



GRASPOINTNER
Sustainable innovation.



Strength
when it's
needed most.

Safety channels
Slot channels

Drainage systems

Special systems for special applications.

Special challenges demand extraordinary strength. Our concrete safety and slot channels are therefore ideal for any location that is subject to heavy traffic and heavy loads such as:

- Airports
- Logistic centres
- Motorways
- Container terminals
- Ports, etc.



Extremely tough – but soft on the environment.

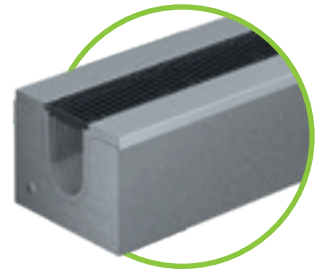
Like the brown bear, which is strong and robust but also a harmonious part of nature, our safety and slot channels combine a high level of performance with low environmental impact:

- Extremely efficient drainage performance
- Exceptionally robust and durable
- Mineral, cement-bound material
- 100% recyclable
- Environmental BG energy mix

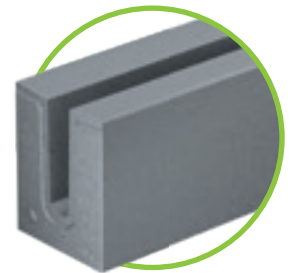


For serious work.

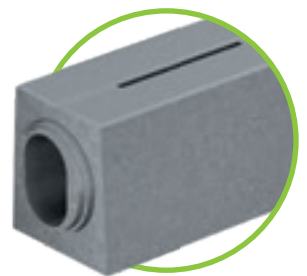
Regardless of what drives over them – a forklift truck or a cargo- or passenger plane – our channels are highly resilient and remain immovable in the truest sense of the word. High-quality construction materials and ingenious designs ensure that nothing wobbles or rattles, even when subjected to heavy-duty loads.



BG-SI safety channels
Type I
page 4-9

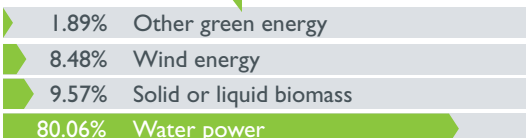


BG-SL slot channels
Profile U
page 10-11



BG slot channels
CS-Beton system
Monolithic channel body
page 12-27

BG energy mix:



Extremely **stable** and **safe.**

Vehicles and aircrafts are becoming heavier and traffic intensity is increasing all the time, presenting a growing challenge for the transport infrastructure – this is especially true at airports, motorways and container terminals. This trend is likely to continue, with no end in sight.

The BG-SI safety channel has been specially developed to meet these challenges.

Exceptionally robust.

The channel has a solid concrete body with appropriate reinforcement and 4-times bolted ductile iron gratings.

This makes it perfect for any locations with heavy vehicle movements where high mechanical stresses such as rotary, braking and shear forces can be expected.

Class F 900

All-around galvanised steel edge

- Fully integrated and 4 mm massive
- Channel body casing
- Sealed all-around edge protection

Sealable channel system

- Moulded safety seam on the front side
- Channel can be sealed at the full cross-section

Pre-formed spacer

- Pre-defined distance between elements
- Precisely engineered joints
- Simple, efficient installation

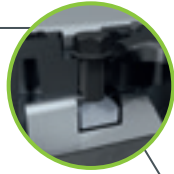
Extremely time-efficient

- Additional concrete casing is eliminated as this is a Type I channel in accordance with EN 1433
- No need to wait before laying the adjacent road surfaces



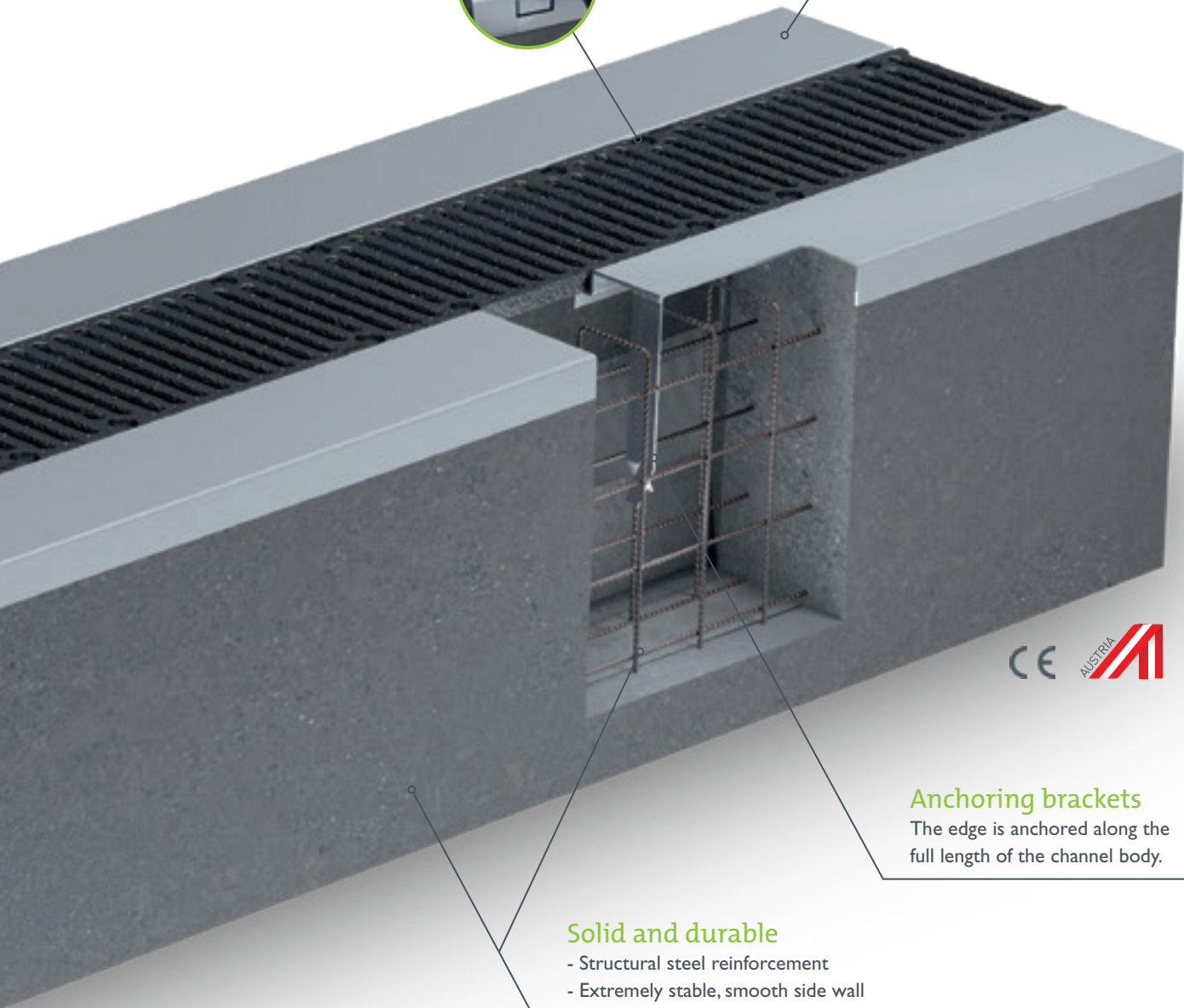
Bolted gratings made of ductile iron

- Safety bolts (4-times) for high stability
- Replaceable bolts for ease of maintenance
- Protection against longitudinal movement



Perfect fit

Flat edge surface for optimised one-level connection of the road surface



Anchoring brackets

The edge is anchored along the full length of the channel body.

Solid and durable

- Structural steel reinforcement
- Extremely stable, smooth side wall
- Expansion joint directly on the channel wall

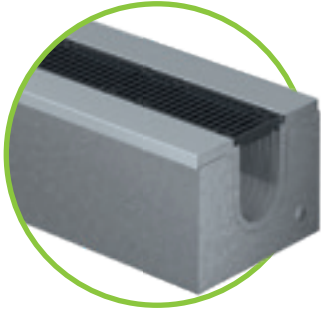
The benefits at a glance:

- Optimised for the most demanding applications
- easy handling, highly practical, reduced construction times
- Solid channel body up to load class F 900 kN (Type I in accordance with EN 1433)
- High-quality concrete with constructional reinforcement
- Solid steel edge affords all-around protection
- Bolted ductile-iron gratings with protection against longitudinal movement



BG-SI safety channels

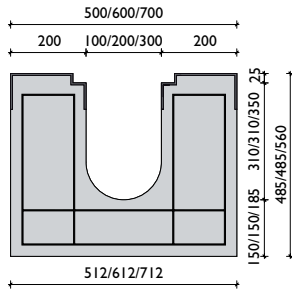
Nominal width 100, 200, 300



BG-SI safety channel, nominal width 100, 200, 300 - class F 900 kN

Channel body with special steel edge up to load class F, with bolted ductile iron gratings

Item no.	Channel body	Length	Width	Height	Weight
20100	BG-SI safety channel NW 100	2500	512	485	530 kg
20102	BG-SI safety channel NW 100	1000	512	485	530 kg
20300	BG-SI safety channel NW 200	2500	612	485	560 kg
20302	BG-SI safety channel NW 200	1000	612	485	560 kg
20400	BG-SI safety channel NW 300	2500	712	560	710 kg
20402	BG-SI safety channel NW 300	1000	712	560	710 kg



with galvanised special edge

Gratings for BG-SI safety channel

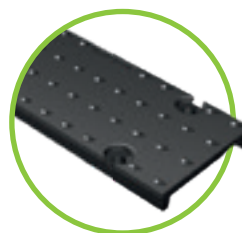
Item no.	Gratings incl. bolting material - M12	Load class	Pc./pallet	Weight
22057	BG-SI ductile iron grating NW 100, 500/147/25, SW 16/120	F 900 kN	120	5.4 kg
22058	BG-SI ductile iron grating NW 100, 500/147/25, closed cover	F 900 kN	120	7.7 kg
22076	BG-SI ductile iron grating NW 200, 500/247/25, SW 16/220	F 900 kN	60	11.1 kg
22077	BG-SI ductile iron grating NW 200, 500/247/25, closed cover	F 900 kN	60	16.8 kg
22096	BG-SI ductile iron grating NW 300, 500/347/25, SW 16/148	F 900 kN	30	30.9 kg

Accessories

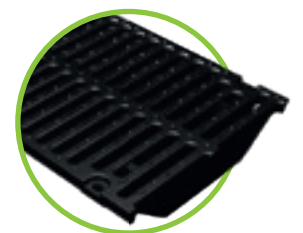
Item no.	Accessories	Length	Width	Height	Weight
20720	Sump unit for BG-SI safety channel NW 100	1000	500	1000	1,200 kg
20722	Sump unit for BG-SI safety channel NW 200	1000	600	1000	1,300 kg
20723	Sump unit for BG-SI safety channel NW 300	1000	700	1000	1,350 kg
20700	Front- or end cap for BG-SI safety channel NW 100		230	400	1.4 kg
20704	Front- or end cap for BG-SI safety channel NW 200		330	400	2.1 kg
20708	Front- or end cap for BG-SI safety channel NW 300		680	555	5.0 kg
20020	Corner for two channels with mitre (channel incl. grating)				



Ductile iron grating
SW 16/120, 16/220 - class F,
for NW 100 and 200



Ductile iron grating class F
closed cover
for NW 100 and 200



Ductile iron grating
SW 16/148 - class F
for NW 300

Special parts: **Won't fit - doesn't exist.**

The world isn't always smooth and straight – and motorways, runways and terminals are no exception. This is no problem for our safety and slot channels, as we offer a range of special parts, making installation simple even in particularly challenging situations.

T or cross pieces

Practical pre-fabricated components that can be installed with a minimum of time and effort. Complicated local junctions and intersections between two channel lines are eliminated.



Adapters

These accurate adapters are available in different lengths. They are individually manufactured to fit each channel line precisely.



Mitre piece

For installation in polygon shapes, we offer individually customised mitre pieces. Accurately cut channel bodies and gratings create clean, uniform joints on installation.



Accessories: for added strength.

Discover the accessories for our safety and slot channels. They are optimally matched to our channels and feature the same high quality.



Sump units

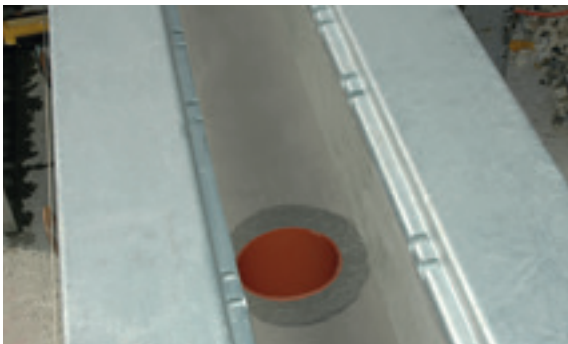
We offer a high-performance sump unit for every nominal width. The sided outlet is available with two different pipe fairleads: DN 150 (for NW 100) and DN 200 (for NW 200 and 300).

The sump unit is highly variable and can be installed at any position in the channel line.



Front caps

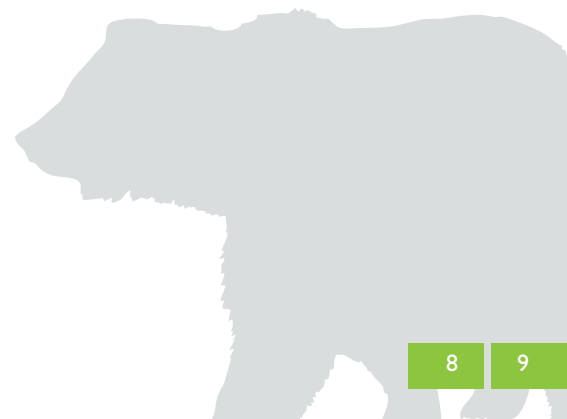
Our perfectly fitting front and end caps ensure tight closure of the channel line.



Bottom outlet

On request, we can also supply BG-SI safety channels with a 300/500 bottom outlet. This can be manufactured with base drainage to fit the nominal width including a pipe fairlead.

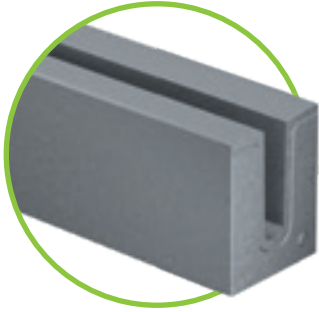
References





BG-SL slot channels

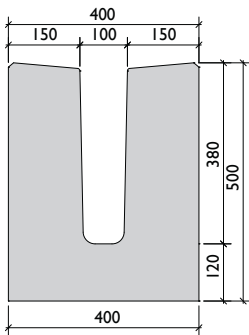
Profile U



BG-SL slot channel, profile U - class F 900 kN

Drainage channel without cover

Item no.	Channel body	Length	Width	Height	Weight
I9000	BG-SL slot channel profile U, NW 100, L=2500 mm	2500	400	500	425 kg
I9001	Additional charge for bottom outlet 600 x 80 mm				



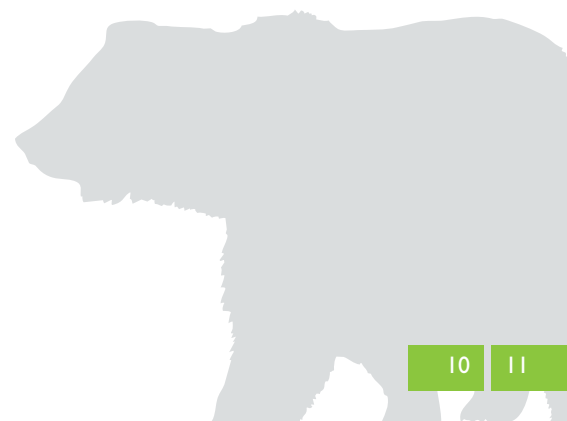
Accessories

Item no.	Accessories	Weight
I9003	Front cap for BG-SL slot channel profile U, NW 100, galvanised	1.0 kg

The benefits at a glance:

- Separates the taxiway and runway from the green area
- Slot channel without cover - easy to clean
- Sloped top edges - for easier water collection
- Adapters allow installation in all radii

References



Highly **variable**, unique **expertise**.

A partnership that brings outstanding benefits. We manufacture our highly stable BG slot channels in cooperation with **CS-BETON** from the Czech Republic.

Strong in every situation.

Our highly versatile slot channels are an important feature in traffic engineering. They provide efficient drainage for the surfaces of:

- Highways
- Container terminals
- Industrial and port facilities
- Motorways and tunnels
- Logistics centres
- Aircraft movement areas

Silent and effective.

Despite their wide range of applications, BG slot channels perform extremely well in any situation. They are highly robust and they do not need a cover – as a result, they are maintenance-free and very quiet.

Class F 900



Compact connection of channel joints

A compact connection is achieved using the gaskets supplied, which must be installed on site. Tongue and groove system for each channel element.

Ideal flow characteristics

For surfaces without sufficient slope, BG slot channels can be supplied with a pre-installed inner slope of 0.5%.

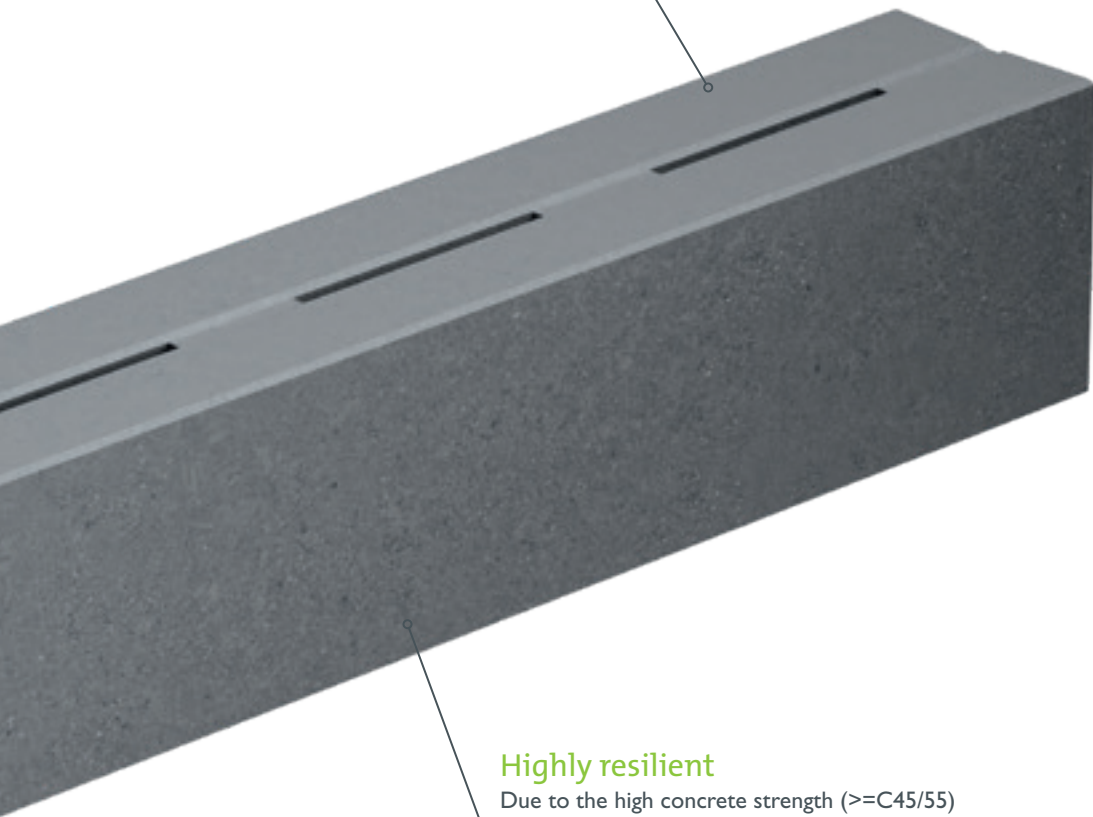


Unique slot geometry

- Suitable for all applications
- Interrupted, continuous or covered slot
- Also available with a border for installation at rising surfaces

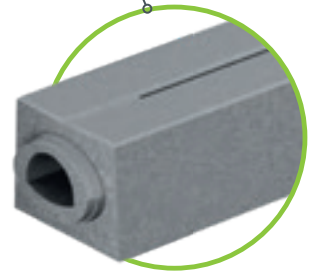
Optimum drainage performance

Optimum water collection thanks to 3% surface slope towards the slot.

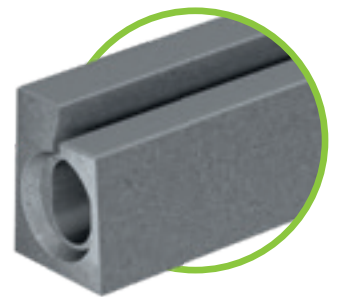


Highly resilient

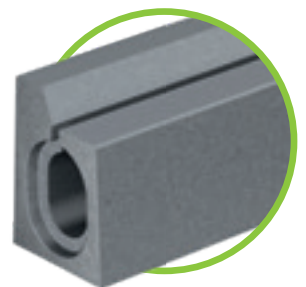
Due to the high concrete strength ($\geq C45/55$) incl. steel reinforcement bar.



BG slot channel with interrupted slot and small conduit



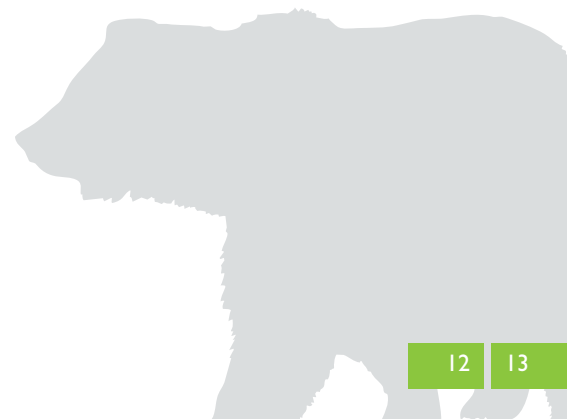
BG slot channel with covered slot and border



BG slot channel with continuous slot and border

The benefits at a glance:

- Different channel profiles for a wide range of applications
- Highly resilient up to class D 400, E 600 or F 900 kN
- Very variable: option of 0.5% inner slope, with or without border, expansion joint directly on the channel body
- Element length 4000 mm — special lengths on request
- Manufacturer with decades of experience
- Produced and certified to EN 1433



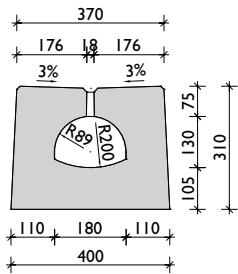


BG slot channels

Profile T-1



Profile T-1



BG slot channel, profile T-1, DN 18x13 - class D 400 kN

Interrupted slot, inner width 18 x 13 cm, without slope

Item no.	Channel body	Length	Width	Height	Weight
50091000	BG slot channel, profile T-1, type T13/I3, without slope	4000	370/400	310	995 kg

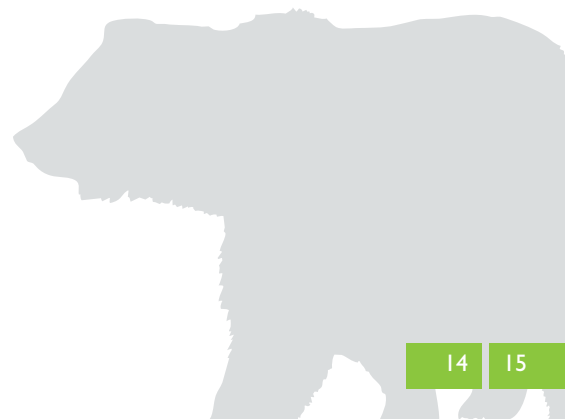
Accessories

Item no.	Accessories	Length	Width	Height	Weight
50091020	Cleaning element type CO (tongue-groove) incl. ductile iron grating	1000	370/400	310	232 kg
50091060	Cleaning element type CS (tongue-tongue) incl. ductile iron grating	1000	370/400	310	240 kg
50091021	Sump unit type VO (tongue-groove) with outlet incl. ductile iron grating	1000	370/400	310	233 kg
50091061	Sump unit type VU (groove-groove) with outlet incl. ductile iron grating	1000	370/400	310	225 kg
50000010	Shaft base for sump unit, outlet with pipe coupling DN 150	550	550	330	83 kg
50091022	Fire protection component type PP (tongue-groove)	1000	370/410	600	511 kg
50091062	Front cap type ZU (tongue)	120	370/400	310	39 kg
50091063	End cap type ZZ (groove)	120	370/400	310	27 kg
50000020	Lifting grab for profile T-1, consisting of 2 items				2.5 kg



Adapters on request

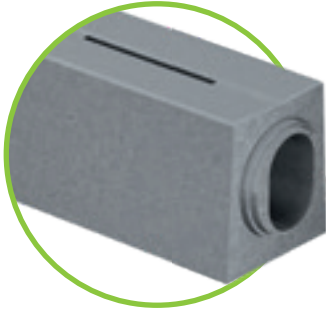
References



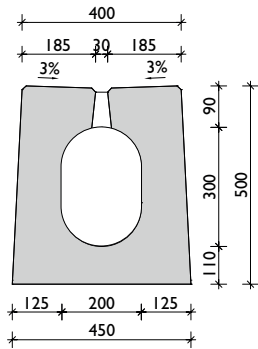


BG slot channels

Profile I-1



Profile I-1



BG slot channel, profile I-1, DN 20x30 - class E 600 kN

Interrupted slot, inner width 20 x 30 cm, with or without slope

Item no.	Channel body	Length	Width	Height	Weight
500I1000	BG slot channel, profile I-1, type T30/30, without slope	4000	400/450	500	1,510 kg
500I1010	BG slot channel, profile I-1, type T28/28, without slope	4000	400/450	500	1,548 kg
500I1011	BG slot channel, profile I-1, type T26/26, without slope	4000	400/450	500	1,587 kg
500I1012	BG slot channel, profile I-1, type T24/24, without slope	4000	400/450	500	1,625 kg
500I1013	BG slot channel, profile I-1, type T22/22, without slope	4000	400/450	500	1,664 kg
500I1014	BG slot channel, profile I-1, type T20/20, without slope	4000	400/450	500	1,702 kg
500I1001	BG slot channel, profile I-1, type G28/30, with 0.5% slope	4000	400/450	500	1,529 kg
500I1002	BG slot channel, profile I-1, type G26/28, with 0.5% slope	4000	400/450	500	1,568 kg
500I1003	BG slot channel, profile I-1, type G24/26, with 0.5% slope	4000	400/450	500	1,606 kg
500I1004	BG slot channel, profile I-1, type G22/24, with 0.5% slope	4000	400/450	500	1,644 kg
500I1005	BG slot channel, profile I-1, type G20/22, with 0.5% slope	4000	400/450	500	1,683 kg

Accessories

Item no.	Accessories	Length	Width	Height	Weight
500I1120	Cleaning element (tongue-groove), type T30/30-CO incl. ductile iron grating	1000	400/450	500	394 kg
500I1160	Cleaning element (tongue-tongue), type T20/20-CS incl. ductile iron grating	1000	400/450	500	442 kg
500I1121	Sump unit (tongue-groove), type T30/30-VO with outlet incl. ductile iron grating	1000	400/450	500	347 kg
500I1161	Sump unit (groove-groove), type T30/30-VU with outlet incl. ductile iron grating	1000	400/450	500	338 kg
50000011	Shaft base for sump unit, outlet with pipe coupling DN 200	550	550	380	101 kg
500I1022	Fire protection component type PP (tongue-groove), class D	2000	400/500	950	1,540 kg
500I1071	Exchange element, 5-parts, different lengths available	2100/-4000	400/450	500	1,510 kg
500I1162	Front cap type ZU (tongue)	120	400/450	500	76 kg
500I1163	End cap type ZZ (groove)	120	400/450	500	51 kg
50000021	Lifting grab for profile I-1, consisting of 2 items				4 kg



Adapters and curved elements on request

BG slot channel, profile I-1, DN 20x30 - class F 900 kN

Interrupted slot, inner width 20 x 30 cm, with or without slope

Item no.	Channel body	Length	Width	Height	Weight
50011100	BG slot channel, profile I-1, type T30/30, without slope	4000	400/450	500	1,510 kg
50011110	BG slot channel, profile I-1, type T28/28, without slope	4000	400/450	500	1,548 kg
50011111	BG slot channel, profile I-1, type T26/26, without slope	4000	400/450	500	1,587 kg
50011112	BG slot channel, profile I-1, type T24/24, without slope	4000	400/450	500	1,625 kg
50011113	BG slot channel, profile I-1, type T22/22, without slope	4000	400/450	500	1,664 kg
50011114	BG slot channel, profile I-1, type T20/20, without slope	4000	400/450	500	1,702 kg
50011101	BG slot channel, profile I-1, type G28/30, with 0.5% slope	4000	400/450	500	1,529 kg
50011102	BG slot channel, profile I-1, type G26/28, with 0.5% slope	4000	400/450	500	1,568 kg
50011103	BG slot channel, profile I-1, type G24/26, with 0.5% slope	4000	400/450	500	1,606 kg
50011104	BG slot channel, profile I-1, type G22/24, with 0.5% slope	4000	400/450	500	1,644 kg
50011105	BG slot channel, profile I-1, type G20/22, with 0.5% slope	4000	400/450	500	1,683 kg

Accessories

Item no.	Accessories	Length	Width	Height	Weight
50011120	Cleaning element (tongue-groove), type T30/30-CO incl. ductile iron grating	1000	400/450	500	394 kg
50011160	Cleaning element (tongue-tongue), type T20/20-CS incl. ductile iron grating	1000	400/450	500	442 kg
50011121	Sump unit (tongue-groove), type T30/30-VO with outlet incl. ductile iron grating	1000	400/450	500	347 kg
50011161	Sump unit (groove-groove), type T30/30-VU with outlet incl. ductile iron grating	1000	400/450	500	338 kg
50000011	Shaft base for sump unit, outlet with pipe coupling DN 200	550	550	380	101 kg
50011022	Fire protection component type PP (tongue-groove), class D	2000	400/500	950	1,540 kg
50011071	Exchange element, 5-parts, different lengths available	2100/- 4000	400/450	500	1,510 kg
50011162	Front cap type ZU (tongue)	120	400/450	500	76 kg
50011163	End cap type ZZ (groove)	120	400/450	500	51 kg
50000021	Lifting grab for profile I-1, consisting of 2 items				4 kg



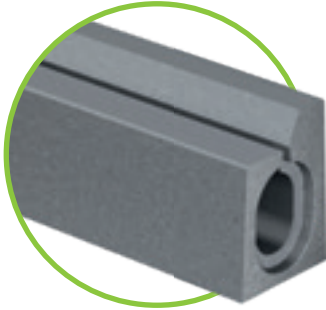
A bicycle-compatible type CY model is available for this profile.

The slot openings are designed so that the slot channels do not present an obstacle or hazard for cyclists when used in road traffic applications.

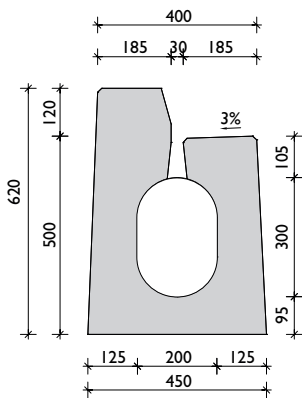


BG slot channels

Profile I-3



Profile I-3
Border, left



BG slot channel, profile I-3, DN 20x30 - class D 400 kN

Continuous slot, **border 12 cm left**, with or without slope

Item no.	Channel body	Length	Width	Height	Weight
50013040	BG slot channel, profile I-3, type T30/30, without slope	4000	400/450	500/620	1,704 kg
50013050	BG slot channel, profile I-3, type T28/28, without slope	4000	400/450	500/620	1,741 kg
50013051	BG slot channel, profile I-3, type T26/26, without slope	4000	400/450	500/620	1,774 kg
50013052	BG slot channel, profile I-3, type T24/24, without slope	4000	400/450	500/620	1,809 kg
50013053	BG slot channel, profile I-3, type T22/22, without slope	4000	400/450	500/620	1,843 kg
50013054	BG slot channel, profile I-3, type T20/20, without slope	4000	400/450	500/620	1,877 kg
50013041	BG slot channel, profile I-3, type G28/30, with 0.5% slope	4000	400/450	500/620	1,723 kg
50013042	BG slot channel, profile I-3, type G26/28, with 0.5% slope	4000	400/450	500/620	1,757 kg
50013043	BG slot channel, profile I-3, type G24/26, with 0.5% slope	4000	400/450	500/620	1,792 kg
50013044	BG slot channel, profile I-3, type G22/24, with 0.5% slope	4000	400/450	500/620	1,826 kg
50013045	BG slot channel, profile I-3, type G20/22, with 0.5% slope	4000	400/450	500/620	1,860 kg

Accessories

Item no.	Accessories	Length	Width	Height	Weight
50013060	Cleaning element (tongue-groove), type T30/30-CO incl. ductile iron grating	1000	400/450	500/620	462 kg
50013027	Cleaning element (tongue-tongue), type T20/20-CS incl. ductile iron grating	1000	400/450	500/620	510 kg
50013063	Sump unit (tongue-groove), type T30/30-VO with outlet incl. ductile iron grating	1000	400/450	500/620	415 kg
50013030	Sump unit (groove-groove), type T30/30-VU with outlet incl. ductile iron grating	1000	400/450	500/620	406 kg
50000011	Shaft base for sump unit, outlet with pipe coupling DN 200	550	550	380	101 kg
50013066	Fire protection component type PP (tongue-groove)	2000	400/500	1,070	1,739 kg
50013074	Front cap type ZU (tongue)	120	400/450	620	76 kg
50013075	End cap type ZZ (groove)	120	400/450	620	51 kg
50000022	Lifting grab for profile I-3, consisting of 2 items				4.4 kg

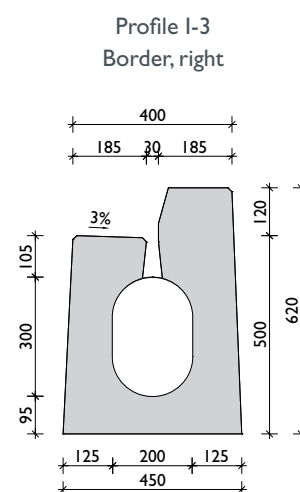


Adapters on request

BG slot channel, profile I-3, DN 20x30 - class D 400 kN

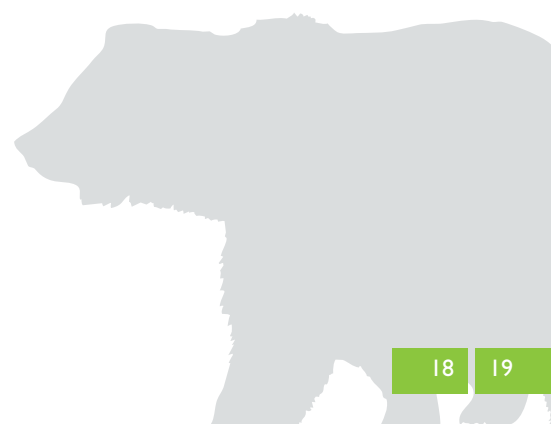
Continuous slot, **border 12 cm right**, with or without slope

Item no.	Channel body	Length	Width	Height	Weight
50013000	BG slot channel, profile I-3, type T30/30, without slope	4000	400/450	500/620	1,704 kg
50013010	BG slot channel, profile I-3, type T28/28, without slope	4000	400/450	500/620	1,741 kg
50013011	BG slot channel, profile I-3, type T26/26, without slope	4000	400/450	500/620	1,774 kg
50013012	BG slot channel, profile I-3, type T24/24, without slope	4000	400/450	500/620	1,809 kg
50013013	BG slot channel, profile I-3, type T22/22, without slope	4000	400/450	500/620	1,843 kg
50013014	BG slot channel, profile I-3, type T20/20, without slope	4000	400/450	500/620	1,877 kg
50013001	BG slot channel, profile I-3, type G28/30, with 0.5% slope	4000	400/450	500/620	1,723 kg
50013002	BG slot channel, profile I-3, type G26/28, with 0.5% slope	4000	400/450	500/620	1,757 kg
50013003	BG slot channel, profile I-3, type G24/26, with 0.5% slope	4000	400/450	500/620	1,792 kg
50013004	BG slot channel, profile I-3, type G22/24, with 0.5% slope	4000	400/450	500/620	1,826 kg
50013005	BG slot channel, profile I-3, type G20/22, with 0.5% slope	4000	400/450	500/620	1,860 kg



Accessories

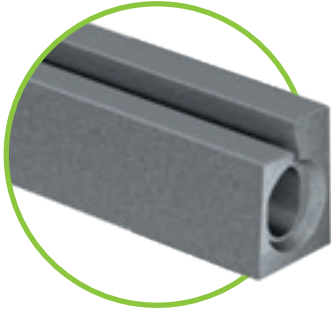
Item no.	Accessories	Length	Width	Height	Weight
50013020	Cleaning element (tongue-groove), type T30/30-CO incl. ductile iron grating	1000	400/450	500/620	462 kg
50013027	Cleaning element (tongue-tongue), type T20/20-CS incl. ductile iron grating	1000	400/450	500/620	510 kg
50013023	Sump unit (tongue-groove), type T30/30-VO with outlet incl. ductile iron grating	1000	400/450	500/620	415 kg
50013030	Sump unit (groove-groove), type T30/30-VU with outlet incl. ductile iron grating	1000	400/450	500/620	406 kg
50000011	Shaft base for sump unit, outlet with pipe coupling DN 200	550	550	380	101 kg
50013026	Fire protection component type PP (tongue-groove)	2000	400/500	1,070	1,739 kg
50013034	Front cap type ZU (tongue)	120	400/450	620	76 kg
50013035	End cap type ZZ (groove)	120	400/450	620	51 kg
50000022	Lifting grab for profile I-3, consisting of 2 items				4.4 kg



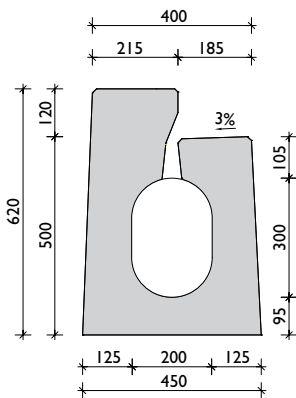


BG slot channels

Profile I-5



Profile I-5
Border, left



BG slot channel, profile I-5, DN 20x30 - class D 400 kN

Covered/continuous slot, **border 12 cm left**, with or without slope

Item no.	Channel body	Length	Width	Height	Weight
50015040	BG slot channel, profile I-5, type T30/30, without slope	4000	400/450	500/620	1,741 kg
50015050	BG slot channel, profile I-5, type T28/28, without slope	4000	400/450	500/620	1,775 kg
50015051	BG slot channel, profile I-5, type T26/26, without slope	4000	400/450	500/620	1,809 kg
50015052	BG slot channel, profile I-5, type T24/24, without slope	4000	400/450	500/620	1,844 kg
50015053	BG slot channel, profile I-5, type T22/22, without slope	4000	400/450	500/620	1,878 kg
50015054	BG slot channel, profile I-5, type T20/20, without slope	4000	400/450	500/620	1,912 kg
50015041	BG slot channel, profile I-5, type G28/30, with 0.5% slope	4000	400/450	500/620	1,758 kg
50015042	BG slot channel, profile I-5, type G26/28, with 0.5% slope	4000	400/450	500/620	1,792 kg
50015043	BG slot channel, profile I-5, type G24/26, with 0.5% slope	4000	400/450	500/620	1,827 kg
50015044	BG slot channel, profile I-5, type G22/24, with 0.5% slope	4000	400/450	500/620	1,861 kg
50015045	BG slot channel, profile I-5, type G20/22, with 0.5% slope	4000	400/450	500/620	1,895 kg

Accessories

Item no.	Accessories	Length	Width	Height	Weight
50015060	Cleaning element (tongue-groove), type T30/30-CO incl. ductile iron grating	1000	400/450	500/620	467 kg
50015027	Cleaning element (tongue-tongue), type T20/20-CS incl. ductile iron grating	1000	400/450	500/620	515 kg
50015063	Sump unit (tongue-groove), type T30/30-VO with outlet incl. ductile iron grating	1000	400/450	500/620	420 kg
50015030	Sump unit (groove-groove), type T30/30-VU with outlet incl. ductile iron grating	1000	400/450	500/620	411 kg
50000011	Shaft base for sump unit, outlet with pipe coupling DN 200	550	550	380	101 kg
50015074	Front cap type ZU (tongue)	120	400/450	620	76 kg
50015075	End cap type ZZ (groove)	120	400/450	620	51 kg
50000022	Lifting grab for profile I-5, consisting of 2 items				4.4 kg

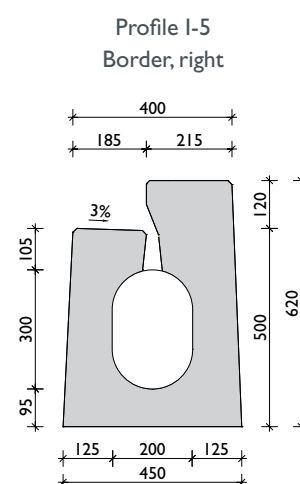


Adapters on request

BG slot channel, profile I-5, DN 20x30 - class D 400 kN

Covered/continuous slot, **border 12 cm right**, with or without slope

Item no.	Channel body	Length	Width	Height	Weight
50015000	BG slot channel, profile I-5, type T30/30, without slope	4000	400/450	500/620	1,741 kg
50015010	BG slot channel, profile I-5, type T28/28, without slope	4000	400/450	500/620	1,775 kg
50015011	BG slot channel, profile I-5, type T26/26, without slope	4000	400/450	500/620	1,809 kg
50015012	BG slot channel, profile I-5, type T24/24, without slope	4000	400/450	500/620	1,844 kg
50015013	BG slot channel, profile I-5, type T22/22, without slope	4000	400/450	500/620	1,878 kg
50015014	BG slot channel, profile I-5, type T20/20, without slope	4000	400/450	500/620	1,912 kg
50015001	BG slot channel, profile I-5, type G28/30, with 0.5% slope	4000	400/450	500/620	1,758 kg
50015002	BG slot channel, profile I-5, type G26/28, with 0.5% slope	4000	400/450	500/620	1,792 kg
50015003	BG slot channel, profile I-5, type G24/26, with 0.5% slope	4000	400/450	500/620	1,827 kg
50015004	BG slot channel, profile I-5, type G22/24, with 0.5% slope	4000	400/450	500/620	1,861 kg
50015005	BG slot channel, profile I-5, type G20/22, with 0.5% slope	4000	400/450	500/620	1,895 kg



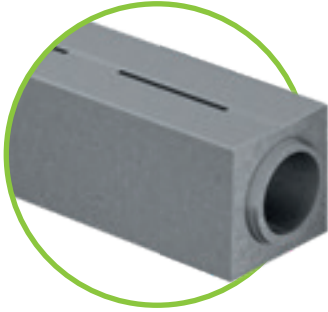
Accessories

Item no.	Accessories	Length	Width	Height	Weight
50015020	Cleaning element (tongue-groove), type T30/30-CO incl. ductile iron grating	1000	400/450	500/620	467 kg
50015027	Cleaning element (tongue-tongue), type T20/20-CS incl. ductile iron grating	1000	400/450	500/620	515 kg
50015023	Sump unit (tongue-groove), type T30/30-VO with outlet incl. ductile iron grating	1000	400/450	500/620	420 kg
50015030	Sump unit (groove-groove), type T30/30-VU with outlet incl. ductile iron grating	1000	400/450	500/620	411 kg
50000011	Shaft base for sump unit, outlet with pipe coupling DN 200	550	550	380	101 kg
50015034	Front cap type ZU (tongue)	120	400/450	620	76 kg
50015035	End cap type ZZ (groove)	120	400/450	620	51 kg
50000022	Lifting grab for profile I-5, consisting of 2 items				4.4 kg



BG slot channels

Profile II-1



BG slot channel, profile II-1, DN 30x30 - class D 400 kN

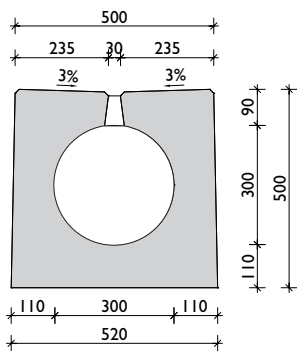
Interrupted slot, inner diameter 30 x 30 cm, without slope

Item no.	Channel body	Length	Width	Height	Weight
50021000	BG slot channel, profile II-1, type T30/30, without slope	4000	500/520	500	1,700 kg

Accessories

Item no.	Accessories	Length	Width	Height	Weight
50021180	Cleaning element type CO (tongue-groove) incl. ductile iron grating	1000	500/520	500	419 kg
50021182	Cleaning element type CS (tongue-tongue) incl. ductile iron grating	1000	500/520	500	429 kg
50021181	Sump unit type VO (tongue-groove) with outlet incl. ductile iron grating	1000	500/520	500	389 kg
50021183	Sump unit type VU (groove-groove) with outlet incl. ductile iron grating	1000	500/520	500	379 kg
50000011	Shaft base for sump unit, outlet with pipe coupling DN 200	550	550	380	101 kg
50021162	Front cap type ZU (tongue)	120	500/520	500	84 kg
50021163	End cap type ZZ (groove)	120	500/520	500	57 kg
50000021	Lifting grab for profile II-1, consisting of 2 items				4 kg

Profile II-1



BG slot channel, profile II-1, DN 30x30 - class F 900 kN

Interrupted slot, inner diameter 30 x 30 cm, without slope

Item no.	Channel body	Length	Width	Height	Weight
50021100	BG slot channel, profile II-1, type T30/30, without slope	4000	500/520	500	1,700 kg

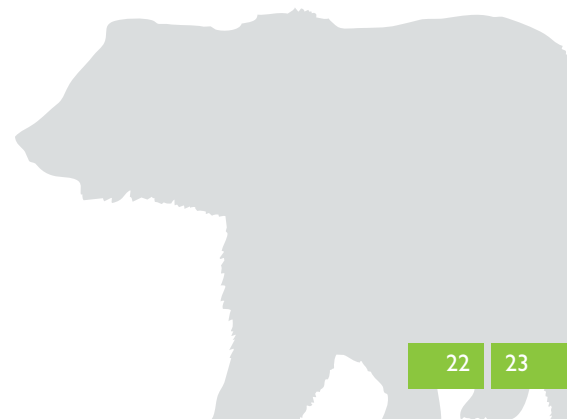
Accessories

Item no.	Accessories	Length	Width	Height	Weight
50021180	Cleaning element type CO (tongue-groove) incl. ductile iron grating	1000	500/520	500	419 kg
50021182	Cleaning element type CS (tongue-tongue) incl. ductile iron grating	1000	500/520	500	429 kg
50021181	Sump unit type VO (tongue-groove) with outlet incl. ductile iron grating	1000	500/520	500	389 kg
50021183	Sump unit type VU (groove-groove) with outlet incl. ductile iron grating	1000	500/520	500	379 kg
50000011	Shaft base for sump unit, outlet with pipe coupling DN 200	550	550	380	101 kg
50021162	Front cap type ZU (tongue)	120	500/520	500	84 kg
50021163	End cap type ZZ (groove)	120	500/520	500	57 kg
50000021	Lifting grab for profile II-1, consisting of 2 items				4 kg



Adapters on request

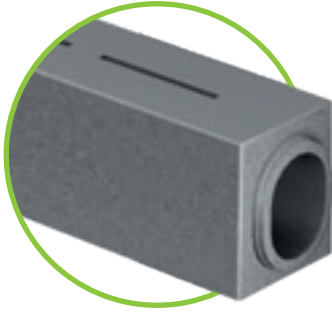
References





BG slot channels

Profile III-1



BG slot channel, profile III-1, DN 30x40 - class D 400 kN

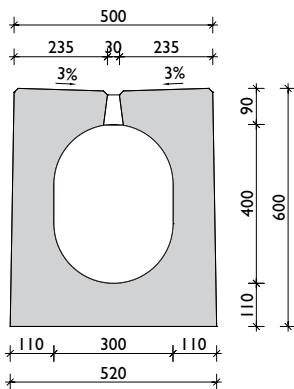
Interrupted slot, inner width 30 x 40 cm, without slope

Item no.	Channel body	Length	Width	Height	Weight
50031000	BG slot channel, profile III-1, type T40/40, without slope	4000	500/520	600	1,897 kg

Accessories

Item no.	Accessories	Length	Width	Height	Weight
50031180	Cleaning element type CO (tongue-groove) incl. ductile iron grating	1000	500/520	600	468 kg
50031182	Cleaning element type CS (tongue-tongue) incl. ductile iron grating	1000	500/520	600	479 kg
50031181	Sump unit type VO (tongue-groove) with outlet incl. ductile iron grating	1000	500/520	600	438 kg
50031183	Sump unit type VU (groove-groove) with outlet incl. ductile iron grating	1000	500/520	600	427 kg
50000011	Shaft base for sump unit, outlet with pipe coupling DN 200	550	550	380	101 kg
50031162	Front cap type ZU (tongue)	120	500/520	600	102 kg
50031163	End cap type ZZ (groove)	120	500/520	600	67 kg
50000021	Lifting grab for profile III-1, consisting of 2 items				4 kg

Profile III-1



BG slot channel, profile III-1, DN 30x40 - class F 900 kN

Interrupted slot, inner width 30 x 40 cm, without slope

Item no.	Channel body	Length	Width	Height	Weight
50031100	BG slot channel, profile III-1, type T40/40, without slope	4000	500/520	600	1,897 kg

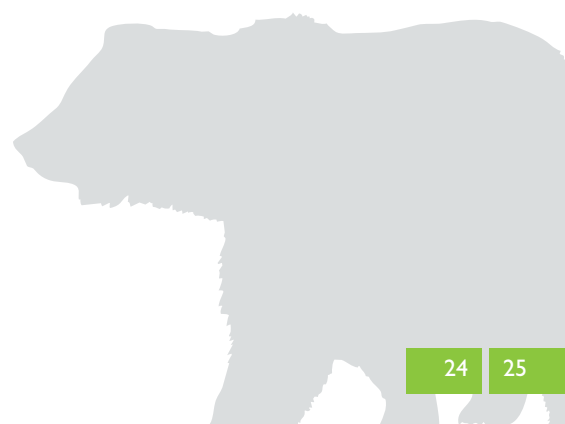
Accessories

Item no.	Accessories	Length	Width	Height	Weight
50031180	Cleaning element type CO (tongue-groove) incl. ductile iron grating	1000	500/520	600	468 kg
50031182	Cleaning element type CS (tongue-tongue) incl. ductile iron grating	1000	500/520	600	479 kg
50031181	Sump unit type VO (tongue-groove) with outlet incl. ductile iron grating	1000	500/520	600	438 kg
50031183	Sump unit type VU (groove-groove) with outlet incl. ductile iron grating	1000	500/520	600	427 kg
50000011	Shaft base for sump unit, outlet with pipe coupling DN 200	550	550	380	101 kg
50031162	Front cap type ZU (tongue)	120	500/520	600	102 kg
50031163	End cap type ZZ (groove)	120	500/520	600	67 kg
50000021	Lifting grab for profile III-1, consisting of 2 items				4 kg



Adapters on request

References





Accessories

BG slot channels - a system of CS-Beton



Sump unit, bottom part (on shaft)



Sump unit, top part



Installed sump unit

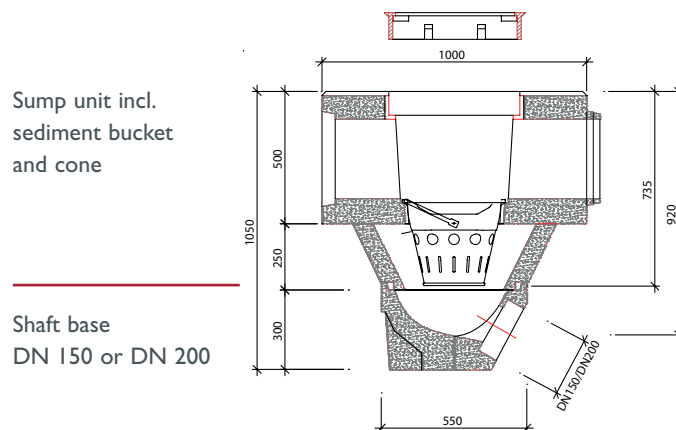


Sump units

Sump units are manufactured with an element length of 1000 mm and supplied in 2 parts.

The bottom part must be laid first so that it will not twist or tilt, after that the top part with pre-formed outlet can be placed on it. The top part is available in 2 different designs: with a groove-groove or tongue-groove system depending on the connection options in the channel line. The ductile iron cover is securely bolted into the frame.

Installation detail for the sump unit



Sediment bucket (integrated into sump unit)

A galvanised sediment bucket is included in the sales set. It is used to trap coarse dirt and can be cleaned at any time.

Front-/ end caps

Front caps (tongue) or end caps (groove) provide a clean and tight closure of the channel line.

Fire protection component

The fire protection component, with an element length of 2000 mm, is used to safely stop burning liquids (e.g. oil, fuel, etc.) in tunnel construction. The integral baffle ensures that liquid does not continue to burn in the channel line.



Curved element

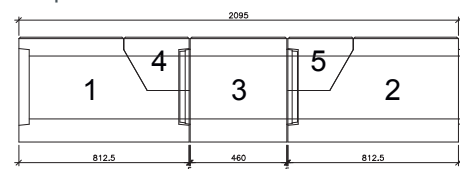
The curved element can be used to lay channel components in a radius of 1 metre, from min. 7° to max. 45°. This flexibility makes installation much easier.



Replacement element / adapters

The replacement element set consists of 5 individual parts which allow easy replacement of damaged elements in an existing channel line. The "replacement part" (no. 3) can be supplied in a wide range of installation lengths, from a minimum of 2100 mm to a maximum of 4000 mm.

Drawing of replacement element



Cleaning element

The cleaning element is 1000 mm long and is available in 2 different systems: with a tongue-groove or tongue-tongue system, depending on connection options/position in the channel line. The ductile iron cover is bolted into the cleaning element and can be opened quickly and easily during cleaning work.



Lifting grabs

Installation can be carried out simply and effectively using the specially developed lifting grab.

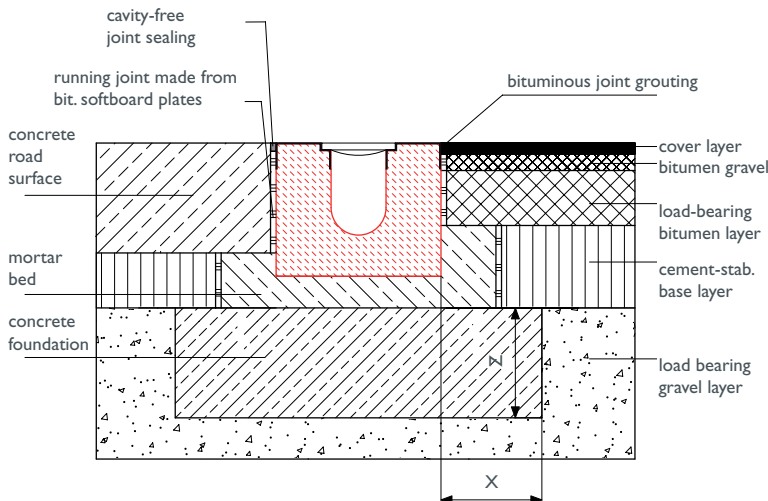




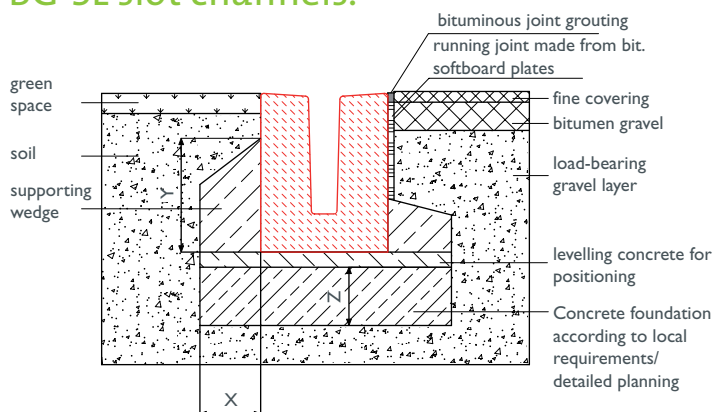
BG installation examples

BG-SI safety channels and BG-SL slot channels

BG-SI safety channels.



BG-SL slot channels.



Our installation guidelines and installation examples are generally accepted suggestions. Special types of installation must be defined by the planners on the basis of local conditions. The generally recognised technical rules and regulations must be observed during installation.

- 1 The load class (in accordance with EN 1433) and installation site must be appropriate for the local conditions.
- 2 Channels must be installed on mechanically compressed base layers or reinforced concrete slabs according to the project engineer's specifications. The drainage channels are lifted onto spacer blocks and grouted with high-strength mortar or laid on an earth-moist foundation. The channel elements must always be lifted using suitable tools (e.g. BG lifting grab).
- 3 A supporting wedge may be needed at the side, depending on structural requirements. Start laying the channel line at the junction to the outlet.
- 4 To ensure that the section is completely sealed, a moulded safety seam is already provided on the front of BG drainage channels. It determines the correct width and depth of the sealing joint and can be sealed with a suitable sealant. (See the guidelines for use of BG sealing systems). In addition, a moulded hemisphere is provided on the front to ensure the correct spacing between the individual channel elements in order to compensate for expansion stresses caused by temperature fluctuations.
- 5 When sealing the adjacent surfaces, always ensure that the channel elements are not exposed to any mechanical damage.
- 6 Any running joints needed between the BG drainage channels and the adjacent carriageway (to compensate for horizontal forces) can be provided directly on the channel element. In the adjacent concrete area, running joints which cross the channel line must be positioned so that they run through a channel joint.
- 7 All adjacent concrete surfaces should be permanently approx. 3 - 5 mm higher than the surface of the channels. The same installation guidelines also apply to sump units.
- 8 Ensure that the bolts in the gratings form a permanent, positive connection. The operator is responsible for regular maintenance and inspection!

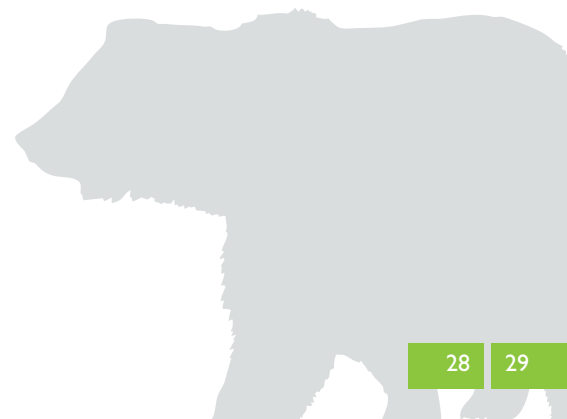
Load class	A 15	B 125	C 250	D 400	E 600	F 900
Concrete quality - found. accor. Ö-Norm B4710-1*	C16/20	C20/25	C20/25	C25/30	C25/30	C25/30
Foundation width: X	>8 cm	>10 cm	>15 cm	>15 cm	>15 cm	>20 cm
Foundation height: Y						
BG-SI	Not required					
BG-SL	Minimum channel height -15 cm					
Foundation thickness: Z	>8 cm	>10 cm	>15 cm	>20 cm	>20 cm	>25 cm

*Concrete quality is a minimum requirement and must be adjusted to local conditions.

CAUTION: Impact, braking and rotary forces must be considered separately. Always follow the installation instructions. We reserve the right to make technical changes. Not suitable for installation across the carriageway in primary roads or motorways.

Further information can be found on our website www.graspointner.at or by contacting one of our technical engineers directly for installation conditions which differ from those described here.

Installation details





BG installation examples

BG slot channels - CS-Beton system



Standard applications:

The following installation guidelines and installation examples are intended for standard applications. The load class and the installation location must be adapted to the local conditions by the planners. The generally recognised technical rules and regulations must be observed.

EN 1433 includes an exception for the slot widths of slot channels which are installed in areas where the use of bicycles is not permitted. On surfaces where bicycles are permitted, slot channels with a slot width equal to 30 mm may only be installed so that the longitudinal axis of the slot lies at right angles, or a maximum of $\pm 45^\circ$, to the direction of travel.

Foundation:

- 1 BG slot channels should be laid as follows depending on the condition of the foundation and the load class:

Class D 400 kN Type I – no load-bearing foundation required. Channels are laid on a mechanically compressed base layer (= frost protection layer) and a blinding/levelling layer made of concrete.

Class F 900 kN, Type M – structurally calculated reinforced concrete foundation required according to project engineer's specifications. When laying a channel on the reinforced concrete foundation, the connection between channel and foundation must be established using a suitable volume-stable assembly or grouting mortar, at least 2 cm thick, with quality at least C 25/30. When using a grouting mortar, the slot channel must be positioned and aligned on appropriate spacers. When backfilling the channel, ensure that the channel is evenly inserted and continuously supported (avoid backfilling from one side).



Lifting tool:

- 2 BG slot channels must be unloaded and moved using suitable lifting tools which allow for even and precise lifting and lowering (e.g. truck-mounted crane, appropriate digger). The components must be suspended centrally. Lifting tools available on loan from BG.
- 3 First the lower part of the lifting tool is lowered into the channel slot and turned through 90° to ensure that it is protected against rotation in the slot. Then the lifting device of the crane or digger can be hooked onto the lifting tool and the channel can be lifted easily and safely.

Butt joints and sealing:

- 4 Ensure that the first channel in the line is precisely positioned. During laying, the surfaces must be precisely aligned.
- 5 Before joining the elements together, clean the socket and fit the gasket on the spigot end. Apply the lubricant supplied evenly to the gasket and the sealing surface of the socket.
- 6 The slot channel suspended from the lifting tool must then be moved to the channel that has already been laid, until the gasket is evenly covered and the parts can be securely pushed together. The width of the butt joint must permanently be min. 5 mm to max. 15 mm. For uniform joints, we recommend using aids such as wooden slats with a thickness of around 10 mm.





BG installation examples

BG slot channels - CS-Beton system



Covering surfaces and expansion joints:

- 7** The road surface connection (asphalt, concrete, etc.) must be installed according to the planning specifications. When connecting concrete surfaces, sufficiently large dilation joints (expansion joints) must be provided along the channel so that no temperature-related expansion forces affect the sides of the channel. A continuous, suitable polystyrene plate or a bituminous softboard plate must be installed along the longitudinal joint between the channel and concrete cover over the full height of the channel. These plates must be capable of absorbing the expansion forces of the concrete cover and may not transfer/dissipate the horizontal forces of the concrete cover onto the channel.

IMPORTANT! Contractors must ensure that there is no rigid connection between the adjacent road surface (foundation, base layer, cover) and the channel.



- 8** All adjacent surface layers must permanently run at least at the same level as the channel surface in order to avoid mechanical damage (e.g. snow clearing) and in order to ensure proper water drainage.

- 9** Following completion of the adjacent surfaces, the longitudinal and transverse joints of the channels must be filled with a non-shrink sealant. Always ensure that the transverse joints between the individual channel units are permanently formed so that minor, temperature-related longitudinal movements of the slot channels can be absorbed. In order to avoid spalling, the slot channels must not be driven on during the construction phase. When working with machines and vehicles, ensure that the channels are not damaged.

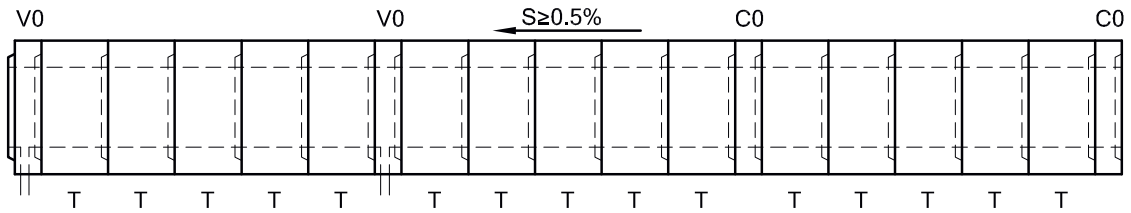


Further information can be found on our website or by contacting one of our technical engineers directly.

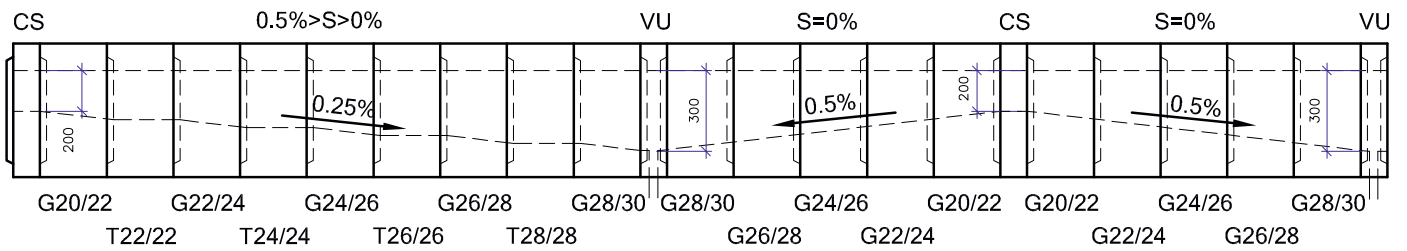


INSTALLATION EXAMPLES

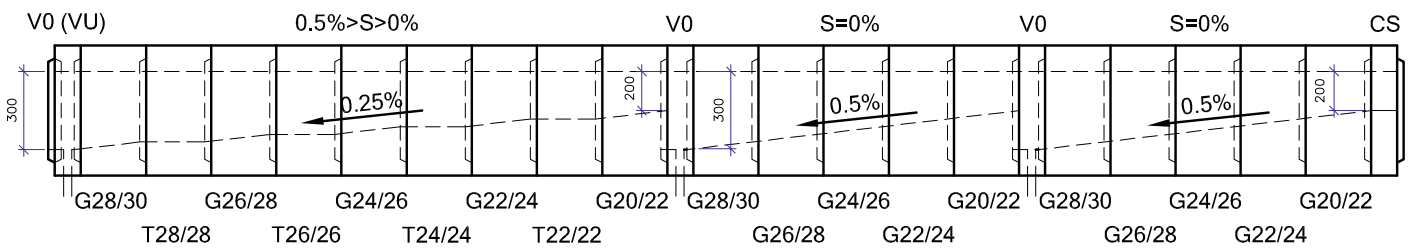
Arrangement of slot channels without inner slope:



Arrangement of slot channels with inner slope (slot channels with bottom outlet in roof-shaped bed):

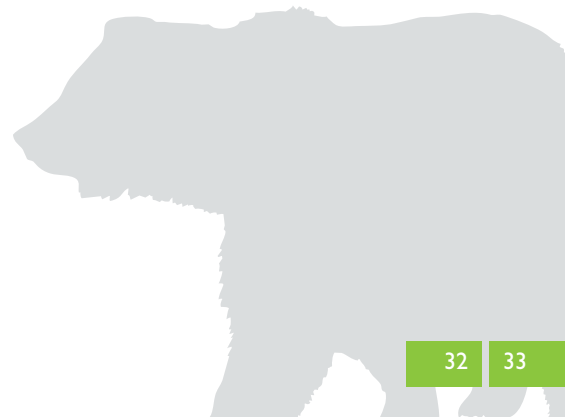


Arrangement of slot channels with inner slope (slot channels with bottom outlet in zigzag-shaped bed):



Key:

- VO = Sump unit with tongue and groove
- VU = Sump unit with groove on both sides
- CO = Cleaning element with tongue and groove
- CS = Cleaning element with tongue on both sides

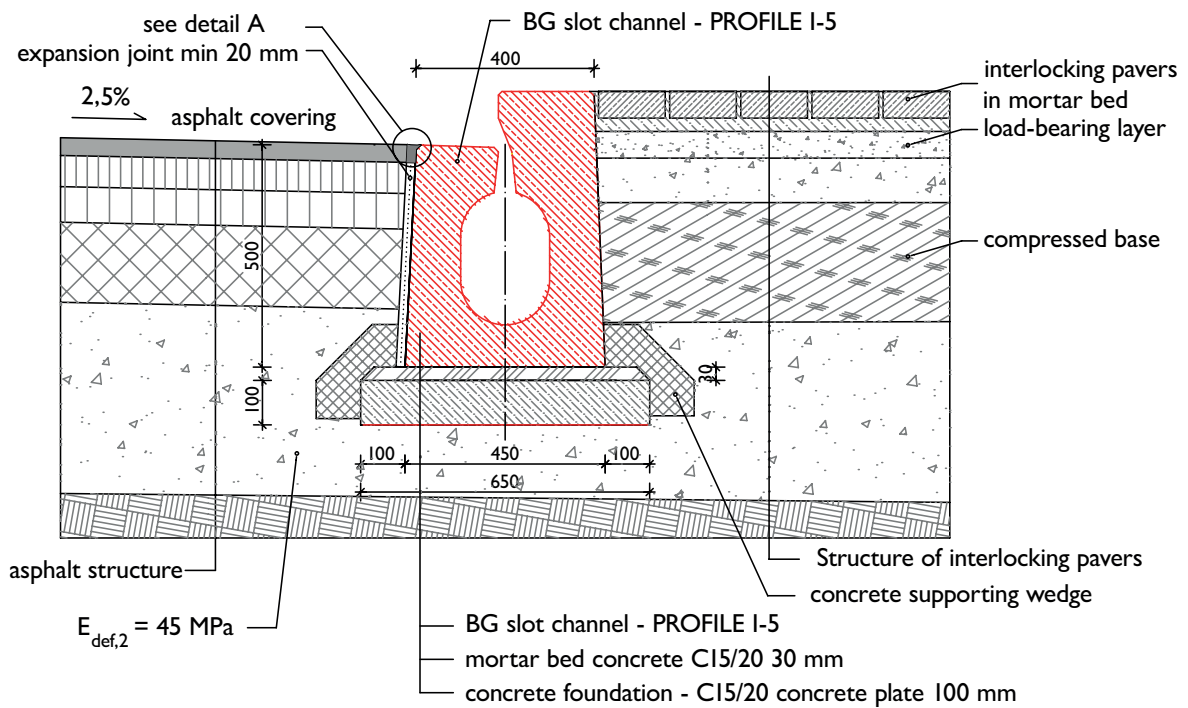




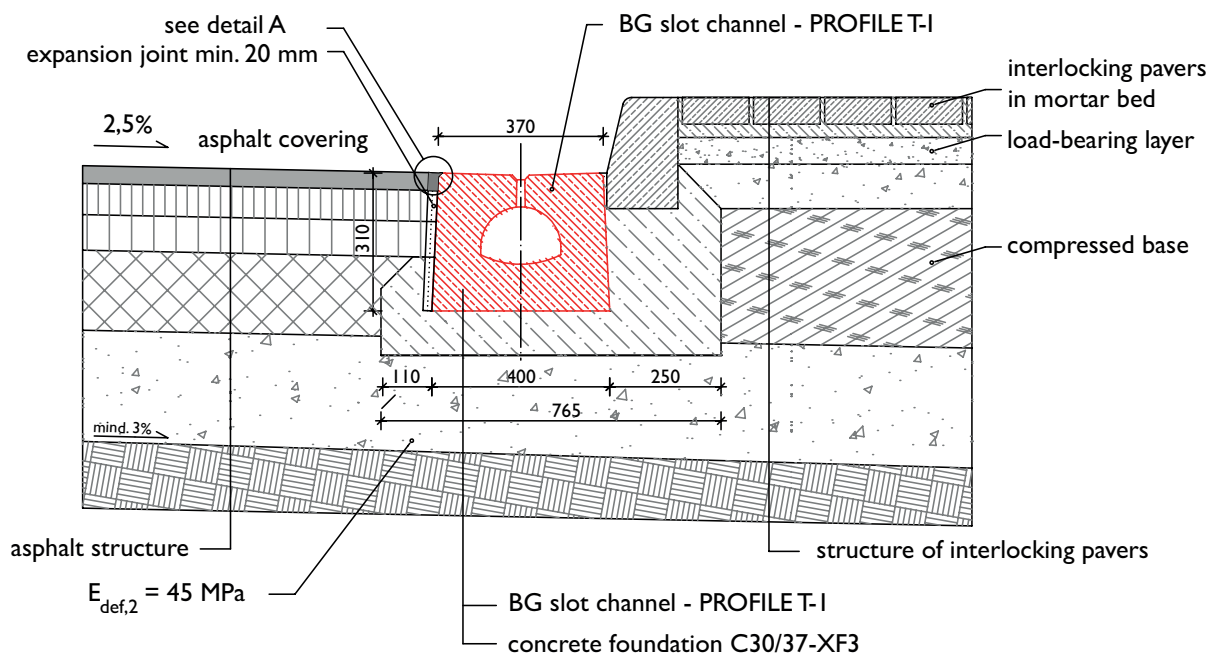
BG installation examples

BG slot channels - CS-Beton system

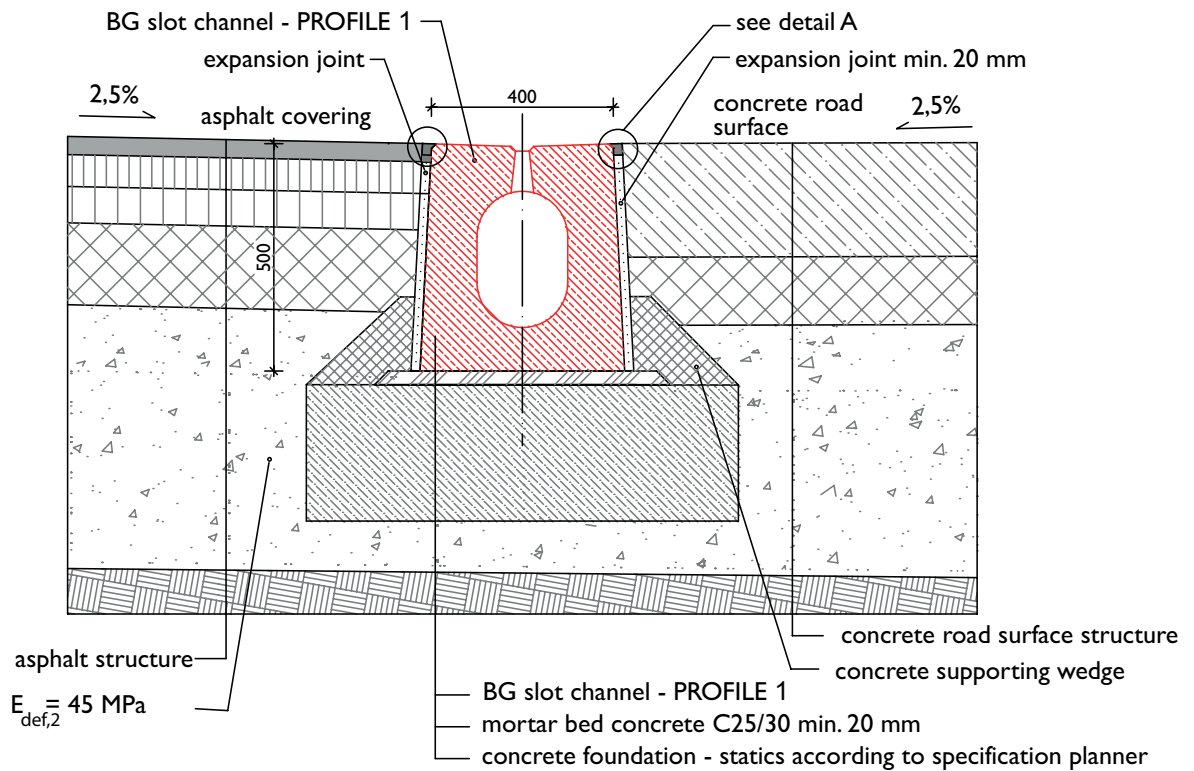
Channel profile I-5 with border:



Channel profile T-1 laid on a border:



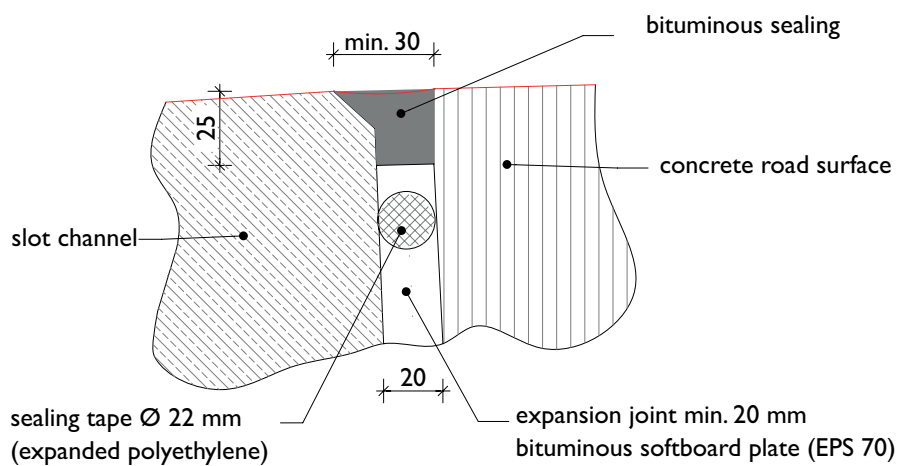
Channel with connection to concrete and asphalt:



Expansion joint detail:

Note: expansion joint e.g. EPS70, bituminous softboard plate, etc.

detail A:





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Sustainable innovation.

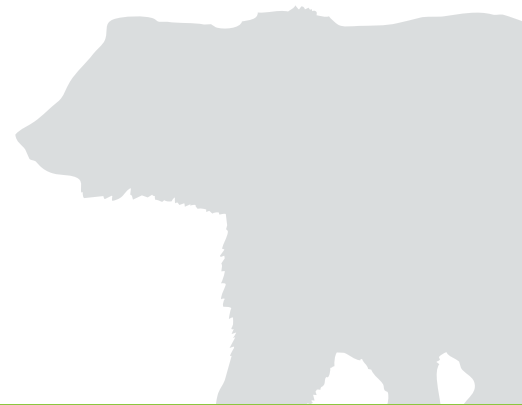
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