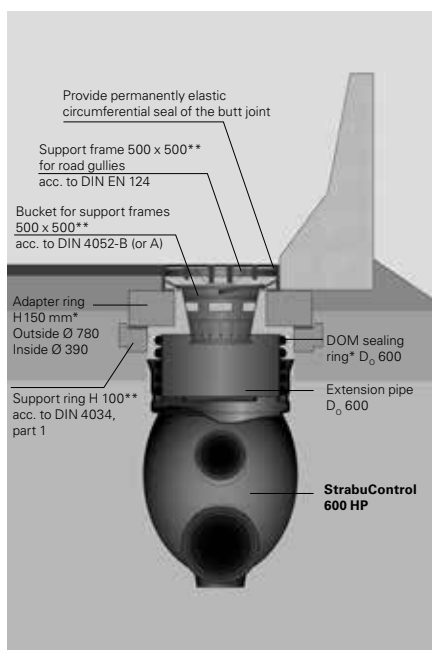


StrabuControl HP with support frame 500 x 500 mm (desk type)

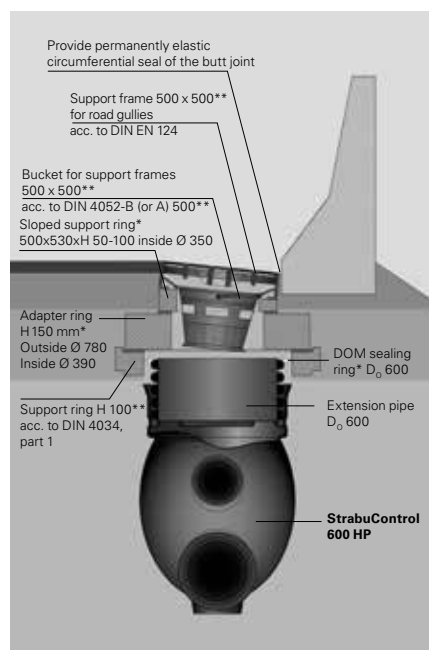


StrabuControl HP with support frame as v-shaped gutter

## Installation examples for shafts with extension pipe D<sub>0</sub> 600



StrabuControl 600 HP with support frame 500 x 500



StrabuControl 600 HP with support frame 500 x 500 as v-shaped gutter

**NB**

Installation also possible with AquaTrafficControl HP.

\* see FRÄNKISCHE shaft accessories  
 \*\* to be supplied on site







## Product range overview

### Table of contents

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AquaPipe – transport pipe SN 8 (PE-HD)	42
Strabusil – drainage pipe SN 4 (PE-HD)	48
StormPipe – drainage pipe SN 8 (PE-HD)	52
Strasil – drainage pipe SN 4 (PVC-U)	56
StrabuControl – shafts	60
StrabuControl 600 – shafts	62
AquaTrafficControl – shafts	65

## Product range overview – AquaPipe®

### AquaPipe® – transport pipe SN 8 (PE-HD)

SLW/HGV 60



Structured-wall PE-HD transport pipe (corrugated outside, smooth inside), including sealing ring and coupling. Black outside, blue inside. High load-bearing capacity (SN 8 according to DIN EN ISO 9969). Can be used in accordance with RAS-Ew (Directive relating to road construction – Part: Drainage (*Richtlinien für die Anlage von Straßen, Teil: Entwässerung*)).

**Application:** transport pipe to discharge polluted surface water from roads and highways and municipal surface water from residential, commercial and industrial areas, and to discharge stormwater into receiving waters.

📄 Installation manual  
[www.fraenkische.com](http://www.fraenkische.com)

Product	Technical data			Cat. no.
AquaPipe 6 m length	DN/ID 150	D <sub>1</sub> = 149	D <sub>o</sub> = 173	55150150
	DN/ID 200	D <sub>1</sub> = 203	D <sub>o</sub> = 236	55150200
	DN/ID 250	D <sub>1</sub> = 255	D <sub>o</sub> = 295	55150250
	DN/ID 300	D <sub>1</sub> = 300	D <sub>o</sub> = 349	55150300
	DN/ID 350	D <sub>1</sub> = 347	D <sub>o</sub> = 399	55150350
	DN/ID 400	D <sub>1</sub> = 399	D <sub>o</sub> = 461	55150400
	DN/ID 500	D <sub>1</sub> = 499	D <sub>o</sub> = 570	55150500
	DN/ID 600	D <sub>1</sub> = 596	D <sub>o</sub> = 684	55150600
AquaPipe 3 m length	DN/ID 150	D <sub>1</sub> = 149	D <sub>o</sub> = 173	55152150
	DN/ID 200	D <sub>1</sub> = 203	D <sub>o</sub> = 236	55152200
	DN/ID 250	D <sub>1</sub> = 255	D <sub>o</sub> = 295	55152250
	DN/ID 300	D <sub>1</sub> = 300	D <sub>o</sub> = 349	55152300
	DN/ID 350	D <sub>1</sub> = 347	D <sub>o</sub> = 399	55152350
	DN/ID 400	D <sub>1</sub> = 399	D <sub>o</sub> = 461	55152400
	DN/ID 500	D <sub>1</sub> = 499	D <sub>o</sub> = 570	55152500
	DN/ID 600	D <sub>1</sub> = 596	D <sub>o</sub> = 684	55152600
AquaPipe 1 m length	DN/ID 150	D <sub>1</sub> = 149	D <sub>o</sub> = 173	55152151
	DN/ID 200	D <sub>1</sub> = 203	D <sub>o</sub> = 236	55152201
	DN/ID 250	D <sub>1</sub> = 255	D <sub>o</sub> = 295	55152251
	DN/ID 300	D <sub>1</sub> = 300	D <sub>o</sub> = 349	55152301
	DN/ID 350	D <sub>1</sub> = 347	D <sub>o</sub> = 399	55152351
	DN/ID 400	D <sub>1</sub> = 399	D <sub>o</sub> = 461	55152401
	DN/ID 500	D <sub>1</sub> = 499	D <sub>o</sub> = 570	55152501
	DN/ID 600	D <sub>1</sub> = 596	D <sub>o</sub> = 684	55152601

# Product range overview – AquaPipe® accessories

## AquaPipe® accessories

### Other fittings available on request



Product	Technical data	Cat. no.
Coupling with centred limit stop 2 sealing rings included	DN 150	55810150
	DN 200	55810200
	DN 250	55810250
	DN 300	55810300
	DN 350	55810350
	DN 400	55810400
	DN 500	55810500
	DN 600	55810600
	DN 800	55618800
Slip-on coupling without limit stop	DN 150	55896150
	DN 200	55896200
	DN 250	55896250
	DN 300	55896300
	DN 350	55896350
	DN 400	55896400
	DN 500	55896500
	DN 600	55896600
	DN 800	55896800
Profile sealing ring*	DN 150	55819150
	DN 200	55819200
	DN 250	55819250
	DN 300	55819300
	DN 350	55819350
	DN 400	55819400
	DN 500	55819500
	DN 600	55819600
	DN 800	55819800
15° bend	DN 150	55823150
	DN 200	55823200
30° bend	DN 150	55822150
	DN 200	55822200
45° bend	DN 150	55821150
	DN 200	55821200

<sup>1)</sup> For lubricant for watertight coupling joints, see page 44.

## Product range overview – AquaPipe® accessories

### Other fittings available on request



Product	Technical data	Cat. no.
45° wye	DN 150/DN 150	55840150
	DN 200/DN 150	55841200
	DN 250/DN 150	55842250
	DN 300/DN 150	55843300
Adapter sealing ring	DN 150 – to directly join a KG spigot and an AquaPipe coupling/wye DN 150	55864151
90° tee	DN 350/DN 150	55834350
	DN 400/DN 150	55835400
	DN 500/DN 150	55836500
	DN 600/DN 150	55837600
	DN 350/DN 200	55833350
	DN 400/DN 200	55834400
	DN 500/DN 200	55835500
GRP shaft lining	DN 150	55888150
	DN 200	55888200
	DN 250	55888250
	DN 300	55888300
	DN 350	55888350
	DN 400	55888400
	DN 500	55888500
	DN 600	55888600
Drainage fitting 1:1 slope	DN 150 – DN 600	available on request

Temporary construction site cover available on request.

Product	Technical data	Cat. no.
Lubricant	500 ml tube	55690000
	10 kg bucket	55691000

### NB

The lubricant is required for watertight coupling connections with profile sealing rings for the following pipes: **AquaPipe, AquaFlex, Strabusil, StormPipe, Strasil.**

## Product range overview – AquaDock® and saddle

### AquaDock®

The AquaDock set consists of a retrofit connection and a profile sealing ring DN 150. 90° connections are available for new installations and existing pipe systems.

**Application:** 90° connection of lateral inlets with AquaPipe transport pipe.



Product	Technical data	Cat. no.
AquaDock	DN 300 / 150 90°	55673301
	DN 350 / 150 90°	55673351
	DN 400 / 150 90°	55673401
	DN 500 / 150 90°	55673501
	DN 600 / 150 90°	55673601
EPDM adapter sealing	For direct connections of a KG spigot to AquaPipe coupling/wye DN 150	55864151

Each set includes an installation manual.

### AquaDock® accessories



Product	Technical data	Cat. no.
Installation wrench		55698990
AquaDock hole saw	Pilot drill included Ø 178.5 mm ± 0.5 mm	55698994
Drill stand	Drilling aid for AquaPipe	57698995
Pilot drill	Replacement for hole saw	55698996

### Saddle

Connection for AquaPipe/AquaFlex DN 200 to AquaPipe from DN 300.  
Connection for AquaPipe/AquaFlex DN 150 to AquaPipe DN 800.



Product	Technical data	Cat. no.
Saddle	DN 300/KG DN 200 – AquaPipe/AquaFlex	55872300
	DN 400/KG DN 200 – AquaPipe/AquaFlex	55872400
	DN 500/KG DN 200 – AquaPipe/AquaFlex	55872500
	DN 600/KG DN 200 – AquaPipe/AquaFlex	55872600
	DN 800/KG DN 150 – AquaPipe/AquaFlex	55871800
	DN 800/KG DN 200 – AquaPipe/AquaFlex	55872800

A KG adapter and a sealing ring DN 150 or DN 200 are included with each saddle.

### Saddle accessories

Product	Technical data	Cat. no.
Hole saw for saddle	DN 800/KG DN 150 (Ø 177 mm)	55698991
	DN 300/DN 400/KG DN 200 (Ø 214.5 mm)	55698992
	DN 500/DN 600/DN 800/KG DN 200 (Ø 220 mm)	55698993

## Product range overview – AquaFlex®

### AquaFlex®

SLW/HGV 60



Flexible PE pipe in structured-wall design (corrugated outside, smooth inside). Black outside; blue inside. High load-bearing capacity (SN 8 according to DIN EN ISO 9969); without coupling. Thanks to its flexibility, no accessories such as bends are required.

**Application:** connection pipe between road gully and shaft and/or main drainage pipe.








Product	Technical data			Cat. no.
AquaFlex	DN 150	D <sub>1</sub> = 147	D <sub>o</sub> = 173	55151150
	DN 200	D <sub>1</sub> = 197	D <sub>o</sub> = 233	55151200

#### Installation instructions

See our AquaPipe installation manual for the installation of AquaFlex!

## Product range overview – AquaFlex®

### AquaFlex® accessories

	Product	Technical data	Cat. no.
	Shaft coupling	DN 150 (for road gully)	55688150
	KG adapter with sealing ring (push-fit KG coupling)	DN 150	55661151
		DN 200	55661201
	Adapter	To clay pipe DN 150; sealing ring included (push-fit to clay L coupling)	55698998
	Concrete pipe connection set 3-piece	DN 150; (Ø 186 mm core drill hole required)	55687155
		DN 200; (Ø 226 mm core drill hole required)	55687205
	45° wye sealing rings included	DN 150/150	55640151
		DN 200/150	55641201
		DN 200/200	55640201
	Coupling sealing rings included	DN 150	55617150
		DN 200	55617200
	Profile sealing ring <sup>1)</sup>	DN 150	55617151
		DN 200	55617201

<sup>1)</sup> For lubricant for watertight coupling joints, see page 44.

## Product range overview – Strabusil® drainage pipes

SLW/HGV 60



Locally perforated, totally perforated and multi-purpose PE-HD pipes according to DIN 4262-1, type R2, total perforation area greater than or equal to 50 cm<sup>2</sup>/m for LP, TP, MP, 1.2 mm ± 0.4 mm perforation width.

Can be used in accordance with RAS-Ew (Directive relating to road construction – Part: Drainage (*Richtlinien für die Anlage von Straßen, Teil: Entwässerung*)); SN 4 according to DIN EN ISO 9969.

**Application:** drainage pipe to reliably drain roads, air fields, sports fields and when drainage pipes must meet increased requirements.

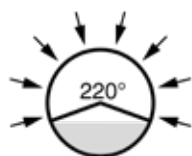
**NB**

All dimensions also available as unperforated pipe – Strabusil UP

↻ Installation manual [www.fraenkische.com](http://www.fraenkische.com)

### Strabusil® LP

Structured-wall (corrugated outside, smooth inside) locally perforated PE-HD pipe with coupling. Colour black, with white crown marking.

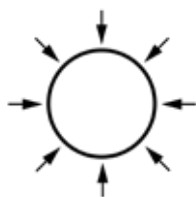


LP locally perforated pipes

Product	Technical data			Cat. no.
Strabusil LP 6 m length	DN/ID 100	D <sub>1</sub> = 104	D <sub>o</sub> = 118	55110100
	DN/ID 150	D <sub>1</sub> = 154	D <sub>o</sub> = 174	55110150
	DN/ID 200	D <sub>1</sub> = 202	D <sub>o</sub> = 236	55110200
	DN/ID 250	D <sub>1</sub> = 257	D <sub>o</sub> = 295	55110250
	DN/ID 300	D <sub>1</sub> = 303	D <sub>o</sub> = 349	55110300
	DN/ID 350	D <sub>1</sub> = 351	D <sub>o</sub> = 400	55110350
	DN/ID 400	D <sub>1</sub> = 404	D <sub>o</sub> = 462	55110400

### Strabusil® TP

Structured-wall (corrugated outside, smooth inside) totally perforated PE-HD pipe with coupling. Colour black.



TP totally perforated pipes

Product	Technical data			Cat. no.
Strabusil TP 6 m length	DN/ID 100	D <sub>1</sub> = 104	D <sub>o</sub> = 118	55100100
	DN/ID 150	D <sub>1</sub> = 155	D <sub>o</sub> = 174	55100150
	DN/ID 200	D <sub>1</sub> = 202	D <sub>o</sub> = 236	55100200
	DN/ID 250	D <sub>1</sub> = 257	D <sub>o</sub> = 295	55100250
	DN/ID 300	D <sub>1</sub> = 303	D <sub>o</sub> = 349	55100300
	DN/ID 350	D <sub>1</sub> = 351	D <sub>o</sub> = 400	55100350
	DN/ID 400	D <sub>1</sub> = 404	D <sub>o</sub> = 462	55100400

### Strabusil® MP

Structured-wall (corrugated outside, smooth inside) multi-purpose PE-HD pipe, with watertight coupling connection including sealing ring. Colour black, with white crown marking.



MP multi-purpose pipes

Product	Technical data			Cat. no.
Strabusil MP 6 m length	DN/ID 200	D <sub>1</sub> = 202	D <sub>o</sub> = 236	55120200
	DN/ID 250	D <sub>1</sub> = 257	D <sub>o</sub> = 295	55120250
	DN/ID 300	D <sub>1</sub> = 303	D <sub>o</sub> = 349	55120300
	DN/ID 350	D <sub>1</sub> = 351	D <sub>o</sub> = 400	55120350
	DN/ID 400	D <sub>1</sub> = 404	D <sub>o</sub> = 462	55120400

Custom pipes available on request.



## Product range overview – Strabusil® accessories

### Other fittings available on request

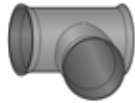


Product	Technical data	Cat. no.
Coupling	DN 100	55610100
	DN 150	55610150
	DN 200	55610200
	DN 250	55610250
	DN 300	55610300
	DN 350	55610350
	DN 400	55610400
Profile sealing ring <sup>1)</sup>	DN 100	55619100
	DN 150	55619150
	DN 200	55619200
	DN 250	55619250
	DN 300	55619300
	DN 350	55619350
	DN 400	55619400
45° bend	DN 100	55621100
	DN 150	55621150
	DN 200	55621200
	DN 250	55621250
	DN 300	55621300
	DN 350	55621350
	DN 400	55621400
90° bend	DN 100	55620100
	DN 150	55620150
	DN 200	55620200
	DN 250	55620250
	DN 300	55620300
	DN 350	55620350
	DN 400	55620400
End plug	DN 100	55680100
	DN 150	55680150
	DN 200	55680200
	DN 250	55680250
	DN 300	55680300
	DN 350	55680350
SD end cap	DN 400	55680400
Outlet with flap valve	DN 100; 1 m length	55679100
	DN 150; 1 m length	55679150
	DN 200; 1 m length	55679200
	DN 250; 1 m length	55679250
	DN 300; 1 m length	55679300
	DN 350; 1 m length	55679350
	DN 400; 1 m length	55679400

<sup>1)</sup> For lubricant for watertight coupling joints, see page 44.

## Product range overview – Strabusil® accessories

### Other fittings available on request



Product	Technical data	Cat. no.
Shaft lining / coupling	DN 100	55689100
	DN 150	55689150
Shaft lining	DN 200	55689200
	DN 250	55689250
	DN 300	55689300
	DN 350	55689350
	DN 400	55689400
	Tee	DN 100
DN 150		55630150
DN 200		55630200
DN 250		55630250
DN 300		55630300
DN 350		55630350
DN 400		55630400
Tee with reducer	DN 150/100	55631150
	DN 200/150	55631200
	DN 200/100	55632200
	DN 250/200	55631250
	DN 250/150	55632250
	DN 250/100	55633250
	DN 350/250	55631350
	DN 350/200	55632350
	DN 350/150	55633350
DN 350/100	55634350	
45° wye	DN 100	55640100
	DN 150	55640150
	DN 200	55640200
	DN 250	55640250
	DN 300	55640300
	DN 350	55640350
	DN 400	55640401
45° wye with reducer	DN 150/100	55641150
	DN 200/150	55641200
	DN 200/100	55642200
	DN 250/200	55641250
	DN 250/150	55642250
	DN 250/100	55643250
	DN 350/200	55642350
	DN 350/150	55643350
DN 350/100	55644350	

## Product range overview – Strabusil® accessories

Other fittings available on request



Product	Technical data	Cat. no.
Reducer	DN 150/100	55611150
	DN 200/150	55611200
	DN 200/100	55612200
	DN 250/200	55611250
	DN 250/150	55612250
	DN 250/100	55613250
	DN 350/250	55611350
	DN 350/200	55612350
	DN 350/150	55613350
	DN 350/100	55614350



KG adapter with KG spigot (push-fit KG coupling)	DN 100/100	55661100
	DN 150/150	55661150
	DN 200/200	55661200
	DN 250/250	55661250



KG adapter with KG coupling (KG spigot can be inserted)	DN 100/100	55660100
	DN 150/150	55660150
	DN 200/200	55660200

## Product range overview – StormPipe drainage pipes

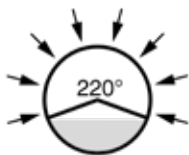
### StormPipe drainage pipe SN 8 (PE-HD)

Locally perforated, totally perforated and multi-purpose PE-HD pipes according to DIN 4262-1, type R2, total perforation area greater than or equal to 50 cm<sup>2</sup>/m for LP, TP and MP, 1.2 mm ± 0.4 mm perforation width. Can be used in accordance with RAS-Ew (Directive relating to road construction – Part: Drainage“ (*Richtlinien für die Anlage von Straßen, Teil: Entwässerung*)), SN 8 according to DIN EN ISO 9969.

**Application:** drainage pipe to reliably drain roads, air fields, sports fields and when drainage pipes must meet highest requirements.

### StormPipe LP

SLW/HGV 60



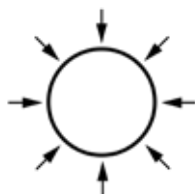
LP locally perforated pipes

Structured-wall (corrugated outside, smooth inside) locally perforated pipe with coupling. Black outside, grey inside, with white crown marking.

Product	Technical data			Cat. no.
StormPipe LP 6 m length	DN/ID 100	D <sub>i</sub> = 104	D <sub>o</sub> = 118	55118100
	DN/ID 150	D <sub>i</sub> = 149	D <sub>o</sub> = 173	55118150
	DN/ID 200	D <sub>i</sub> = 203	D <sub>o</sub> = 236	55118200
	DN/ID 250	D <sub>i</sub> = 255	D <sub>o</sub> = 295	55118250
	DN/ID 300	D <sub>i</sub> = 300	D <sub>o</sub> = 349	55118300
	DN/ID 350	D <sub>i</sub> = 347	D <sub>o</sub> = 399	55118350
	DN/ID 400	D <sub>i</sub> = 399	D <sub>o</sub> = 461	55118400
	DN/ID 500	D <sub>i</sub> = 499	D <sub>o</sub> = 570	55118500
DN/ID 600	D <sub>i</sub> = 596	D <sub>o</sub> = 684	55118600	

### StormPipe TP

SLW/HGV 60



TP totally perforated pipes

Structured-wall (corrugated outside, smooth inside) totally perforated pipe with coupling. Black outside, grey inside.

Product	Technical data			Cat. no.
StormPipe TP 6 m length	DN/ID 100	D <sub>i</sub> = 104	D <sub>o</sub> = 118	55108100
	DN/ID 150	D <sub>i</sub> = 149	D <sub>o</sub> = 173	55108150
	DN/ID 200	D <sub>i</sub> = 203	D <sub>o</sub> = 236	55108200
	DN/ID 250	D <sub>i</sub> = 255	D <sub>o</sub> = 295	55108250
	DN/ID 300	D <sub>i</sub> = 300	D <sub>o</sub> = 349	55108300
	DN/ID 350	D <sub>i</sub> = 347	D <sub>o</sub> = 399	55108350
	DN/ID 400	D <sub>i</sub> = 399	D <sub>o</sub> = 461	55108400
	DN/ID 500	D <sub>i</sub> = 499	D <sub>o</sub> = 570	55108500
DN/ID 600	D <sub>i</sub> = 596	D <sub>o</sub> = 684	55108600	

## Product range overview – StormPipe drainage pipes

### StormPipe LP and TP accessories

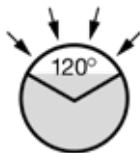


Please see Strabusil accessories for more fittings (pages 49 – 51)

Product	Technical data	Cat. no.
Coupling	DN 100	55917100
	DN 150	55917150
	DN 200	55917200
	DN 250	55917250
	DN 300	55917300
	DN 350	55917350
	DN 400	55917400
	DN 500	55917500
	DN 600	55917600

### StormPipe MP

SLW/HGV 60



MP multi-purpose pipes

Structured-wall (corrugated outside, smooth inside) multi-purpose pipe with coupling and profile sealing ring for watertight connections. Black outside, grey inside, with white crown marking.

Product	Technical data			Cat. no.
StormPipe MP 6 m length	DN/ID 100	D <sub>1</sub> = 104	D <sub>o</sub> = 118	55128100
	DN/ID 150	D <sub>1</sub> = 149	D <sub>o</sub> = 173	55128150
	DN/ID 200	D <sub>1</sub> = 203	D <sub>o</sub> = 236	55128200
	DN/ID 250	D <sub>1</sub> = 255	D <sub>o</sub> = 295	55128250
	DN/ID 300	D <sub>1</sub> = 300	D <sub>o</sub> = 349	55128300
	DN/ID 350	D <sub>1</sub> = 347	D <sub>o</sub> = 399	55128350
	DN/ID 400	D <sub>1</sub> = 399	D <sub>o</sub> = 461	55128400
	DN/ID 500	D <sub>1</sub> = 499	D <sub>o</sub> = 570	55128500
	DN/ID 600	D <sub>1</sub> = 596	D <sub>o</sub> = 684	55128600

### StormPipe MP accessories



Product	Technical data	Cat. no.
Coupling 2 sealing rings included	DN 100	55910100
	DN 150	55910150
	DN 200	55910200
	DN 250	55910250
	DN 300	55910300
	DN 350	55910350
	DN 400	55910400
	DN 500	55910500
	DN 600	55910600

## Product range overview – StormPipe accessories

### Other fittings available on request



Product	Technical data	Cat. no.
Profile sealing ring	DN 100	55919100
	DN 150	55919150
	DN 200	55919200
	DN 250	55919250
	DN 300	55919300
	DN 350	55919350
	DN 400	55919400
	DN 500	55919500
	DN 600	55919600



WD end cap	DN 150	55980150
	DN 200	55980200
	DN 250	55980250
	DN 300	55980300
	DN 350	55980350
	DN 400	55980400
	DN 500	55980500
	DN 600	55980600



Adapter StormPipe/ KG spigot	DN 150	55961150
	DN 200	55961200
	DN 250	55961250
	DN 300	55961300
	DN 350	55961350
	DN 400	55961400
	DN 500	55961500



45° wye	DN 150/150	55940150
	DN 200/200	55940200
	DN 250/250	55940250
	DN 300/300	55940300
	DN 350/350	55940350
	DN 400/400	55940400
	DN 500/500	55940500
	DN 600/600	55940600



15° bend	DN 150	55923150
	DN 200	55923200
	DN 250	55923250
	DN 300	55923300
	DN 350	55923350
	DN 400	55923400
	DN 500	55923500
	DN 600	55923600

## Product range overview – StormPipe accessories

Other fittings available on request

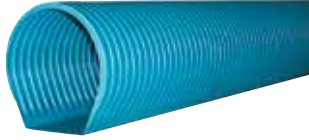


Product	Technical data	Cat. no.
30° bend	DN 150	55922150
	DN 200	55922200
	DN 250	55922250
	DN 300	55922300
	DN 350	55922350
	DN 400	55922400
	DN 500	55922500
	DN 600	55922600
45° bend	DN 150	55921150
	DN 200	55921200
	DN 250	55921250
	DN 300	55921300
	DN 350	55921350
	DN 400	55921400
	DN 500	55921500
	DN 600	55921600

## Product range overview – Strasil® drainage pipes

### Strasil® – drainage pipe SN 4 (PVC-U)

SLW/HGV 60

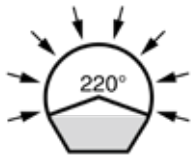


Locally perforated and multi-purpose PVC-U pipes according to DIN 4262-1 type C1 (formerly form F), total perforation area greater than or equal to 50 cm<sup>2</sup>/m, 1.2 mm ± 0.2 mm perforation width. Can be used in accordance with RAS-Ew (Directive relating to road construction – Part: Drainage (*Richtlinien für die Anlage von Straßen, Teil: Entwässerung*)), SN 4 according to DIN EN ISO 9969.

**Application:** as drainage pipe for reliable drainage in civil engineering, road engineering and industrial engineering.

### Strasil® LP

Locally perforated pipe, crossways corrugated, crossways offset perforation, tunnel-shaped, with smooth invert and coupling; colour blue.



LP locally perforated pipes

Product	Technical data			Cat. no.
Strasil LP 6 m length	DN/ID 100	D <sub>1</sub> = 99	D <sub>o</sub> = 110	55200100
	DN/ID 150	D <sub>1</sub> = 147	D <sub>o</sub> = 160	55200150
	DN/ID 200	D <sub>1</sub> = 196	D <sub>o</sub> = 217	55200200

### Strasil® MP

Multi-purpose pipe with watertight coupling connection; sealing rings included; colour blue.



MP multi-purpose pipes

Product	Technical data			Cat. no.
Strasil MP 6 m length	DN/ID 200	D <sub>1</sub> = 196	D <sub>o</sub> = 217	55210200
	DN/ID 250	D <sub>1</sub> = 238	D <sub>o</sub> = 262	55210250
	DN/OD 350	D <sub>1</sub> = 317	D <sub>o</sub> = 351	55210350



## Product range overview – Strasil® accessories

### Other fittings available on request



Product	Technical data	Cat. no.
Coupling	DN 100	55710100
	DN 150	55710150
	DN 200	55710200
	DN 250	55710250
	DN 350	55710350
Profile sealing ring <sup>1)</sup>	DN 200	55719200
	DN 250	55719250
	DN 350	55719350
45° bend	DN 100	55721100
	DN 150	55721150
	DN 200	55721200
	DN 250	55721250
	DN 350	55721350
90° bend	DN 100	55720100
	DN 150	55720150
	DN 200	55720200
	DN 250	55720250
	DN 350	55720350
End plug	DN 100	55780100
End cap	DN 150	55780150
	DN 200	55780200
	DN 250	55780250
	DN 350	55780350
Shaft lining/ coupling	DN 100	55789100
	DN 150	55789150
Shaft lining	DN 200	55789200
	DN 250	55789250
	DN 350	55789350
Outlet with flap valve	DN 100; 1 m length	55779100
	DN 150; 1 m length	55779150
	DN 200; 1 m length	55779200
	DN 250; 1 m length	55779250
	DN 350; 1 m length	55779350

<sup>1)</sup> For lubricant for watertight coupling joints, see page 44.

## Product range overview – Strasil® accessories

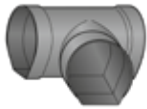
### Other fittings available on request



Product	Technical data	Cat. no.
KG adapter with KG coupling (KG spigot can be inserted)	DN 100/100	55760100
	DN 150/150	55760150
	DN 200/200	55760200



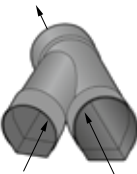
KG adapter with KG spigot (push-fit KG coupling)	DN 100/100	55761100
	DN 150/150	55761150
	DN 200/200	55761200
	DN 250/250	55761250



Tee	DN 100	55730100
	DN 150	55730150
	DN 200	55730200
	DN 250	55730250
	DN 350	55730350

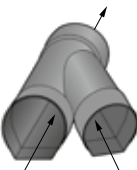


Tee with reducer	DN 150/100	55731150
	DN 200/150	55731200
	DN 200/100	55732200
	DN 250/200	55731250
	DN 250/150	55732250
	DN 250/100	55733250
	DN 350/250	55731350
	DN 350/200	55732350
	DN 350/150	55733350
DN 350/100	55734350	



Inflow from the left    Flow direction

45° left-hand wye	DN 100	55740100
	DN 150	55740150
	DN 200	55740200
	DN 250	55740250
	DN 350	55740350



Flow direction    Inflow from the right

45° right-hand wye	DN 100	55750100
	DN 150	55750150
	DN 200	55750200
	DN 250	55750250
	DN 350	55750350

## Product range overview – Strasil® accessories

### Other fittings available on request



Product	Technical data	Cat. no.
45° wye with left-hand reducer	DN 150/100	55741150
	DN 200/150	55741200
	DN 200/100	55742200
	DN 250/200	55741250
	DN 250/150	55742250
	DN 250/100	55743250
	DN 350/150	55743350
	DN 350/100	55744350



45° wye with right-hand reducer	DN 150/100	55751150
	DN 200/150	55751200
	DN 200/100	55752200
	DN 250/200	55751250
	DN 250/150	55752250
	DN 250/100	55753250
	DN 350/150	55753350
	DN 350/100	55754350



Reducer	DN 150/100	55711150
	DN 200/150	55711200
	DN 200/100	55712200
	DN 250/200	55711250
	DN 250/150	55712250
	DN 250/100	55713250
	DN 350/250	55711350
	DN 350/150	55713350
DN 350/100	55714350	

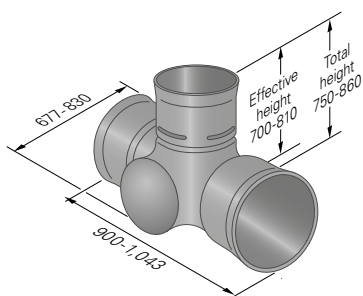
# Product range overview – StrabuControl®

## StrabuControl®



Certified jetting resistance

Certified CCTV inspection



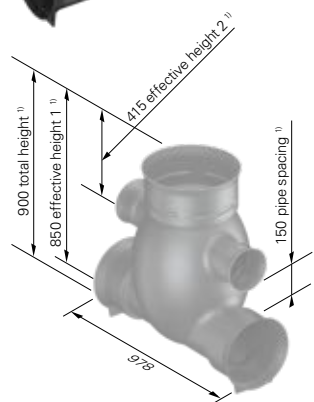
**Inside diameter of base body greater than 500 mm.**

PE-HD flushing and inspection shaft; colour black. UV-resistant; weight approx. 11 kg/12 kg, extremely durable and hard-wearing. Resistant to oils, acids, bases, greases, gasoline, diesel fuel according to DIN 8075 supplementary sheet 1; with integrated compensating area. Watertight, DIN 4262-1-compliant. Installation in traffic areas possible.

**Application:** flushing and inspection shaft for StormPipe and Strabusil drainage pipes for all fields of civil engineering and road engineering. Can be directly connected to StormPipe and Strabusil pipes using sealing rings.

Product	Technical data	Cat. no.
StrabuControl	2/250 180° shaft	55500402
	3/250 90° wye shaft	55500403
	4/250 cross shaft	55500404
	3/350 90° wye shaft	55501403
	4/350 cross shaft	55501404
	2/400 180° shaft	55502402

## StrabuControl® HP



**Inside diameter of base body greater than 500 mm.**

The piggyback arrangement consists of an AquaPipe DN 250 to DN 350 transport pipe with top Strabusil or StormPipe DN 150 drainage pipe. Clear pipe spacing is 15 cm.

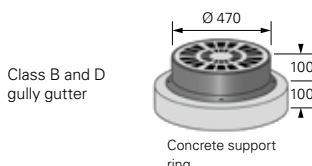
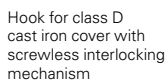
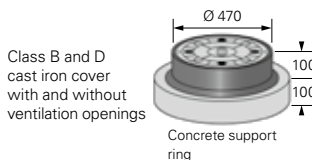
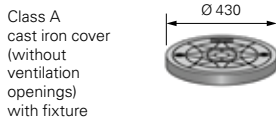
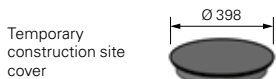
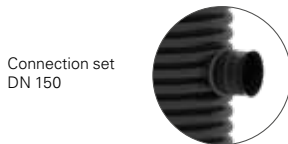
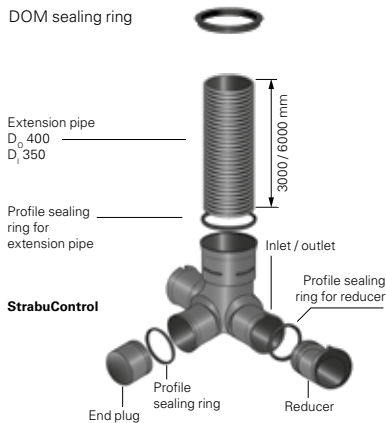
**Application:** flushing and inspection shaft for Strabusil and/or StormPipe drainage pipes and AquaPipe transport pipes for all fields of civil engineering and road engineering.

Product	Technical data	Cat. no.
StrabuControl HP	2/250 180° shaft	55501422
	3/250 90° wye shaft	① 55501413
	2/350 180° shaft <sup>1)</sup>	55501432
	2/250 – 150 (90°) 1 inlet/1 outlet DN 250 + inlet DN 150 (lateral 90°)	② 55501412
	2/350 – 150 (90°) <sup>1)</sup> 1 inlet/1 outlet DN 350 + inlet DN 150 (lateral 90°)	② 55501433

<sup>1)</sup> For StrabuControl HP 2/350: total height = 1,000, effective height 1 = 950, effective height 2 = 400 and pipe spacing = 150



# Product range overview – StrabuControl® accessories



Product	Technical data	Cat. no.
Extension pipe	D <sub>o</sub> 400; 3 m total length D <sub>o</sub> 400; 6 m total length	55540400 55540406
Coupling	D <sub>o</sub> 400; for extension pipe	55510400
Profile sealing ring <sup>1)</sup>	For extension pipe D <sub>o</sub> 400	55519400
Connection set DN 150 drainage pipe to extension pipe	For retrofit (on-site) connections of drainage pipes DN 150 to the extension pipe; required drilling Ø 186 mm	55573400
DOM sealing ring	For extension pipe D <sub>o</sub> 400; as a seal between concrete support ring and extension pipe	55519403
End plug	DN 250 DN 350	55580250 55580350
Reducer (for structured-wall pipes)	DN 250/200	55511250
	DN 250/150	55512250
	DN 250/100	55513250
	DN 350/150	55513350
	DN 350/250	55511350
	DN 350/300	55511353
	DN 400/300	55512400
Profile sealing ring <sup>1)</sup>	For reducer DN 250	55519250
	For reducer DN 350	55519350
	For reducer DN 400/DN 300	55519404
Temporary construction site cover	PP; for extension pipe D <sub>o</sub> 400	55580400
Shaft cover <sup>2)</sup>	Cast iron; class A 15 (cast iron cover with fixture; without ventilation openings)	55585100
	Cast iron; class B 125 (cast iron cover, cast iron frame, concrete support ring; without ventilation openings)	55585000
	Cast iron; class D 400 (cast iron cover, cast iron frame, concrete support ring, without ventilation openings with screwless interlocking mechanism)	55585400
	Cast iron, class D 400 surface-watertight (cast iron cover with double screw connection, cast iron frame, concrete support ring, without ventilation openings)	55585440
	Cast iron; class B 125 (cast iron cover, cast iron frame, concrete support ring; with ventilation openings)	55584000
Hook	Cast iron; class D 400 (cast iron cover, cast iron frame, concrete support ring with ventilation openings, with screwless interlocking mechanism)	55584400
	Galvanised steel hook (for class D covers with screwless interlocking mechanism)	55586990
Gully gutter <sup>2)</sup>	Cast iron; class B 125 (gully gutter, cast iron frame, concrete support ring)	55584100
Gully gutter with snap-on locking device <sup>2)</sup>	Cast iron; class D 400 (gully gutter with snap-on locking device, cast iron frame, concrete support ring)	55584500
Dirt trap	For gully gutters and covers with ventilation openings	55591000
Sloped concrete support ring	W x H = 500 x 530 mm	55584009

<sup>1)</sup> For lubricant for watertight coupling joints, see page 44.

<sup>2)</sup> V2A screws

**Strasil reducers and other fittings available on request**

## Product range overview – StrabuControl® 600

### StrabuControl® 600



**Inside diameter of base body greater than 600 mm.**

PE-HD flushing and inspection shaft; colour black. Monolithic base body without weld seams. UV-resistant; weight approx. 15 kg, extremely durable and hard-wearing. Impact and break-resistant. Resistant to oils, acids, bases, greases, gasoline, diesel fuel according to DIN 8075 supplementary sheet 1; with integrated compensating area. Watertight, DIN 4262-1-compliant. Connection to standard covers 625 mm and installation in traffic areas possible.

**Application:** flushing and inspection shaft for StormPipe and Strabusil drainage pipes for all fields of civil engineering and road engineering. Can be directly connected to StormPipe and Strabusil pipes using sealing rings.



Product	Technical data	Cat. no.
StrabuControl 600	2/250 180° shaft	55500602
	2/400 180° shaft	55502602
	2/250 – 150 (90°) 1 inlet/1 outlet DN 250 + inlet DN 150 (lateral 90°)	55500603
	2/400 – 150 (90°) 1 inlet/1 outlet DN 400 + inlet DN 150 (lateral 90°)	55502603

### StrabuControl® 600 HP



**Inside diameter of base body greater than 600 mm.**

The piggyback arrangement consists of an AquaPipe DN 200 to DN 350 transport pipe with top Strabusil or StormPipe DN 150 drainage pipe. Clear pipe spacing is 15 cm. Connection to standard covers 625 mm and installation in traffic areas possible.

**Application:** flushing and inspection shaft for Strabusil and/or StormPipe drainage pipes and AquaPipe transport pipes for all fields of civil engineering and road engineering.



Product	Technical data	Cat. no.
StrabuControl 600 HP	2/250 180° shaft	55501622
	2/350 180° shaft <sup>1)</sup>	55501632
	2/250 – 150 (90°) 1 inlet/1 outlet DN 250 + inlet DN 150 (lateral 90°)	55501612
	2/350 – 150 (90°) <sup>1)</sup> 1 inlet/1 outlet DN 350 + inlet DN 150 (lateral 90°)	55501613

<sup>1)</sup> For StrabuControl 600 HP 2/350: total height = 1,050, effective height 1 = 1,000, effective height 2 = 455 and pipe spacing = 150

# Product range overview – StrabuControl® 600

## StrabuControl® 600 V



**Inside diameter of base body greater than 600 mm.**

PE-HD flushing and inspection shaft; with freely selectable connection angle between 90° and 270°; monolithic base body; colour black. UV-resistant, extremely durable and hard-wearing; impact- and break-resistant from -20 °C to +80 °C, resistant to oils, acids, bases, greases, gasoline, diesel fuel according to DIN 8075 supplementary sheet 1. Connection to standard covers 625 mm and installation in traffic areas possible, with integrated compensating area.

**Application:** flushing and inspection shaft for Strabusil and/or StormPipe drainage pipes for all fields of civil engineering and road engineering.

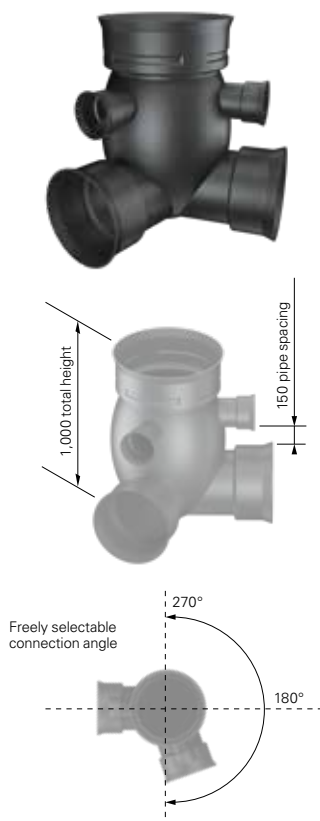
Product	Technical data	Cat. no.
StrabuControl 600 V Shaft with variable connection angle	2/100	55501660
	2/150	55501665
	2/200	55501670
	2/250	55501675
	2/300	55501680
	2/350	55501685
	2/400	55501690

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## StrabuControl® 600 V HP



**Inside diameter of base body greater than 600 mm.**

The piggyback arrangement consists of an AquaPipe DN 200 to DN 350 transport pipe with top Strabusil or StormPipe DN 150 drainage pipe. Clear pipe spacing is 15 cm and the connection angle can be freely selected between 90° and 270°. Connection to standard covers 625 mm and installation in traffic areas possible.

**Application:** flushing and inspection shaft for Strabusil and/or StormPipe drainage pipes for all fields of civil engineering and road engineering.

Product	Technical data	Cat. no.
StrabuControl 600 V HP with variable connection angle	2/200	55501620
	2/250	55501625
	2/300	55501630
	2/350	55501635

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## Product range overview – StrabuControl® 600 accessories

Strasil reducers as well as other fittings and special shafts available on request.

DOM sealing ring



Extension pipe



Profile sealing ring for extension pipe



Connection set DN 150



Product	Technical data	Cat. no.
Profile sealing ring <sup>1)</sup>	For reducer DN 250	55519250
	For reducer DN 350	55519350
	For reducer DN 400	55519404
End plug	DN 250	55580250
	DN 350	55580350
Reducer (for structured-wall pipes)	DN 250/200	55511250
	DN 250/150	55512250
	DN 250/100	55513250
	DN 350/150	55513350
	DN 350/250	55511350
	DN 350/300	55511353
	DN 400/300	55512400
	DN 400/350	55511400
Extension pipe	D <sub>o</sub> 600; 1 m length	55540561
	D <sub>o</sub> 600; 2 m length	55540562
	D <sub>o</sub> 600; 3 m length	55540563
	D <sub>o</sub> 600; 6 m length	55540566
Profile sealing ring for extension pipe <sup>1)</sup>	Seal between extension pipe and shaft body	55519561
Coupling	D <sub>o</sub> 600; for extension pipe	55510660
DOM sealing ring	For extension pipe D <sub>o</sub> 600; as a seal between concrete support ring and extension pipe	55519565
Connection set DN 150 drainage pipe to extension pipe	For retrofit (on-site) connections of drainage pipes DN 150 to the extension pipe; Ø 186 mm drill hole required	55573600
Concrete adapter ring	Connection of standard gully gutter 500 x 500 mm, with 625 mm standard concrete support ring (DIN 4034)	55584066
Support ring acc. to DIN 4034, part 1	60/80/100 mm high	–
Standard covers acc. to DIN EN 124	Class B or D CW 610	–
Gully gutter acc. to DIN EN 124 with bucket handle and stretched bucket (acc. to DIN 4052-A4)	Class B, C or D CW 610	–

Special shafts, e.g., wye shaft or shafts with direct lateral connection DN 150 to road gully available on request.

<sup>1)</sup> For lubricant for watertight coupling joints, see page 44.



## Product range overview – AquaTraffic® Control

### AquaTraffic® Control



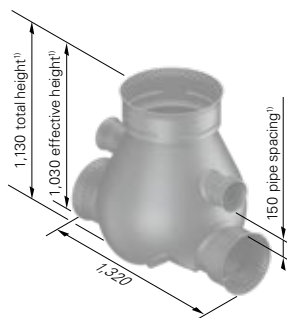
Special shafts available on request

**Inside diameter of base body greater than 900 mm.** PE-HD flushing and inspection shaft; monolithic base body without weld seams; colour black; UV-resistant; weight smaller than or equal to 40 kg; extremely durable and hard-wearing; impact- and break-resistant from  $-20\text{ °C}$  to  $+80\text{ °C}$ ; resistant to oils, acids, bases, greases, gasoline, diesel fuel according to DIN 8075 supplementary sheet 1. With integrated compensating area; connection of standard covers 625 mm.

**Application:** flushing and inspection shaft for all fields of civil engineering and road engineering.

Product	Technical data	Cat. no.
AquaTrafficControl shaft 180°	2/300	55508300
	2/400	55508400
	2/500	55508500
	2/600	55508600
AquaTrafficControl 180° with reducer	300/400	55508402
	400/500	55508501
	500/600	55508601
AquaTrafficControl start shaft/target shaft	300	55506300
	400	55506400
	500	55506500
	600	55506600

### AquaTraffic® Control HP



Special shafts available on request

The piggyback arrangement consists of an AquaPipe DN 300 – DN 600 transport pipe with top Strabusil DN 150 drainage pipe. Clear pipe spacing is 15 cm.

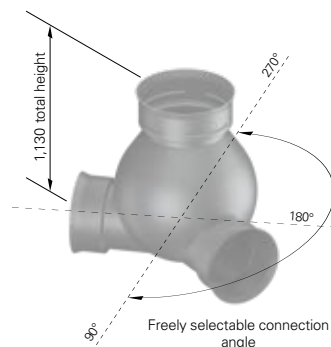
**Application:** flushing and inspection shaft for all fields of civil engineering and road engineering.

Product	Technical data	Cat. no.
AquaTrafficControl HP 180° shaft	2/300	55508315
	2/400	55508415
	2/500	55508515
	2/600 <sup>1)</sup>	55508615
	Other types	available on request

<sup>1)</sup> For AquaTrafficControl HP 2/600 total height = 1,340, effective height = 1,275 and pipe spacing = 170

# Product range overview – AquaTraffic® Control

## AquaTraffic® Control V



**Inside diameter of base body greater than 900 mm.**

PE-HD flushing and inspection shaft; with freely selectable connection angle between 90° and 270°; monolithic base body; colour black; UV-resistant; weight approx. 40 kg; extremely durable and hard-wearing; impact- and break-resistant from -20 °C to +80 °C; resistant to oils, acids, bases, greases, gasoline, diesel fuel according to DIN 8075 supplementary sheet 1; with integrated compensating area.

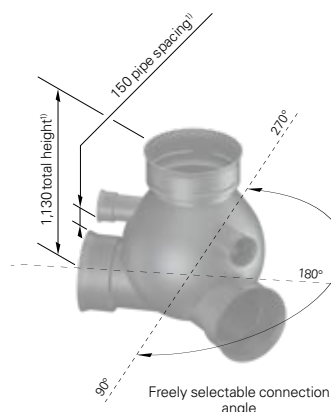
**Application:** flushing and inspection shaft for all fields of civil engineering and road engineering.

Product	Technical data	Cat. no.
AquaTrafficControl V shaft with freely selectable connection angle	2/300	55509310
	2/400	55509410
	2/500	55509510
	2/600	55509610
AquaTrafficControl V; shaft with freely selectable connection angle and individual nominal connection diameters	individual	55509999

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## AquaTraffic® Control V HP



The piggyback arrangement consists of an AquaPipe DN 300 to DN 600 transport pipe with top Strabusil DN 150 drainage pipe. Clear pipe spacing is 15 cm. Weight approx. 40 kg.

**Application:** flushing and inspection shaft for all fields of civil engineering and road engineering.

Product	Technical data	Cat. no.
AquaTrafficControl V HP with freely selectable connection angle	2/300	55509315
	2/400	55509415
	2/500	55509515
	2/600 <sup>1)</sup>	55509615

<sup>1)</sup> For AquaTrafficControl V HP 2/600 total height = 1,250 and pipe spacing = 170

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Special shafts available on request.

## Product range overview – AquaTraffic® Control accessories

	Product	Technical data	Cat. no.
DOM sealing ring	Extension pipe	D <sub>o</sub> 600; 1 m length	55540501
		D <sub>o</sub> 600; 2 m length	55540502
		D <sub>o</sub> 600; 3 m length	55540503
		D <sub>o</sub> 600; 6 m length	55540506
Extension pipe	Coupling	D <sub>o</sub> 600; for extension pipe	55510600
	Profile sealing ring for extension pipe <sup>1)</sup>	Seal between extension pipe and shaft body	55519501
Profile sealing ring for extension pipe	Connection set DN 150 drainage pipe to extension pipe	For retrofit (on-site) connections of drainage pipes DN 150 to the extension pipe; required drilling Ø 186 mm	55573610
	DOM sealing ring	For extension pipe D <sub>o</sub> 600; as a seal between concrete support ring and extension pipe	55519505
Connection set DN 150	Concrete adapter ring	Connection of standard gully gutter 500 x 500 mm, with 625 mm standard concrete support ring (DIN 4034)	55584006
	Support ring acc. to DIN 4034, part 1	60/80/100 mm high	–
	Standard covers acc. to DIN EN 124	Class B or D CW 610	–
	Gully gutter acc. to DIN EN 124 with bucket handle and stretched bucket (acc. to DIN 4052-A4)	Class B, C or D CW 610	–

<sup>1)</sup> For lubricant for watertight coupling joints, see page 44.

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Information about or assessments of the use and installation of our products and systems is exclusively provided on the basis of the information submitted. We do not assume any liability for damage caused by incomplete information. If the actual situation deviates from the planned situation or if a new situation occurs or if different or new installation techniques are applied, these must be agreed upon with FRÄNKISCHE, since these situations or techniques may lead to different conclusions. Notwithstanding the above, the customer is solely responsible for verifying the suitability of our products and systems for the intended purpose. In addition, we do not assume any liability or responsibility for system characteristics and system functionalities when third-party products or accessories are used in combination with FRÄNKISCHE systems. We only assume liability if original FRÄNKISCHE products are used. For use in other countries than Germany, country-specific standards and regulations must also be observed.

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# Information concerning DIN 4262-1

## Pipes and fittings for subsoil drainage of traffic areas and underground engineering

### Part 1: Pipes, fittings and their joints made of PVC-U, PP and PE

The new, revised DIN 4262-1 "Pipes and fittings for subsoil drainage of traffic areas and underground engineering – Part 1: Pipes, fittings and their joints made of PVC-U, PP and PE" was published in October 2009. It replaces the old version of 2001-1.

#### ■ Introduction of stiffness classes (SN classes):






So far, pipes have been divided in two categories: ND and SD. Depending on the nominal diameter, ND pipes were SN2/SN4 and SD pipes were SN4/SN8. Pipes are now clearly marked according to their SN classes. All Strabusil and Strasil pipes are category SN4 and higher.








#### ■ Specification of the actual pipe inside diameter, e.g., DN/ID, DN/OD:

So far, drainage pipes have only been categorised in DN classes. Since for the majority of pipes the nominal diameter matched the inside diameter of the pipe, no additional differentiation was necessary. Now that the standard also covers solid drainage pipes, a more specific identification is needed, since the nominal and the inside diameters of drainage pipes usually vary. The actual inside diameter of the pipe must be specified. It must be clearly identified on the pipe if DN is the effective hydraulic inside diameter ID or only the outside diameter OD.

#### Important

AquaPipe, AquaFlex, Strabusil, StormPipe and Strasil and their accessories fully comply with the requirements of DIN 4262-1. The following describes the most important changes and amendments of the currently valid version 10/2009:

DIN 4262-1 / Last modified 10/2009		
Type		FRW products
R1	 Circular, corrugated drainage pipes	
R2	 Structured-wall pipes with smooth inside	<b>AquaPipe, AquaFlex, Strabusil, StormPipe</b>
R3	 Circular, solid-wall drainage pipes	
C1	 Tunnel-shaped pipes with corrugated inside and smooth invert	<b>Strasil</b>
C2	 Tunnel-shaped pipes with smooth inside	

DIN 4262-1 / modified 10/2009 / 01/2001		Formerly	
	<b>TP</b> = totally perforated pipe		<b>VS</b> = Vollsickerrohr
	<b>LP</b> = locally perforated pipe		<b>TS</b> = Teilsickerrohr
	<b>MP</b> = multi-purpose pipe		<b>MZ</b> = Mehrzweckrohr
	<b>UP</b> = unperforated pipe		

Load class capabilities of shaft covers		
Class	Test load	Suitable for installation in
A 15	15 kN	Areas that are used by pedestrians and cyclists only and similar areas.
B 125	125 kN	Footways, pedestrian areas and similar areas, passenger car parks or car parking decks.
D 400	400 kN	Carriageways of roads, parking areas and similar hard shoulders (e.g., rest areas).

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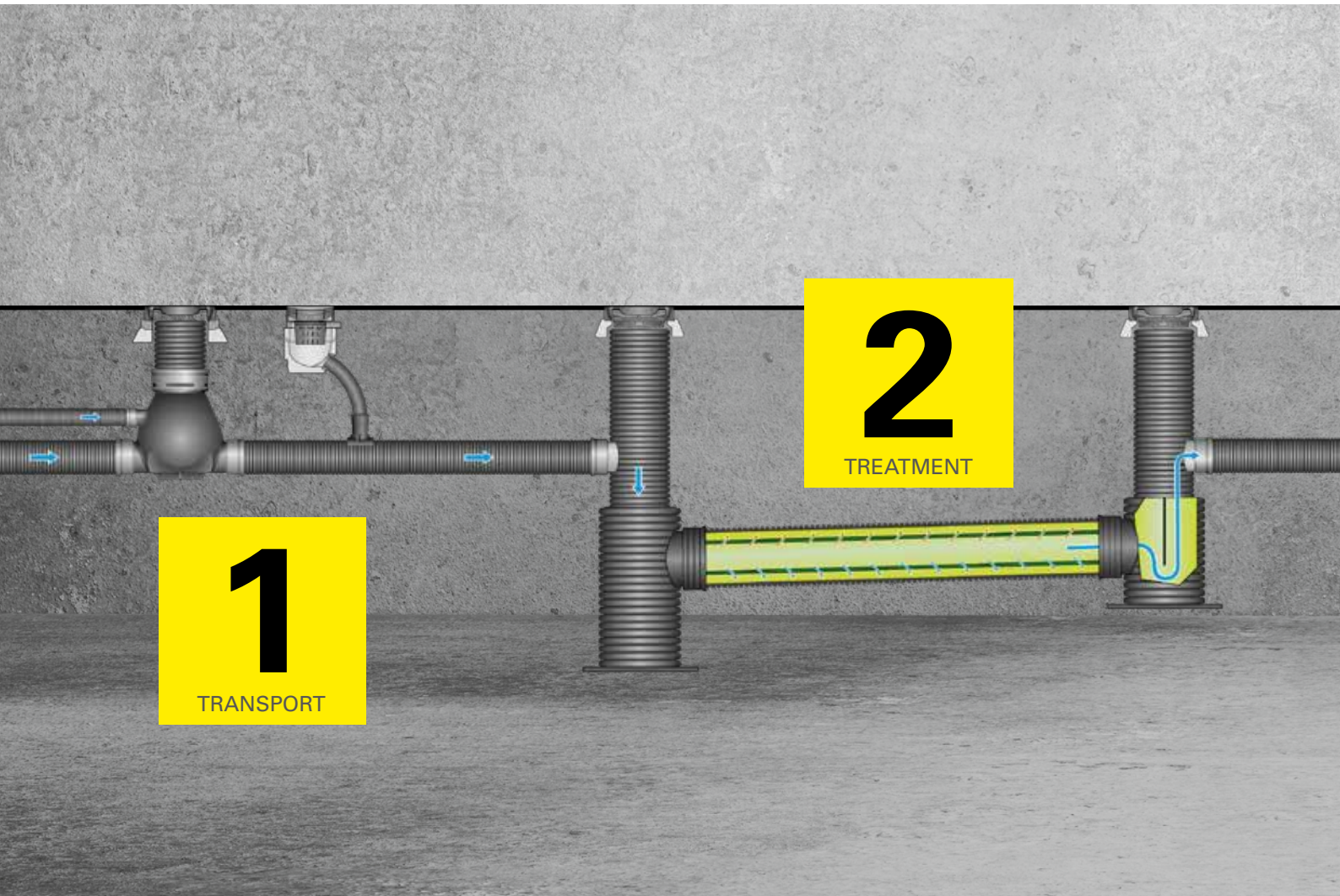
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## 4 challenges – 1 solution



## Stormwater is our competence

Rain falls on roads, squares, roofs, airports, stadiums and many other paved surfaces. Wherever it cannot be treated, stored and discharged naturally, our competencies are needed: **re-establishing the natural water cycle where it has been interrupted and re-channelling water back to natural storage areas – economically, ecologically and wisely.**

We have been working in the fields of **stormwater management, urban drainage, as well as road and track drainage** for more than 30 years. We know today that every task related to stormwater requires integrated, systems thinking.

Our solutions are characterised by:

- 100 % physical, functional and systematic reliability of all components,
- 100 % compatibility of all components and systems in the functional chain,
- Long durability and excellent maintenance-friendliness across all areas of operation.



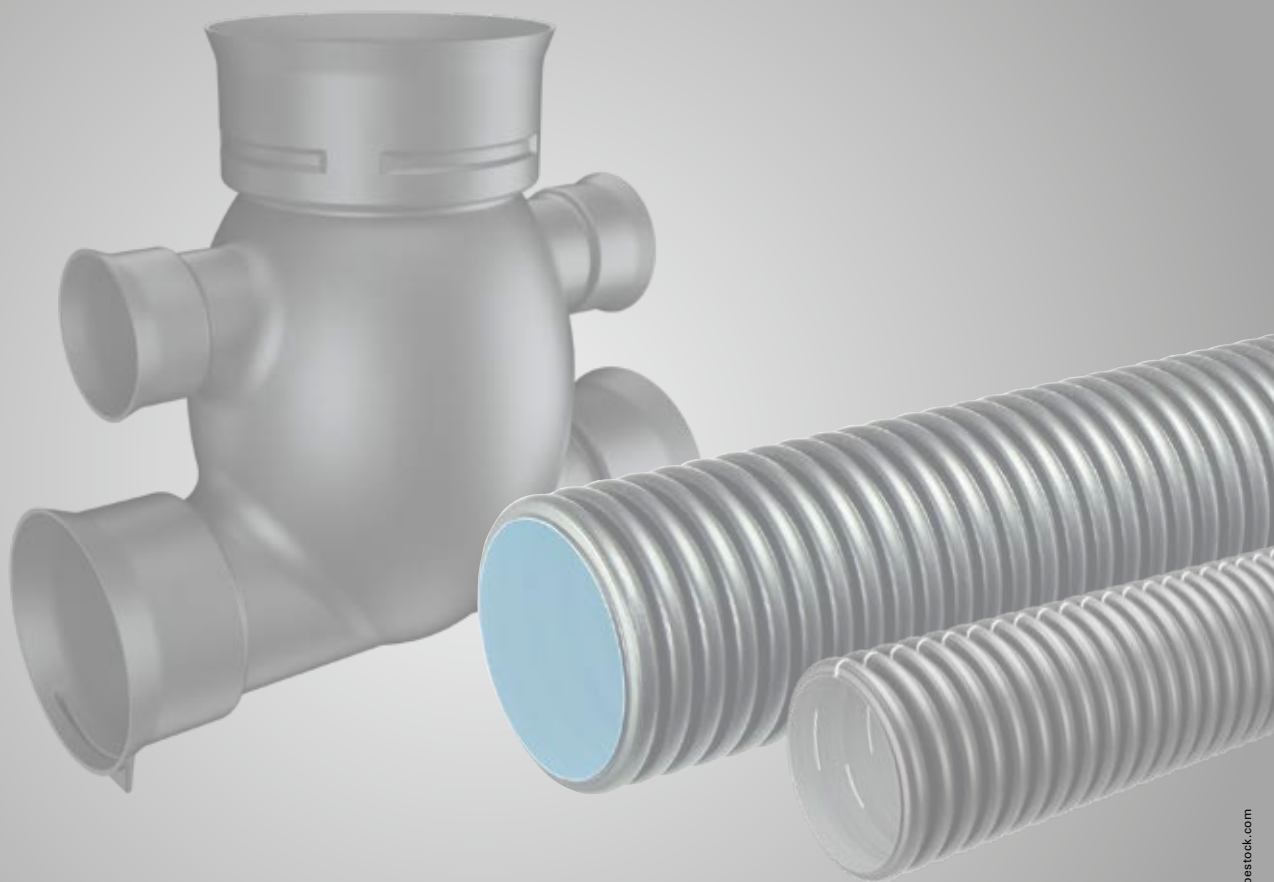
We provide full service, i.e., all system components including all steps before or after construction can be provided from a single source, if necessary.

On the one hand, this makes project realisation highly efficient and, on the other hand, guarantees efficient system maintenance. In this context, we focus on protecting our customers' investments.

All our drainage systems always meet the four fundamental tasks in handling stormwater:

- Transport
- Treatment
- Storage
- Discharge

Depending on the project-specific framework conditions, we combine our well-matched product components to create a complete system, thus providing an integrated system solution to your drainage needs. Our focus is on meeting all requirements under public law in accordance with the needs of the operators. Finally, the natural water cycle is re-established.



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# FRÄNKISCHE

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