

*SF-100, SF-150, SF-200, SF-300*

# Channel drainage for the load classes D 400 to F 900



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	Load class D 400/E 600/F 900

Port of Nuremberg drainage





## **ANRIN – the drainage system**

At our production and logistics centre located in Anröchte, North Rhine Westphalia, we have been developing and producing pioneering drainage channels made of resin concrete and cover gratings for all physical and artistic demands of modern channel drainage since 1971.

Thanks to our especially efficient distribution, we are able to supply any construction site in Germany in less than 48 hours as well as many other countries within just a few days. Always new, creative and patented channel and grating systems give our demanding construction managers, architects, tradesmen and specialist dealers the safe and secure feeling that they have made the right choice for the long term.

Millions of metres of installed channel and certification in accordance with DIN EN ISO 9001 assure the high quality of our owner-operated family company. We place a special emphasis on technical and application-based consultation, with the goal of continuously finding the best solution for your individual construction project. Contact us and put our expertise to the test.



**ANRIN heavy duty systems  
made of resin concrete**

The material comprised of naturally occurring mineral quartzes and resin is distinguished by its structural and environmental benefits.

In comparison with conventional, cement-bound materials, resin concrete allows for unit weights which are much easier to handle. By processing the material on the construction site, time and money are saved.



**UNILINK® joint**

The optimised **UNILINK®** joint system eliminates the traditional differentiation between the beginning and end of the channel. Elements with an equal installation height can be joined in any arbitrary direction. The symmetrically divided half-joints enable the optional sealing of the splicing. Vertically aligned grooves and tongues support an efficient installation: In the process, the installation alignment can be chosen arbitrarily! The flexibility in the design and installation phases enters a new dimension with the **UNILINK®** joint!



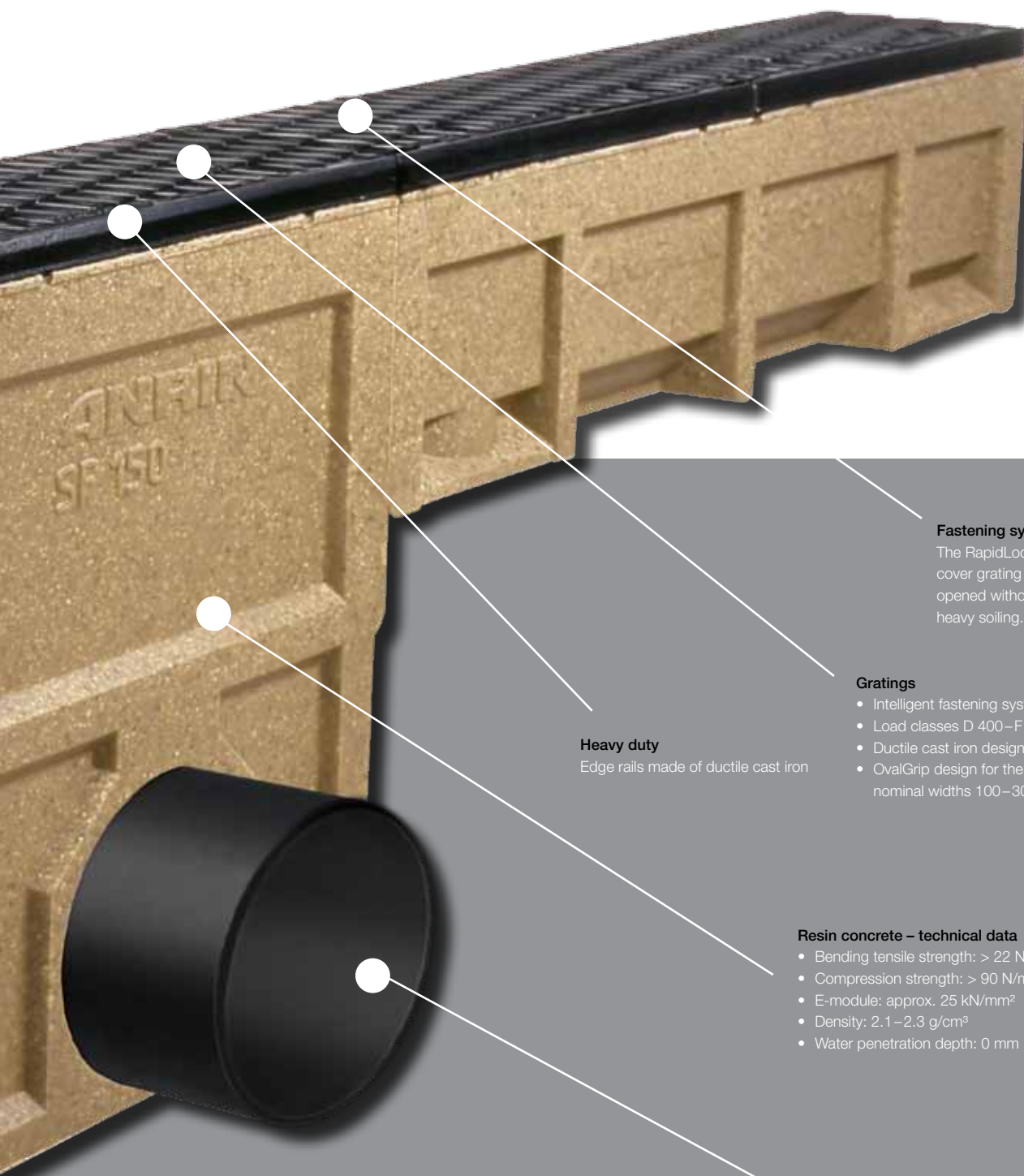
**Perforations on the 50 cm elements for**

- T-junctions
- Elbow joints
- Cross junctions

The high quality of the individual components as well as the closed material matrix make the ANRIN resin concrete watertight and highly resistant to corrosion as well as a number of substances.

As a result, surfaces can be designed which purposefully drain off rainwater and the ground water can be reliably protected against environmental pollution.

Our drainage systems (KE and SF) are tested and certified in accordance with DIN EN 1433 and KIWA BRL 5211.



#### Fastening system

The RapidLock automatically fastens the cover grating safely for traffic and can be opened without special tools, even with heavy soiling.

#### Gratings

- Intelligent fastening system
- Load classes D 400 – F 900
- Ductile cast iron design
- OvalGrip design for the nominal widths 100–300

#### Heavy duty

Edge rails made of ductile cast iron

#### Resin concrete – technical data

- Bending tensile strength: > 22 N/mm<sup>2</sup>
- Compression strength: > 90 N/mm<sup>2</sup>
- E-module: approx. 25 kN/mm<sup>2</sup>
- Density: 2.1–2.3 g/cm<sup>3</sup>
- Water penetration depth: 0 mm

#### Pipe sockets

already poured in the component  
DA/OD 110/160/200



**Channel drainage  
for the load classes  
D 400 to F 900**

According to DIN 19580/EN 1433 "Drainage channels for vehicular and pedestrian areas", these surfaces are assigned to specific load classes depending on the use.

Accordingly, the respective suitable ANRIN heavy duty system can be selected with the appropriate cover grating. The following tables include a list of typical areas of application and the channel systems which can be used.

- 1 Regensburg CC access drive
- 2 Passau city centre
- 3 Regensburg CC parking lot
- 4 Port of Nuremberg
- 5 Port of Nuremberg
- 6 Passau administration



<b>Load classes<sup>1</sup></b>	<b>Areas of application</b>	<b>SF-100</b>	<b>SF-150</b>	<b>SF-200</b>	<b>SF-300</b>
<b>D 400<sup>2</sup></b> (test force 400 kN)	Roads	●	●	●	●
	Parking surfaces	●	●	●	●
	Pedestrian roads	●	●	●	●
<b>E 600</b> (test force 600 kN)	Traffic routes in industrial areas	●	●	●	●
	Surfaces with high wheel loads	●	●	●	●
	Non-public traffic surfaces	●	●	●	●
<b>F 900</b> (test force 900 kN)	Flight operations areas of commercial airports	●	●	●	●
	Special surfaces	●	●	●	●

<sup>1</sup> in accordance with DIN 19580    <sup>2</sup> no cross-road drainage of busy roads





**ANRIN SF-100 heavy duty channel  
with GJS cast edge rail**

①



②



③



④



⑤



⑥



① **SF-100**  
100 cm

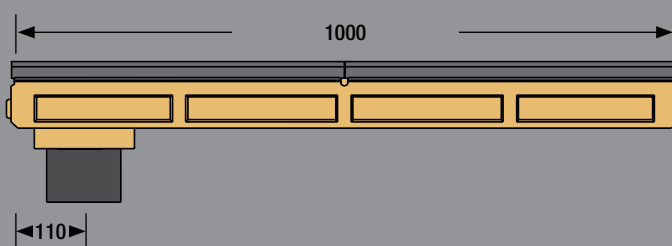
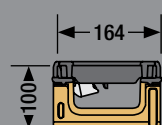
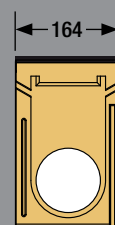
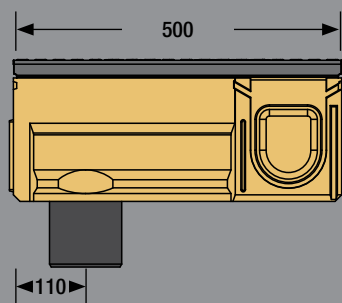
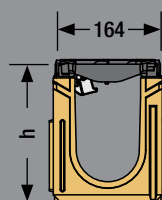
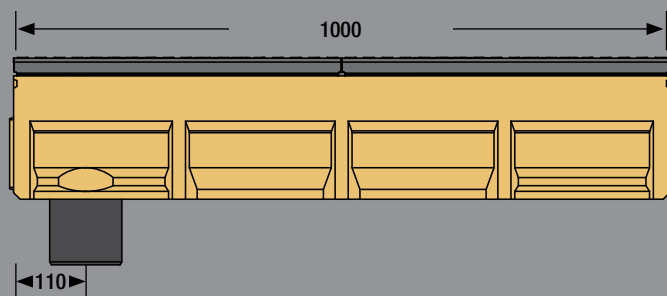
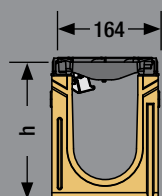
② **SF-100**  
50 cm

③ **Step connector**

④ **End cap**  
with DA/OD 110  
poured pipe socket

⑤ **End cap**

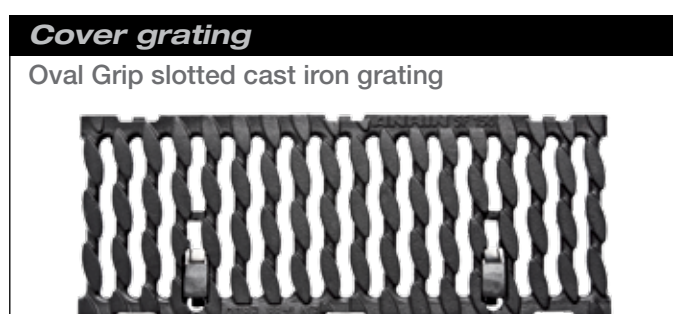
⑥ **Sump unit**  
with DA/OD 110  
poured pipe socket





<b>Product specifications</b>	<b>SF-100</b>	<b>Sump unit</b>
Material	Resin concrete	Resin concrete
Length	50 cm and 100 cm	50 cm
Width	16.4 cm	16.4 cm
Height	10.0–26.50 cm	58.0 cm
Edge type	GJS cast edge rail	GJS cast edge rail
Nominal width	<b>100 mm</b>	<b>100 mm</b>
Cover gratings	F 900*	F 900*
Slope type	Slope invert 0.5 %	
	Stepped invert	
	Constant invert	
Joint type	<b>UNILINK® joint</b>	<b>UNILINK® joint</b>
Fastening	RapidLock fastening	RapidLock fastening

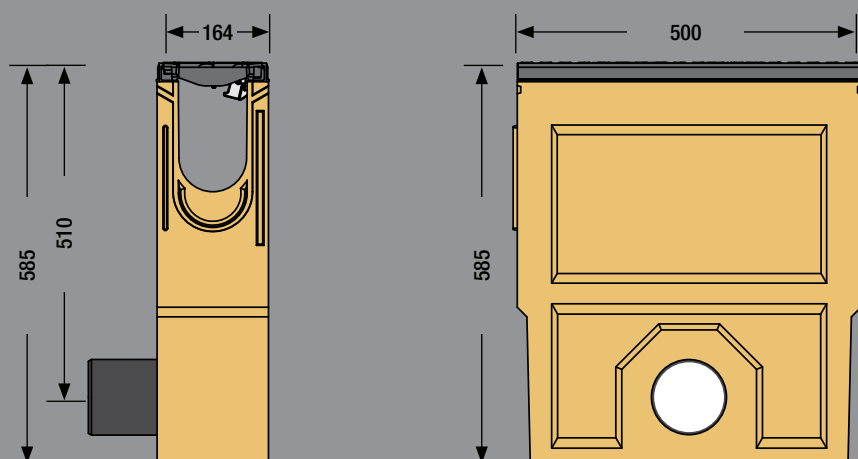
\* no cross-road drainage of busy roads



**Load classes**

Oval Grip SF-100 slotted cast iron grating

D 400* / E 600*	
F 900*	●



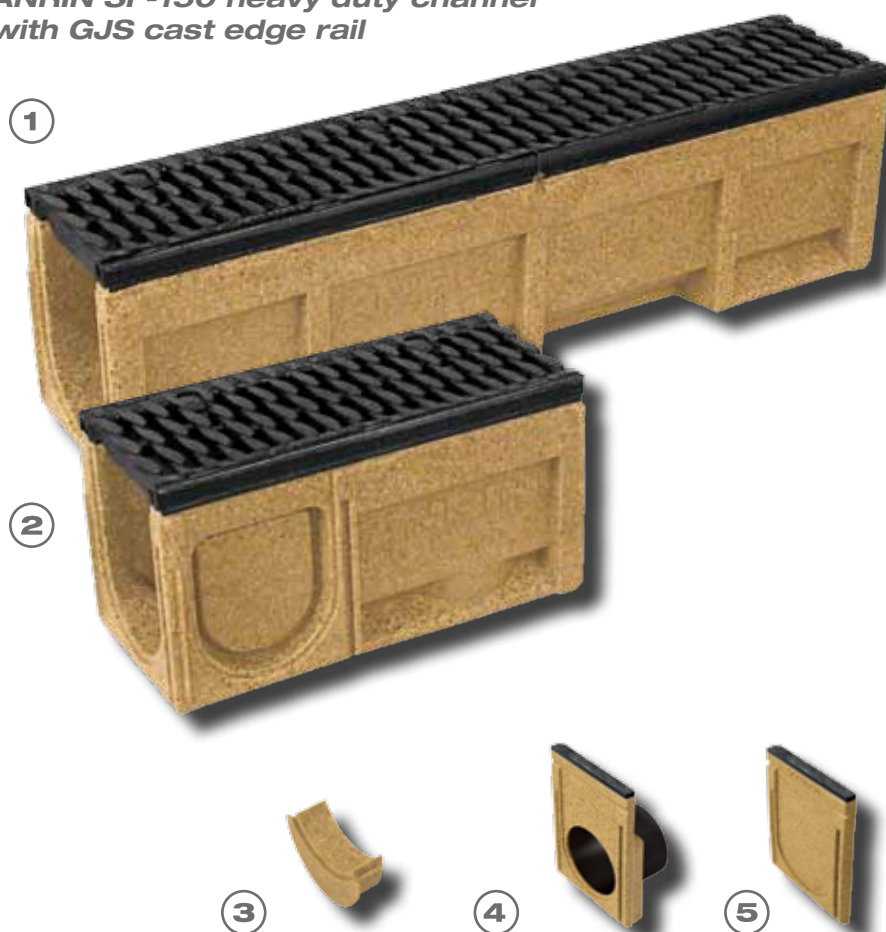
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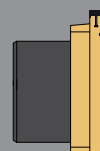
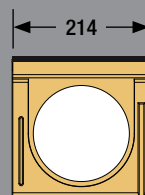
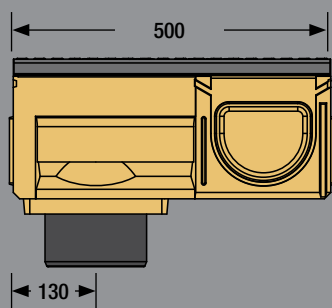
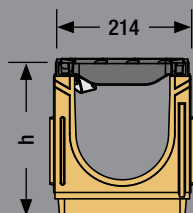
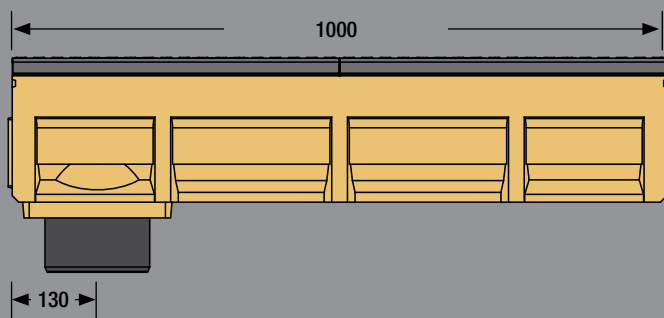
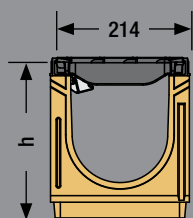
**ANRIN DIRECT CONTACT: +49 (0) 29 47.97 81-0**



**ANRIN SF-150 heavy duty channel  
with GJS cast edge rail**



- ① **SF-150**  
100 cm
- ② **SF-150**  
50 cm
- ③ **Step connector**
- ④ **End cap**  
with DA/OD 160  
poured pipe socket
- ⑤ **End cap**
- ⑥ **Sump unit**  
with DA/OD 160  
poured pipe socket



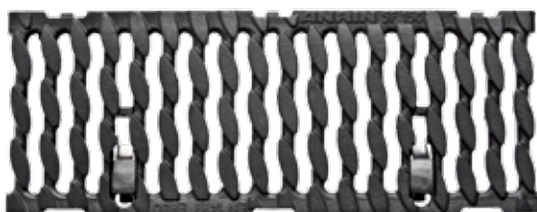


<b>Product specifications</b>	<b>SF-150</b>	<b>Sump unit</b>
Material	Resin concrete	Resin concrete
Length	50 cm and 100 cm	50 cm
Width	21.4 cm	21.4 cm
Height	22.0–32.0 cm	62.0 cm
Edge type	GJS cast edge rail	GJS cast edge rail
Nominal width	<b>150 mm</b>	<b>150 mm</b>
Cover gratings	D 400*/E 600* and F 900*	D 400*/E 600* and F 900*
Slope type	Slope invert 0.5 %	
	Stepped invert	
	Constant invert	
Joint type	<b>UNILINK® joint</b>	<b>UNILINK® joint</b>
Fastening	RapidLock fastening	RapidLock fastening

\* no cross-road drainage of busy roads

### Cover grating

Oval Grip slotted cast iron grating

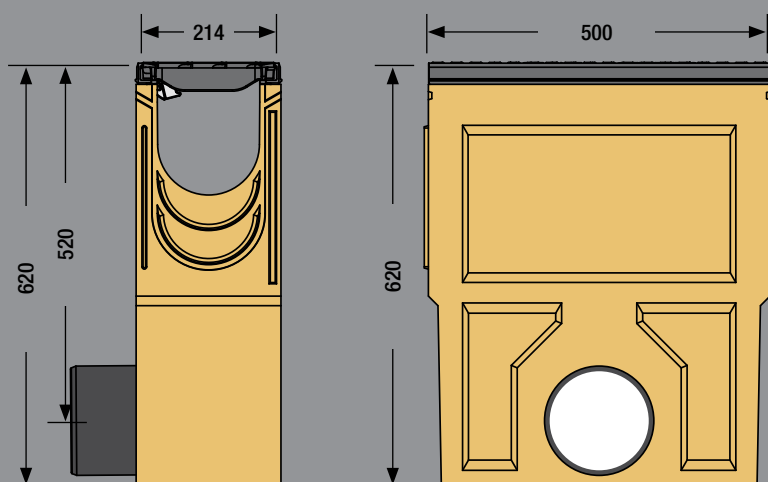


### Load classes

Oval Grip SF-150 slotted cast iron grating

D 400\*/E 600\*

F 900\*



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**ANRIN SF-200 heavy duty channel  
with GJS cast edge rail**

①



②



③



④



⑤



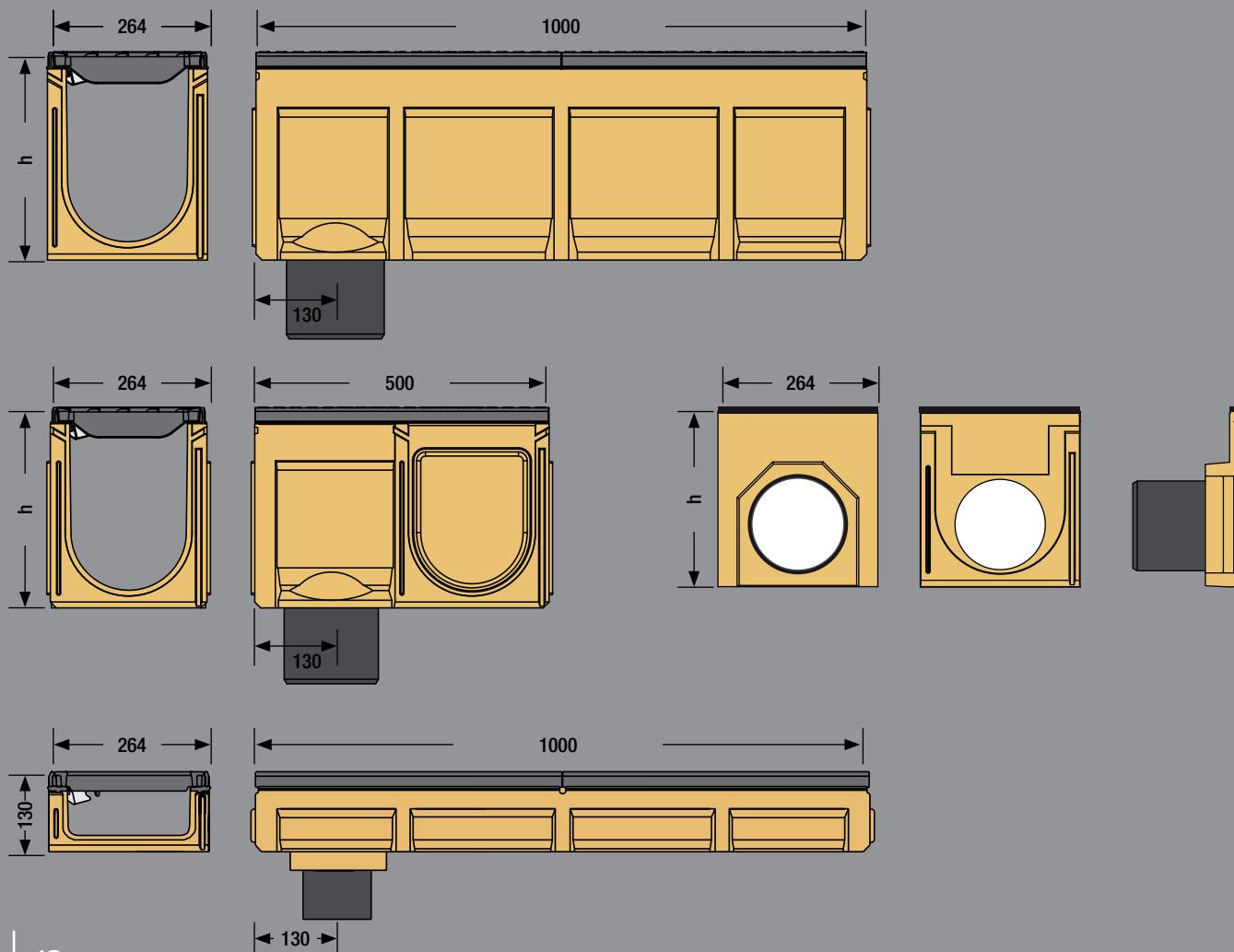
① **SF-200**  
100 cm

② **SF-200**  
50 cm

③ **End cap**  
with DA/OD 160  
poured pipe socket

④ **End cap**

⑤ **Sump unit**  
with DA/OD 160  
poured pipe socket



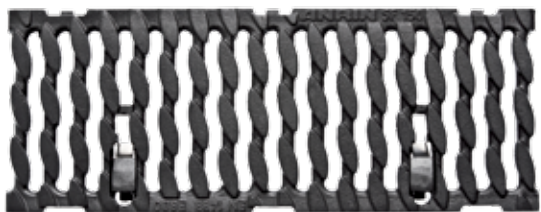


<b>Product specifications</b>	<b>SF-200</b>	<b>Sump unit</b>
Material	Resin concrete	Resin concrete
Length	50 cm and 100 cm	50 cm
Width	26.4 cm	26.4 cm
Height	13.0–29.0 cm	70.0 cm
Edge type	GJS cast edge rail	GJS cast edge rail
Nominal width	<b>200 mm</b>	<b>200 mm</b>
Cover gratings	D 400*/E 600* and F 900*	D 400*/E 600* and F 900*
Slope type	Slope invert 0.5 %	
	Stepped invert	
	Constant invert	
Joint type	<b>UNILINK® joint</b>	<b>UNILINK® joint</b>
Fastening	RapidLock fastening	RapidLock fastening

\* no cross-road drainage of busy roads

### Cover grating

Oval Grip slotted cast iron grating

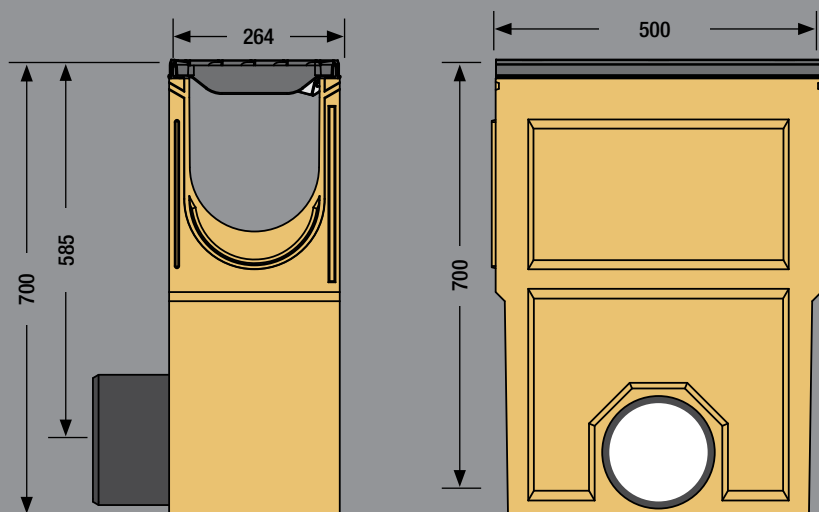


### Load classes

Oval Grip SF-200 slotted cast iron grating

D 400\*/E 600\*

F 900\*



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**ANRIN SF-300 heavy duty channel  
with GJS cast edge rail**

①

②

① **SF-300**  
100 cm

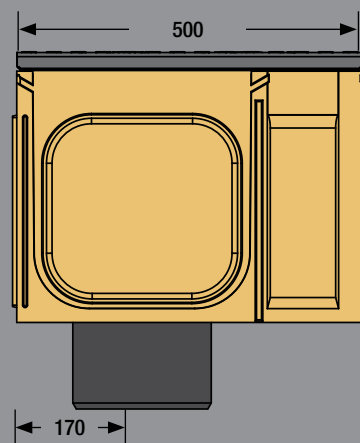
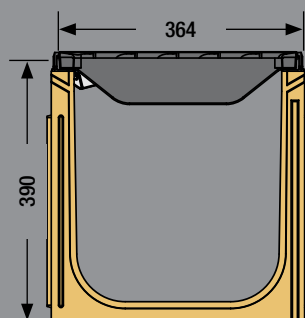
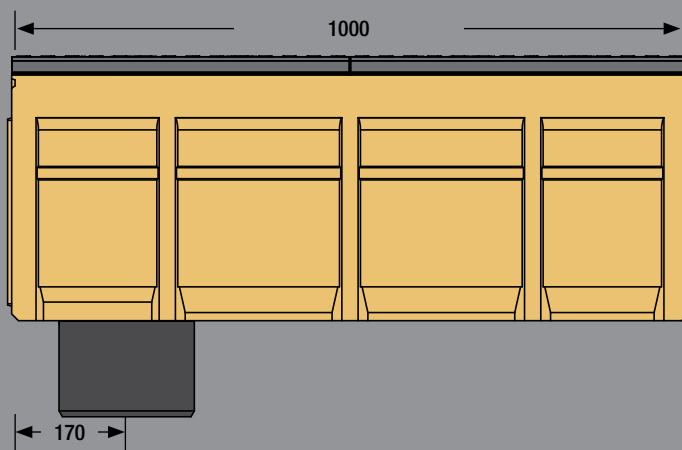
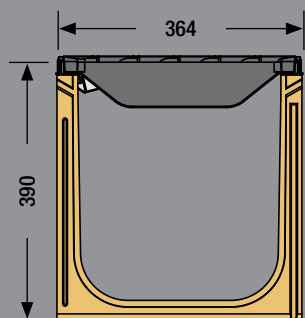
② **SF-300**  
50 cm

③ **End cap**  
with DA/OD 200  
poured pipe socket

④ **End cap**

③

④





<b>Product specifications</b>	<b>SF-300</b>
Material	Resin concrete
Length	50 cm and 100 cm
Width	36.4 cm
Height	39.0 cm
Edge type	GJS cast edge
Nominal width	<b>300 mm</b>
Cover gratings	D 400* / E 600* and F 900*
Slope type	Constant invert
Joint type	<b>UNILINK® joint</b>
Fastening	RapidLock fastening

\* no cross-road drainage of busy roads

### Cover grating

Oval Grip slotted cast iron grating

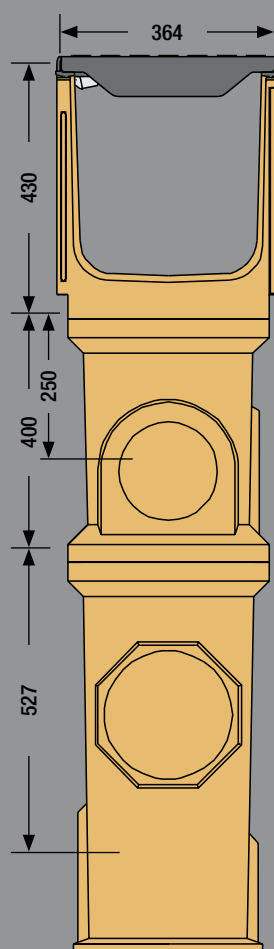
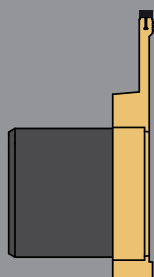
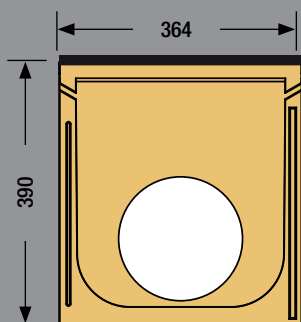
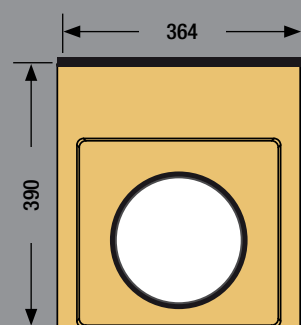


### Load classes

Oval Grip SF-300 slotted cast iron grating

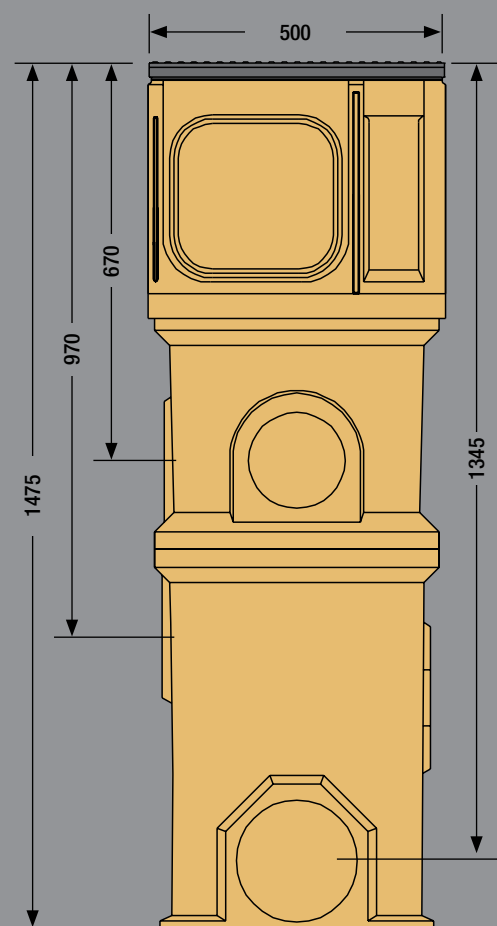
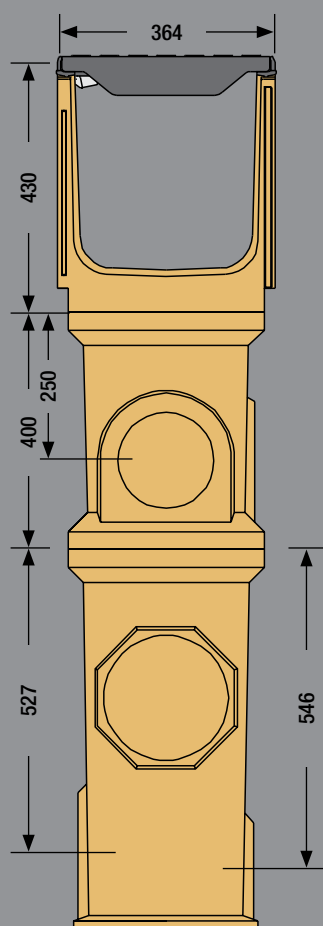
D 400\* / E 600\*

F 900\*



**ANRIN System overview  
of sump units and  
sump assemblies  
for SF channels**

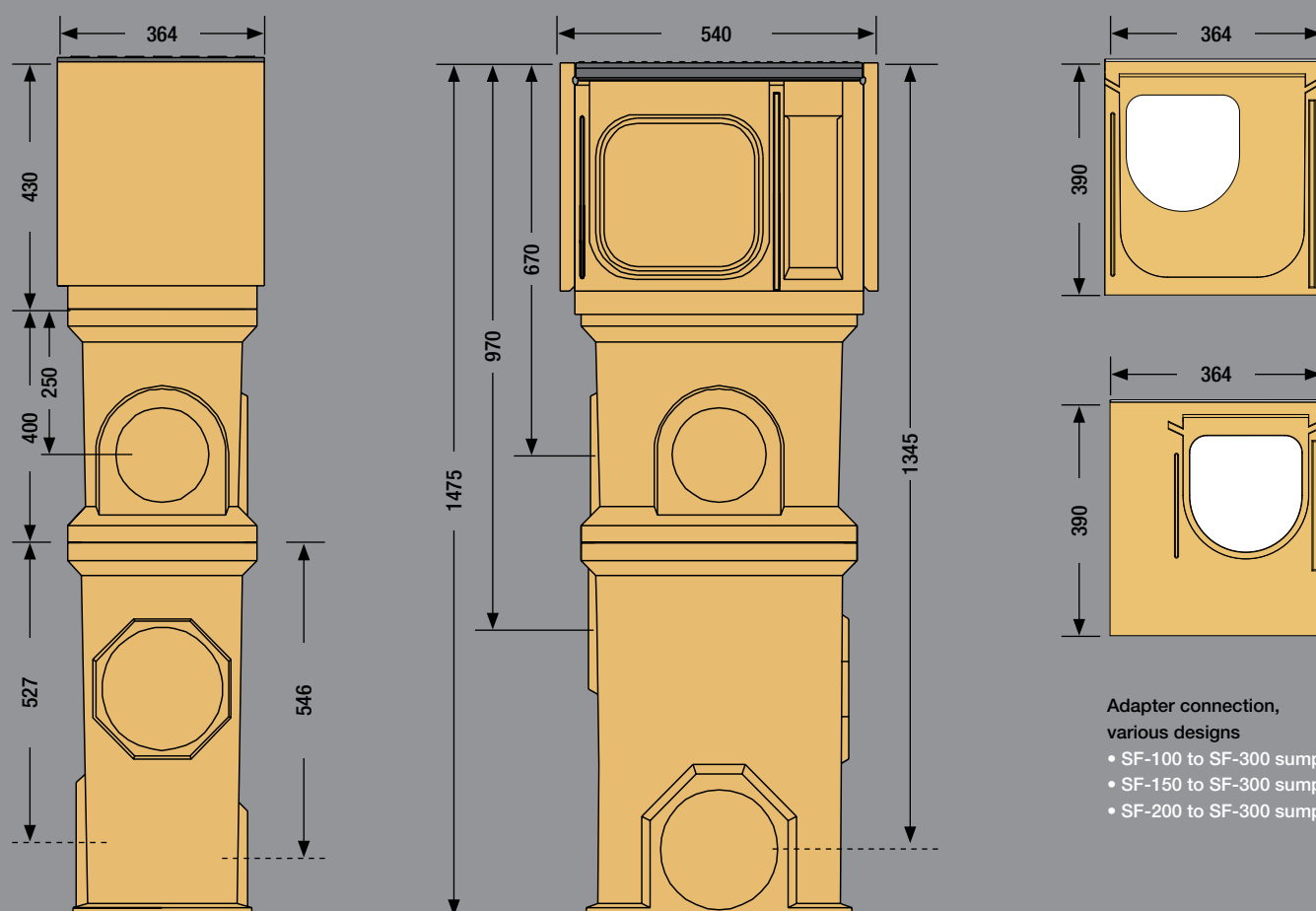
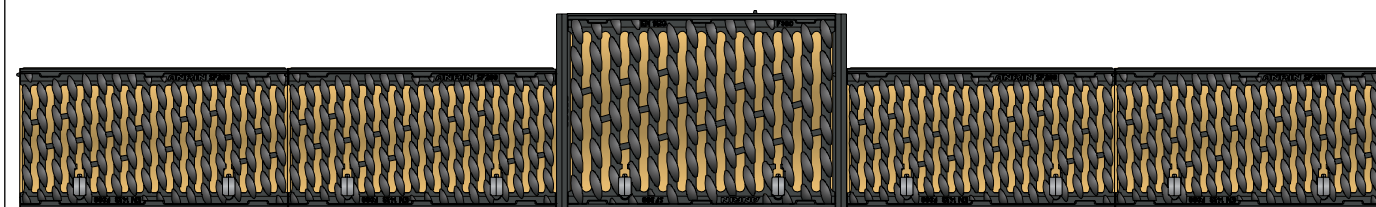
- ① **System sump assembly**  
with open top section
- ② **System sump assembly**  
with closed top section



Product specifications	SF-300 sump unit
Material	Resin concrete
Length	54.0 cm
Width	36.0 cm
Height	107.5 cm, 147.5 cm
Edge type	GJS cast edge
Nominal width	300 mm
Cover gratings	D 400*/E 600* and F 900*
Joint type	UNILINK® joint
Fastening	RapidLock fastening

\* no cross-road drainage of busy roads

**ATTENTION:** The “sump assembly” system element is not intended for use in facilities for the storage, filling and handling of water polluting substances!





ANRIN cover gratings

The edge rails and cover gratings of ANRIN heavy duty channel systems are made of ductile cast iron. To accommodate the traffic loads, gratings and edge rails are intermeshed with one another and fastened with RapidLock. The self-locking RapidLock fastening

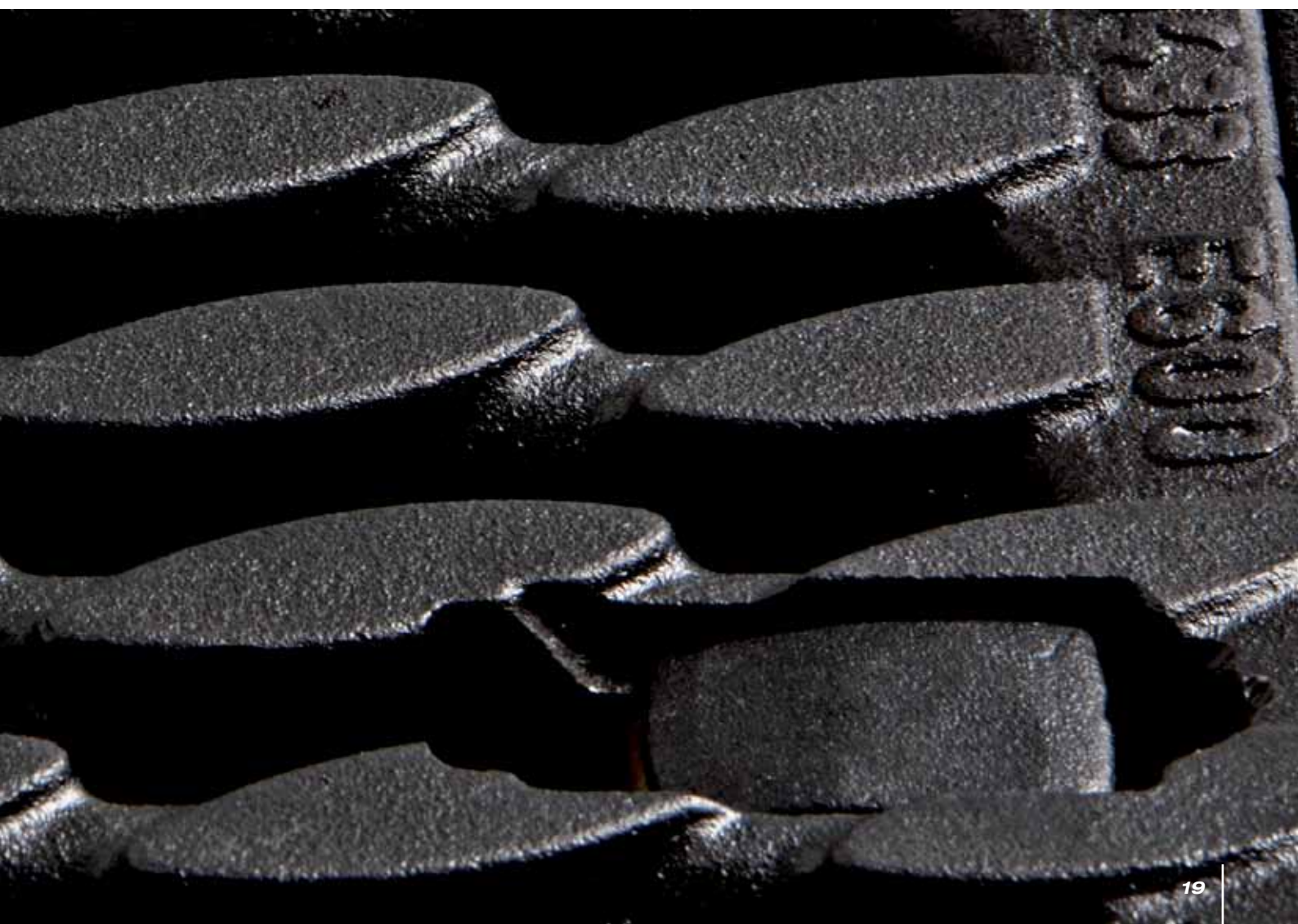
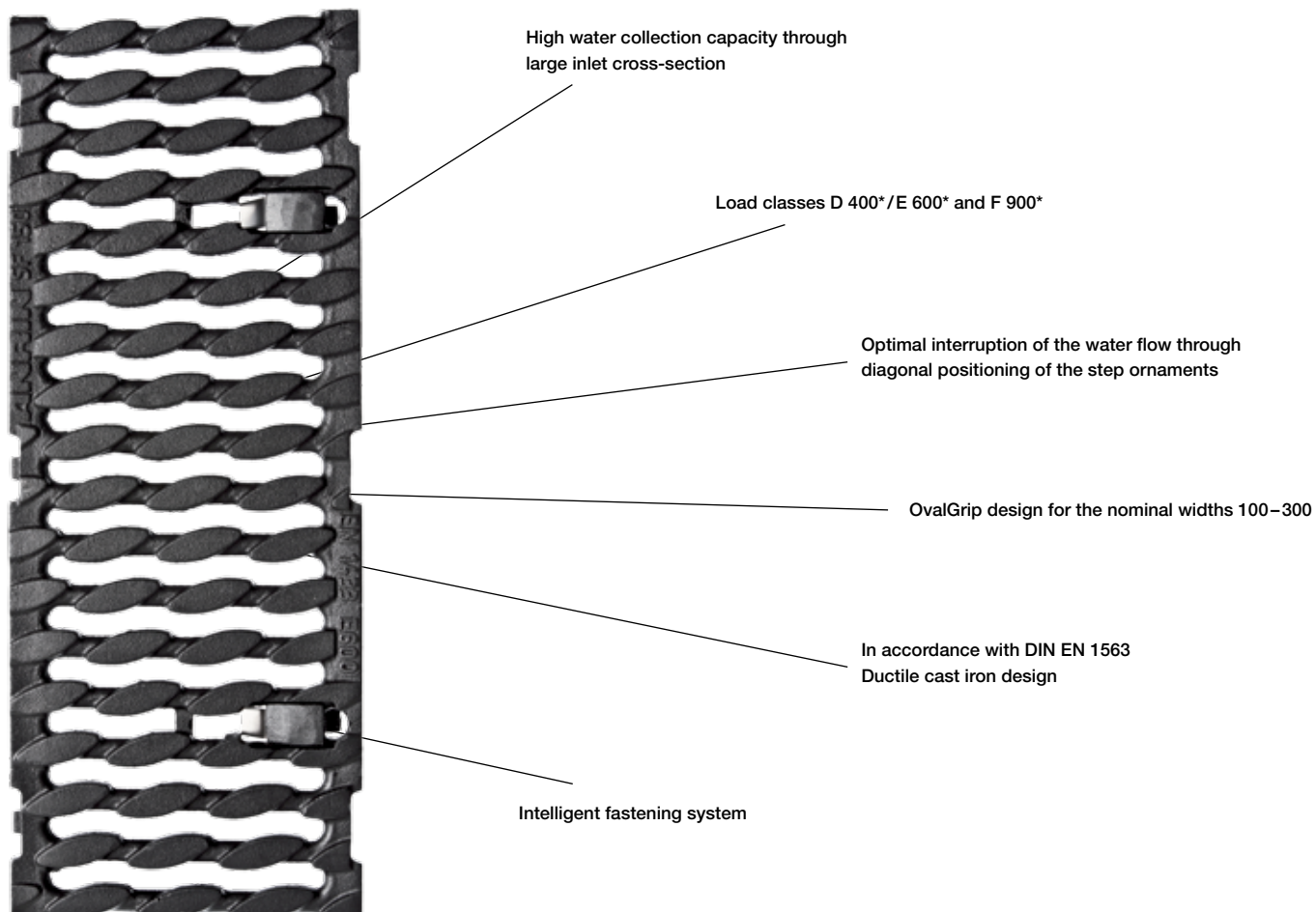
even retains its functionality when heavily soiled. It is locked in place and lifted out without special tools. The exclusive OvalGrip design lends it an attractive surface with maximal drainage of accumulated precipitation.

Product specification	
Type	Oval Grip slotted cast iron grating
Material	EN-GJS cast iron
Length	50 cm
Inlet cross-section	490 cm²/m, 680 cm²/m, 916 cm²/m, 1196 cm²/m
Fastening	RapidLock fastening, self-locking

Load classes	SF-100	SF-150	SF-200	SF-300
D 400* / E 600*		●	●	●
F 900*	●	●	●	●

\* no cross-road drainage of busy roads







### ***RapidLock fastening***

This patented fastening developed in-house by ANRIN combines all the important functions of a grating lock for the accommodation of heavy loads in a stable and functional component.

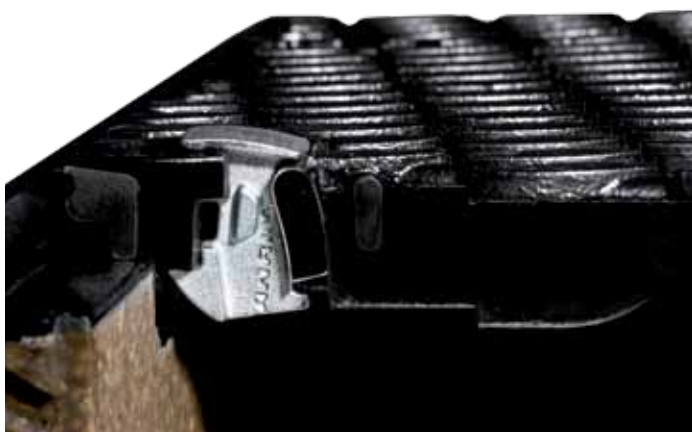
In addition, it is installed unobtrusively and harmonically into the attractive surface of the cast iron grating.





### Advantages

- + Easy to install and lock in place
- + Self-locking Rapidlock lacks the grating safely in place for traffic
- + Better accommodation of traffic loads with intermeshing of grating and channel body
- + Reliable function even when heavily soiled
- + It is locked in place and lifted out without special tools



RapidLock open

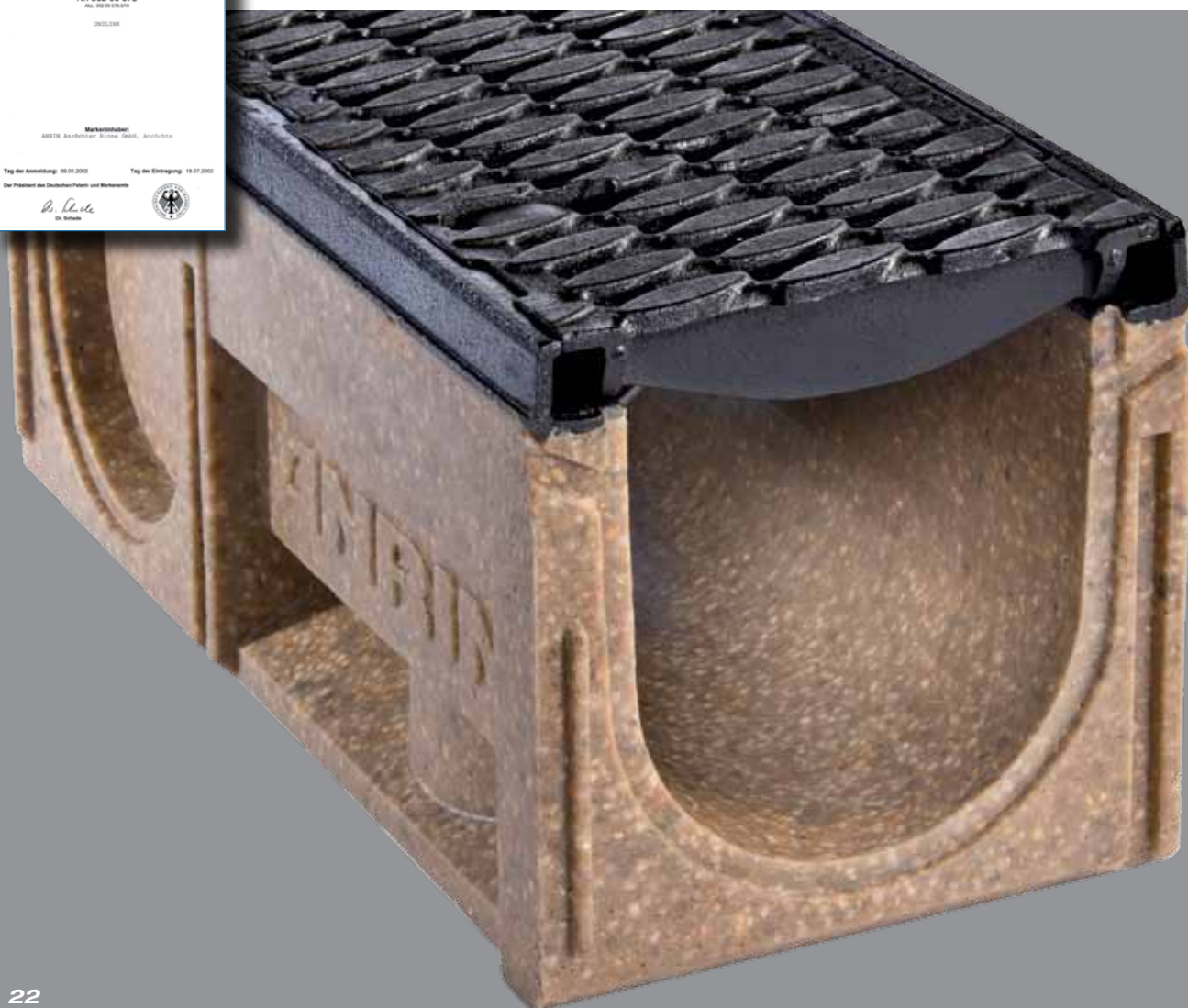
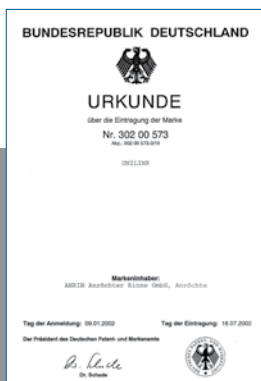
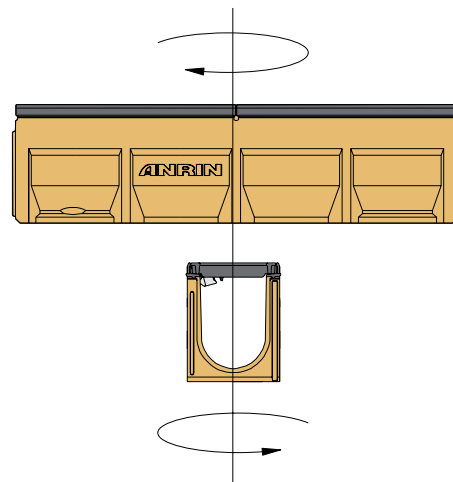


RapidLock locks in place safely for traffic areas



**ANRIN UNILINK® joint**

The optimised UNILINK® joint system eliminates the traditional differentiation between the beginning and end of the channel. Elements of an equal installation height can be joined in any arbitrary direction. The symmetrically divided half-joints enable the optional sealing of the splicing. Vertically aligned grooves and tongues support an efficient installation: In the process, the installation alignment can be chosen arbitrarily! The flexibility in the design and installation phases enters a new dimension with the UNILINK® joint!




## ANRIN sealing technology

The tightness of the channel joints plays an essential role for the functionality. With the ANRIN joint seal set, comprised of a sealer (poly sulphide based two-component sealant), a primer, a mixer column, incl. spiral and a hand pump sprayer, water-tight channel joints for special installation situations, such as petrol stations and facilities for the storage, filling and handling of water polluting substances can be made easily, quickly and safely.



### Liquid-tight<sup>1</sup>

### Areas of application

		SF-100	SF-150	SF-200	SF-300
	Liquid-tight seal for the environmentally compatible handling of liquids harmful to water.	●	●	●	●

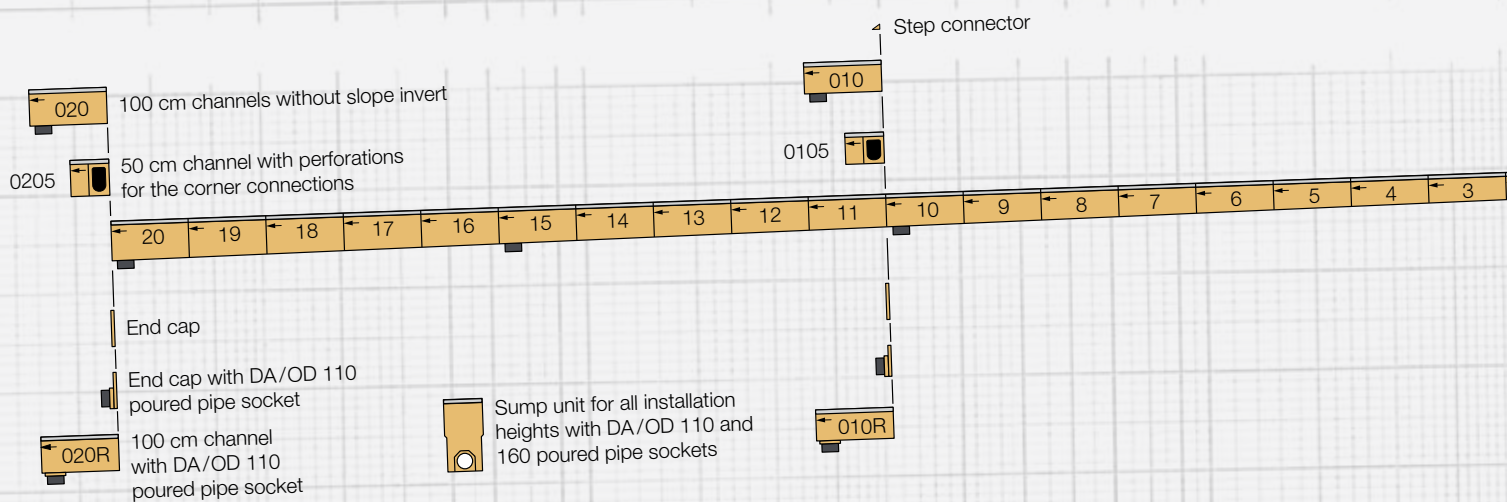
<sup>1</sup> The DIBT has issued the general type approval for use in the area of petrol stations and facilities for the storage, filling and handling of water polluting substances under the approval number Z-74.4-30.

This was supplemented in 2012 with the addition of a firmly bonded link between resin concrete and pipe material. All elements with a pipe connection have a poured pipe socket in the appropriate diameter in the systems SF-100 to SF-300.



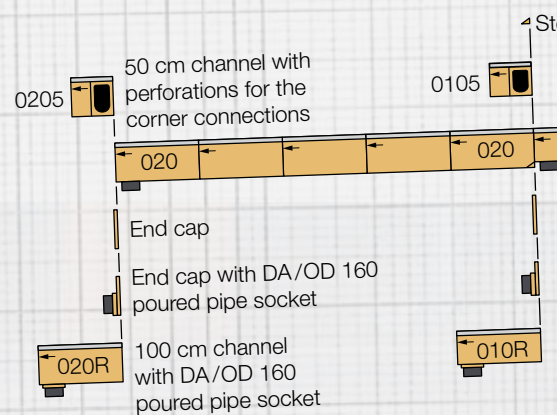


## Slope types

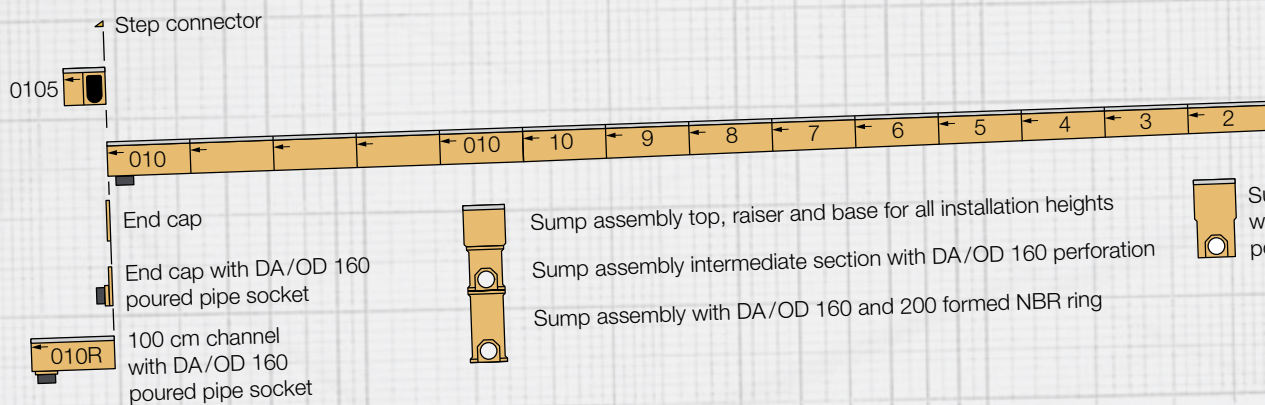


**Slope invert**  
**SF-100 and SF-150**

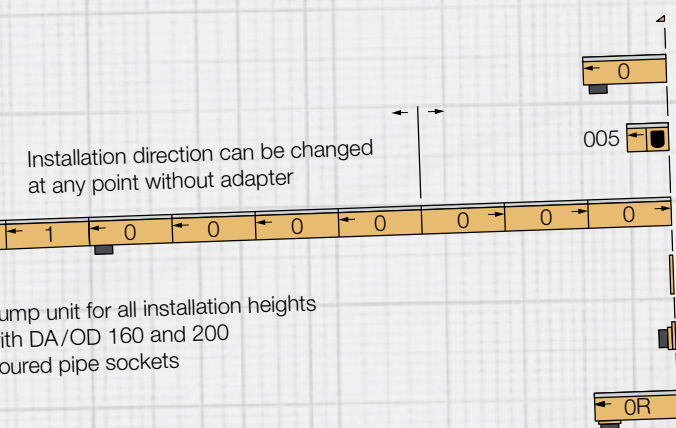
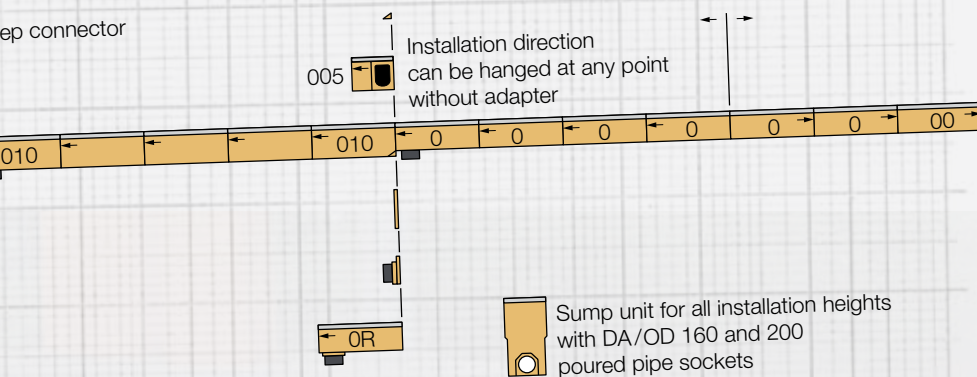
**Stepped invert**  
**SF-100 and SF-150**



**Constant invert**  
**combined with slop invert**  
**SF-200**



Product specifications		SF-100,	SF-150,	SF-200,	SF-300
Material	Resin concrete	●	●	●	●
Edge type	GJS cast edge	●	●	●	●
Nominal width	100 mm	●			
	150 mm		●		
	200 mm			●	
	300 mm				●
Slope type	Slope invert 0.5 %	●	●	●	
	Stepped invert	●	●	●	
	Constant invert	●	●	●	●
Joint type	UNILINK® joint	●	●	●	●
Fastening	RapidLock fastening	●	●	●	●
Grating design	OvalGrip	●	●	●	●





## ANRIN installation information

With ANRIN drainage systems, accumulating rainwater should be drained

safely and quickly. Moreover, the structural elements have the task of accommodating dynamic loads arising from traffic-related demands and dispersing them to the area of the foundation. The following installation guidelines are

schematic representations. These are provided as examples and are non-binding. The information provided here is based on our long-term experience in excavation and road construction as well as the state-of-the-art technology.

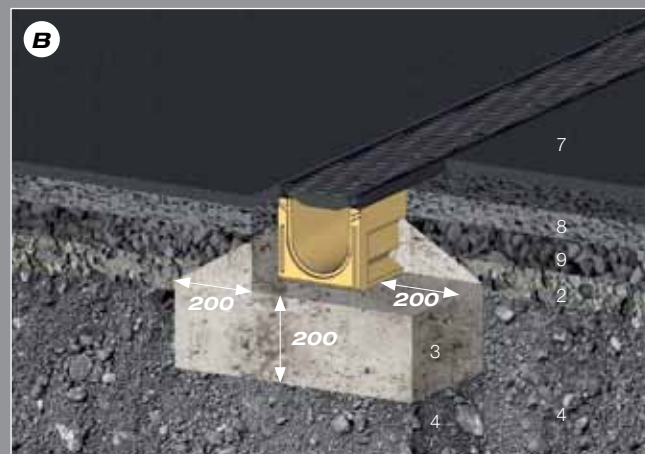
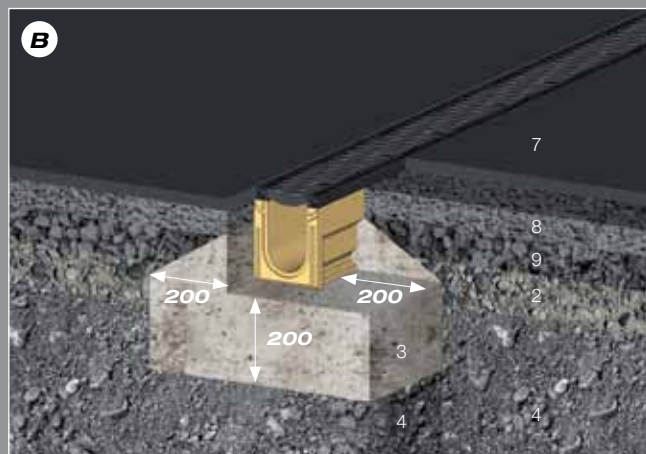
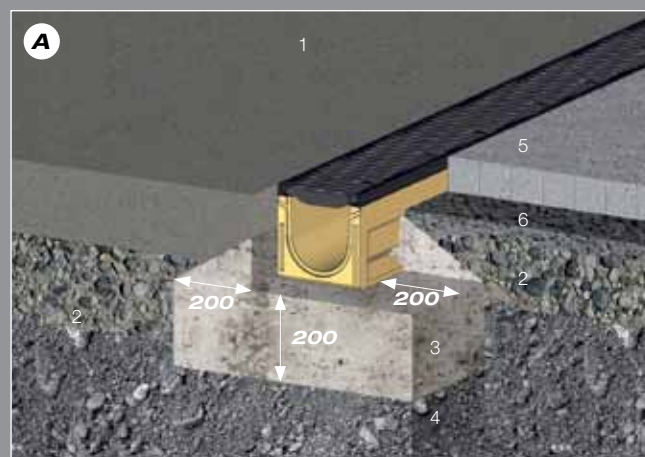
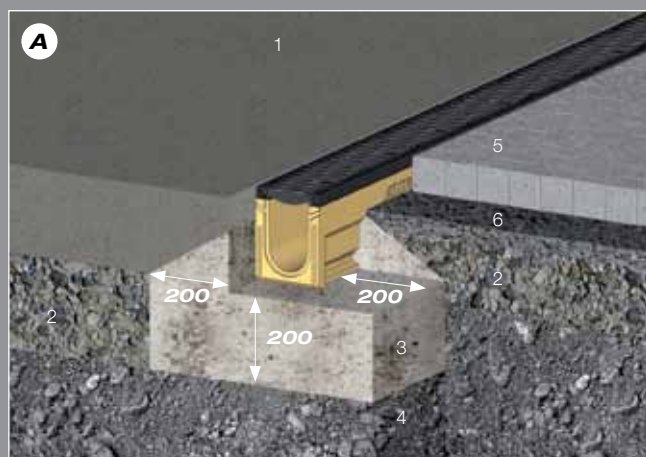
- 1 In-situ road concrete
- 2 Base course with hydraulic binder
- 3 Concrete cladding of the channel body
- 4 Gravel base (frost-protection layer)
- 5 Prefabricated concrete sheets and/or stone systems
- 6 Paving bed
- 7 Wearing course
- 8 Bonding course
- 9 Bitumen base course

### SF-100

### SF-150

- (A)** Road concrete and/or concrete sheets or paving bed
- (B)** Cast asphalt

- (A)** Road concrete and/or concrete sheets or paving bed
- (B)** Cast asphalt





Despite this, designers and planners are always obligated to check the products and the installation instructions for their appropriateness. The example details are simplified recommendations for execution. Constructions are

to be re-created on a project-specific basis. Special local conditions must be reviewed by the planner and the appropriate installation types must be taken into account. The example details are simplified recommendations for execu-

tion. Constructions are to re-created on a project-specific basis. Important: Insert gratings for the installation.

**The current guidelines and regulations of the state-of-the-art technology must be observed for the installation. For example, these are:**

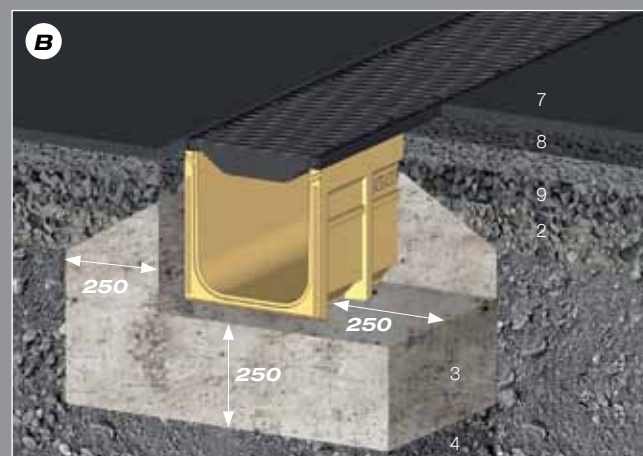
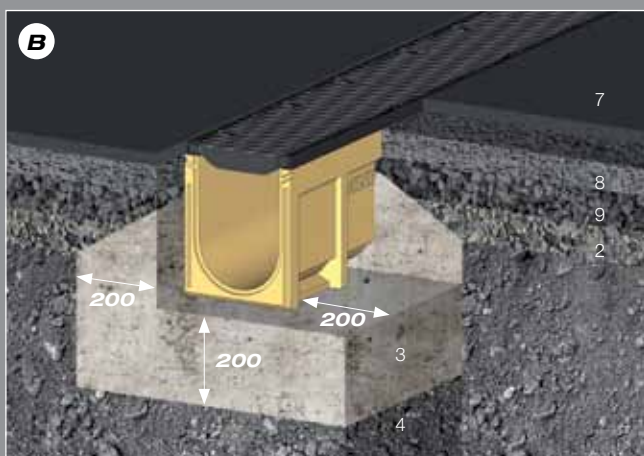
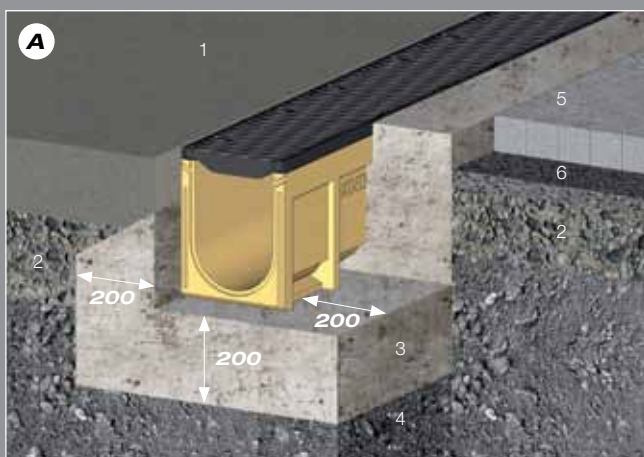
<b>DIN EN 1433</b>	"Drainage channels for vehicular and pedestrian areas"
<b>DIN EN 19580</b>	"Drainage channels for vehicular and pedestrian areas"
<b>RStO</b>	"Guidelines for the standardisation of the superstructure of vehicular areas"
<b>DIN EN 206-1</b>	"Concrete. Specification, performance, production and conformity", to be observed, in particular: ZTV concrete StB 07 for the construction of base courses with hydraulic binders and concrete road wearing courses.
<b>(VOB) Part C</b>	DIN 18318 "Construction work on roadways"
<b>DIN EN 1045-2</b>	"Concrete, reinforced and prestressed concrete structures. Part 2: Concrete – Specification, properties, production and conformity; application rules for DIN EN 206-1"

### SF-200

### SF-300

- (A)** Road concrete and/or concrete sheets or paving bed
- (B)** Cast asphalt

- (A)** Road concrete and/or concrete sheets or paving bed
- (B)** Cast asphalt





We invite you  
to discover more.

*Whether you are already planning a specific project or simply want to learn more about the general possibilities: Contact us and put our expertise to the test.*

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