

MEICON®-N - HSD 2



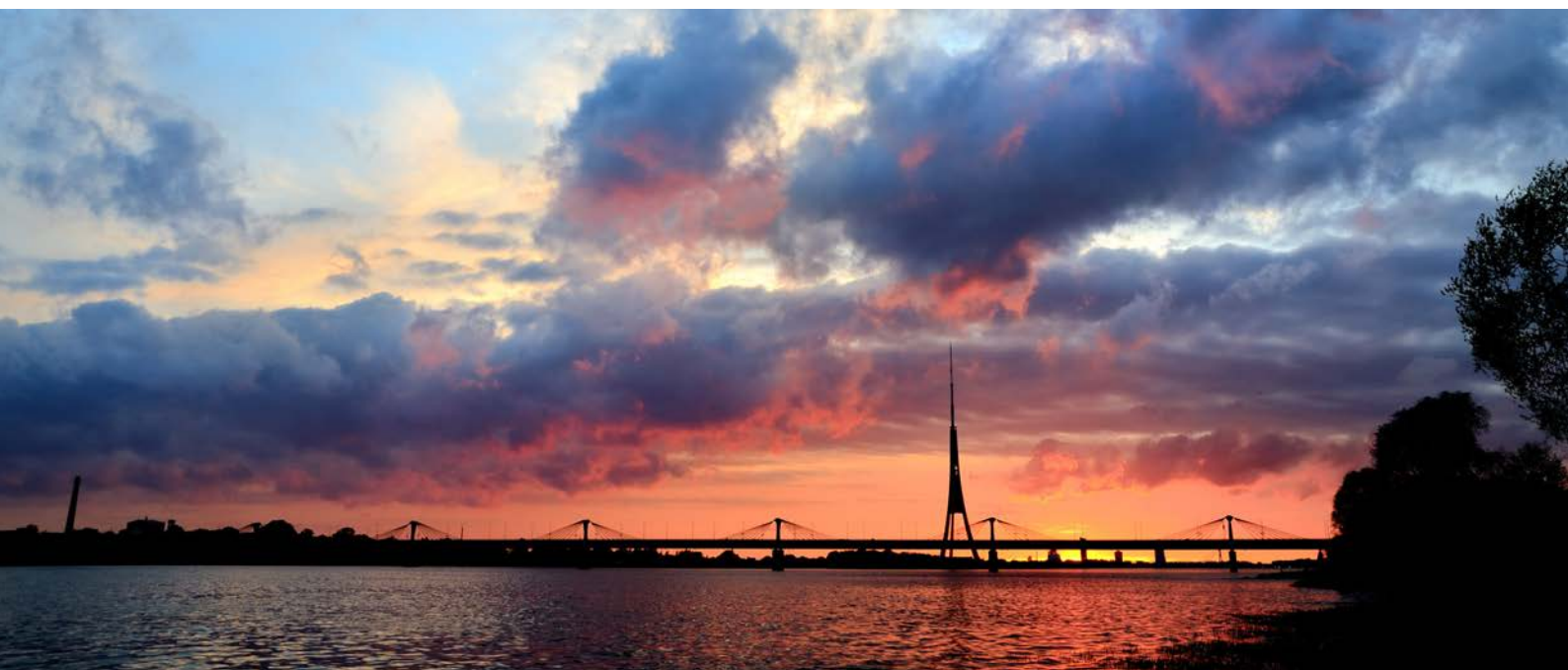
MEICON®-N - HSD 5



BRIDGE AND OVERPASS
DRAINAGE SOLUTIONS

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BRIDGE DRAINS

Bridge drains made of cast iron, durable and reliable in use

One of the most important preconditions for the perfect functioning of bridge structures is the fast drainage of the precipitation water. Bridge drains, piping etc. are in the case of such structures practically no longer accessible and must therefore meet particularly high requirements. Moreover, a large number of regulations and guidelines are to be observed.



KIWA



MeierGuss bridge drains are KIWA-tested and are in conformity with the quality and testing provisions of Quality Assurance for Sewer Castings RAL-GZ 692

Bridge drains – new construction MEICON®-N

Bridge drains are fundamentally multi-part structures. The bottom parts (pans) are first placed on the formwork, connected to the piping and then jointly concreted into the bridge body structure. For stable fixing in place of the bottom part, erection supports and welded supports can be supplied. The drain top parts (vertically and horizontally adjustable, rotatable) are put in place at the right level and positioned correctly only after the sealing measures and production of the carriageway perimeter strips / guard rails.



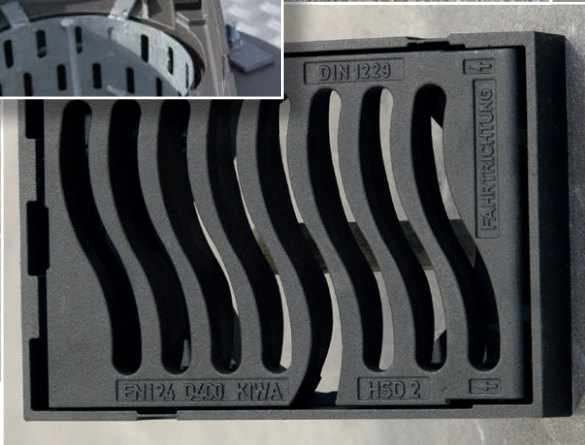
The drain top part of the HSD 2 series (vertically and horizontally adjustable, rotatable) is encircled by a clamping ring which ensures the tilt and height adjustment to the deck level and at the same time takes on the function of a clamping ring for sealing above the bridge body structure. The top part can, moreover, be turned infinitely through 360° in relation to the bottom part.

In the case of the HSD 5 series, the bottom part is configured funnel-shaped in the outer area and hence provides ideal conditions for the fixing of the seal with the help of a clamping ring. Additionally the seal is pressed in with a screw clamping ring.

Bridge drains – new construction MEICON®-N – functional and economical

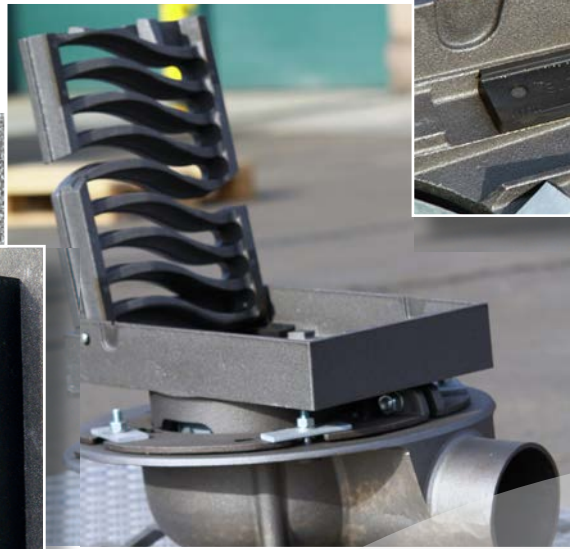
Easy to assemble

Grate is removable for installation



Can be opened

Grate can be opened max. 110° and can be closed in the direction of the traffic



Rattle-free

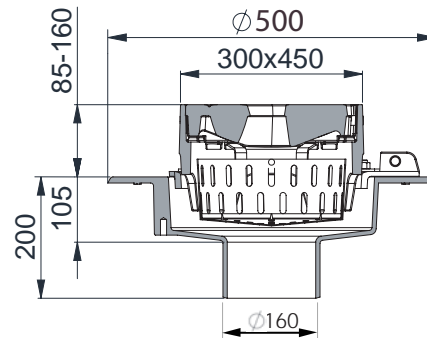
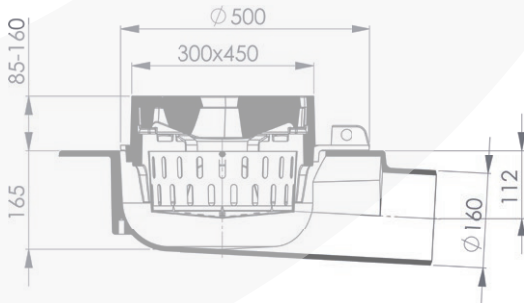
Buttressed MEIPREN® insert easily replaceable as required



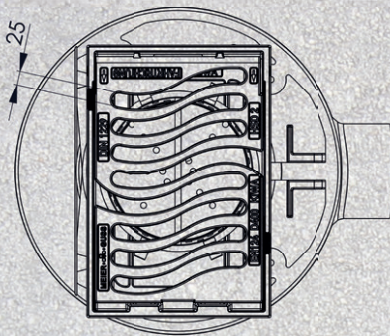
Secured

Clamping grate with self-locking system safe for traffic

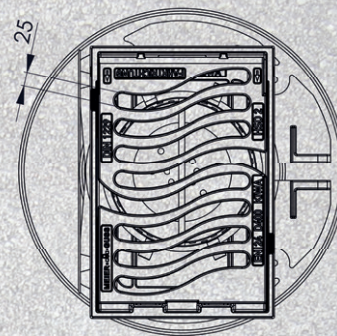
Bridge drains – new construction – an overview* MEICON®-N HSD 2



MEICON®-N - HSD 2



MEICON®-N - HSD 2



Drain nozzle DN 150 horizontal

(consisting of: grate, clamping ring, trap and bottom part)

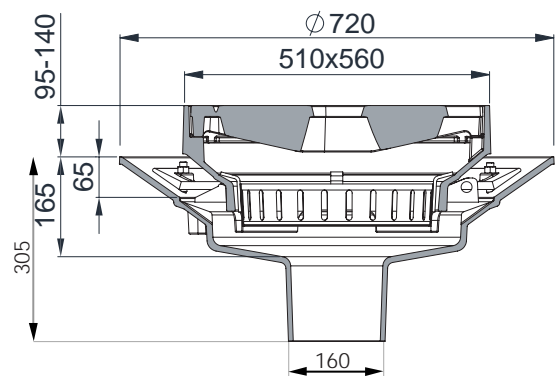
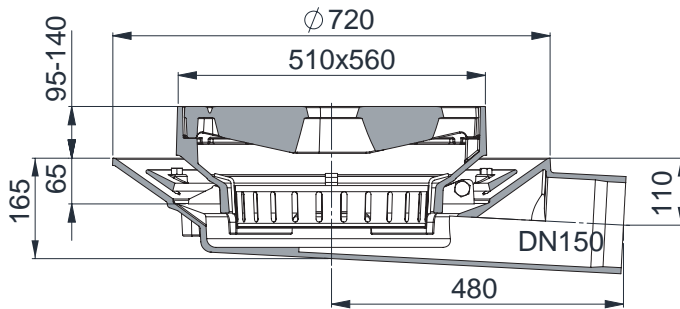
Drain nozzle DN 150 vertical

(consisting of: grate, clamping ring, trap and bottom part)

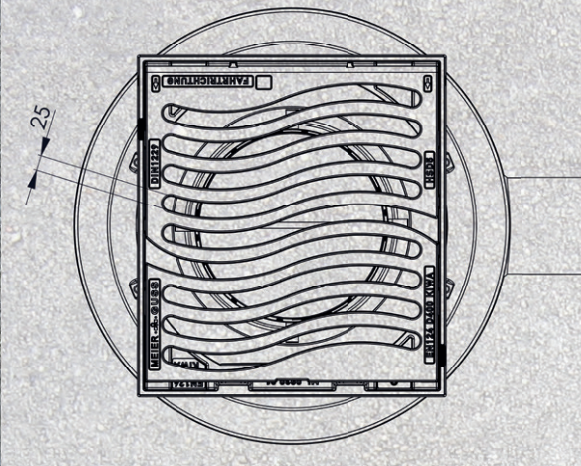
- In accordance with WAS 1
- Class D 400 in accordance with EN 124 / DIN 1229
- Characteristic dimensions 300 x 450 mm
- Frame made of cast iron with damping MEIPREN® insert
- Clamping grate made of cast iron with self-locking system safe for traffic
- Additional hinge closing in the direction of the traffic, opening max. 110°
- Straight form with 25 mm slot width
- Adjusting range 85 – 160 mm
- Bucket made of galvanised steel
- Inlet cross-section approx. 550 cm²
- Construction site drainage that can be knocked out by customer

* MEICON-N HSD 2 bridge drains are also suitable for renovation if the bottom parts used are from MeierGuss.

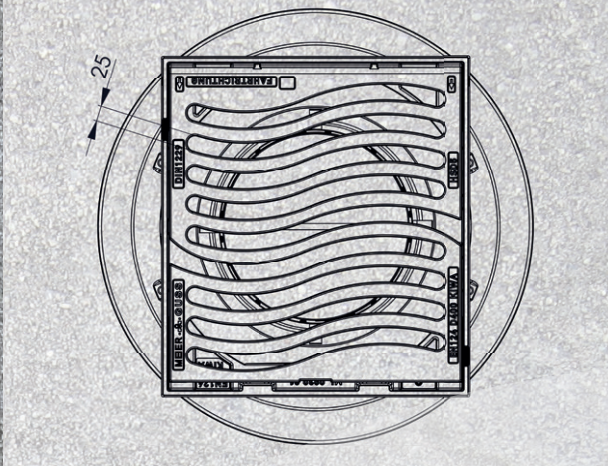
Bridge drains – new construction – an overview* MEICON®-N HSD 5



MEICON®-N - HSD 5



MEICON®-N - HSD 5



Drain nozzle DN 150 horizontal

(consisting of: grate, clamping ring, trap and bottom part)

Drain nozzle DN 150 vertical

(consisting of: grate, clamping ring, trap and bottom part)

- In accordance with WAS 1
- Class D 400 in accordance with EN 124 / DIN 1229
- Characteristic dimensions 510 x 560 mm
- Frame made of cast iron with damping MEIPREN® insert
- Clamping grate made of cast iron with self-locking system safe for traffic
- Additional hinge closing in the direction of the traffic, opening max. 110°
- Straight form with 25 mm slot width
- Adjusting range 95 – 140 mm
- Bucket made of galvanised steel
- Inlet cross-section approx. 1238 cm²
- Construction site drainage that can be knocked out by customer

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Bridge drains – renovation

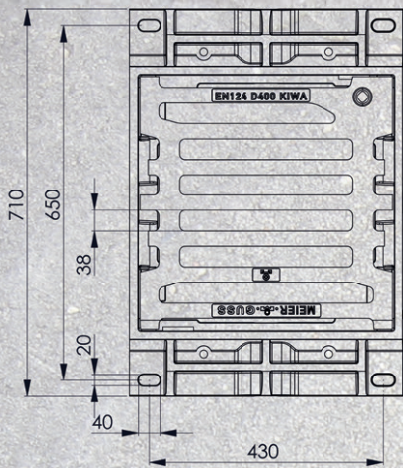
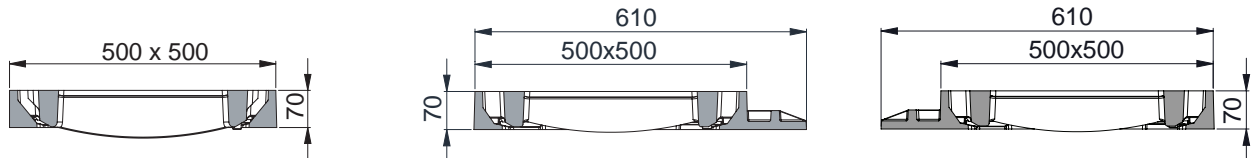
For the renovation of bridge structures both the road surface and the sealing are completely removed. In this case the drain top parts of the existing bridge drains almost always become unusable so that replacement is unavoidable.

The MeierGuss renovation top parts on 2 or 3 sides show a particularly wide outer flange and an extremely low overall height of 60 to 70 mm and are hence universally usable.



In order to ensure that the renovation top parts always close in the traffic direction there are variants for left-hand sided and for right hand-sided fitting. For special cases in which you do not want to or cannot make this allocation there is the variant for fitting on both sides.

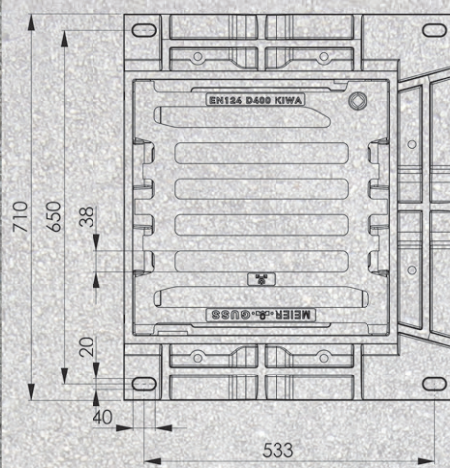
Renovation upper parts for deck renewal measures - an overview



Article-No. B1082555

Frame height 70 mm

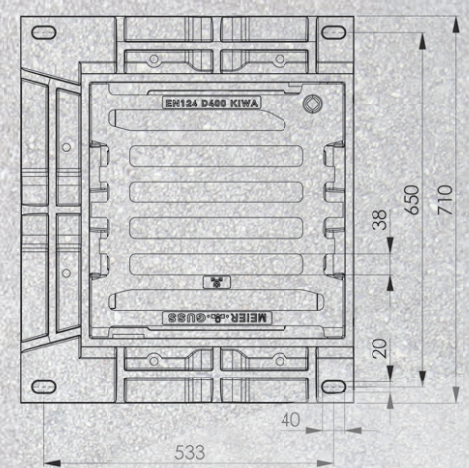
Fitting **on both sides** possible



Article-No. B1082545

Frame height 70 mm

Fitting on **left-hand side**
(hinging on right*)



Article-No. B1082535

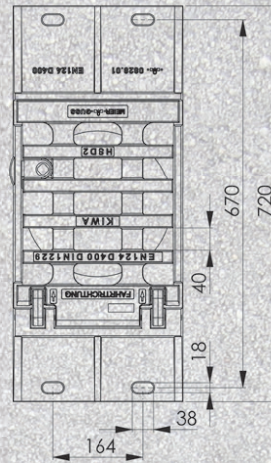
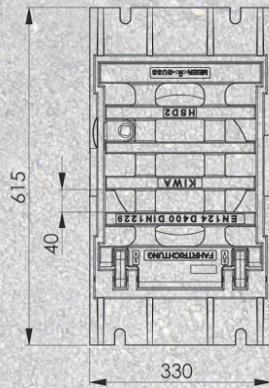
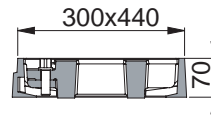
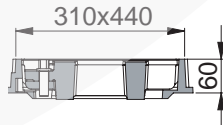
Frame height 70 mm

Fitting on **right-hand side**
(hinging on left*)

- Class D 400 in accordance with EN 124
- Characteristic dimensions 500 x 500 mm
- Frame made of cast iron
- Grate made of cast iron with MEIPREN® damping insert
- Grate can be opened max. 110° and closes in the direction of the traffic
- Straight form with 38 mm slot width
- With safety screw locking system
- Inlet cross-section approx. 1100 cm²

* The arrangement of the hinges is observed from the guard rail. The grate must close in the direction of the traffic, the flange must be located on the roadway side!

Renovation top parts for deck renewal measures - an overview



Article-No. B1082730

Frame height 60 mm

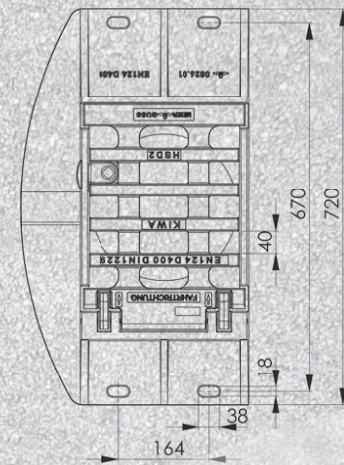
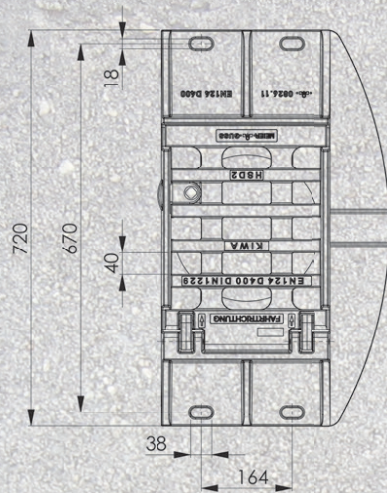
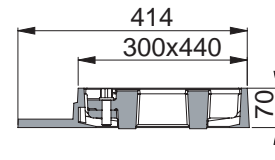
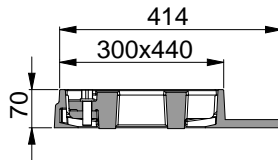
Fitting **on both sides** possible

Article-No. B1082935

Frame height 70 mm

Fitting **on both sides** possible

- Class D 400 in accordance with EN 124 / DIN 1229
- Characteristic dimensions 300 x 440 mm
- Frame made of cast iron
- Grate made of cast iron with MEIPREN® damping insert
- Grate can be opened max. 180° and closes in the direction of the traffic
- Straight form with 40 mm slot width
- With double joint hinge
- With safety screw locking system
- Inlet cross-section approx. 530 cm²



Article-No. B1082745

Frame height 70 mm

Fitting on **left-hand side**
(hinging on right*)

Article-No. B1082735

Frame height 70 mm

Fitting on **right-hand side**
(hinging on left*)

- Class D 400 in accordance with EN 124 / DIN 1229
- Characteristic dimensions 300 x 440 mm
- Frame made of cast iron
- Grate made of cast iron with MEIPREN® damping insert
- Grate can be opened max. 180° and closes in the direction of the traffic
- Straight form with 40 mm slot width
- With double joint hinge
- With safety screw locking system
- Inlet cross-section approx. 530 cm²

* The arrangement of the hinges is observed from the guard rail. The grate must close in the direction of the traffic, the flange must be located on the roadway side!

Accessories for bridge drains

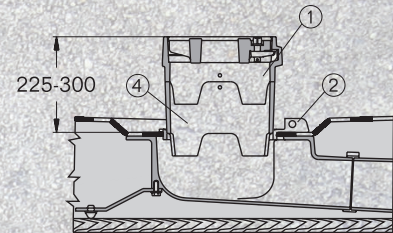
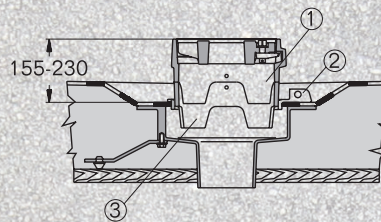
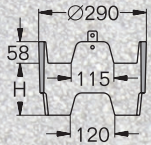
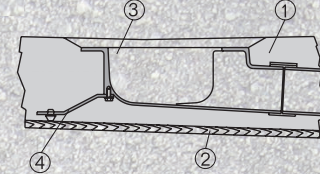
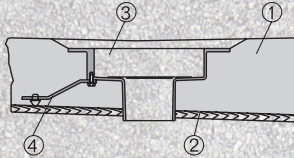
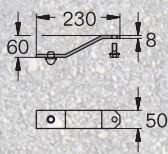
Article-No. B1081711

Erection supports for stable fixing in the formwork
(per drain 3 off necessary)

- made of flat irons 50/8/230 mm
- double angled
- with M12 screw and plastic plug

- ① Bridge body
- ② Bridge formwork
- ③ Drain bottom part / pan
- ④ Erection support with plug

Installation example



Article-No. B1085021

Extension piece made of cast iron to extend the adjustment range of bridge drains HSD 2

- 2 screw-mountable brackets made of steel for fastening to the shaft of the top part of the drain
- Overall height 70 mm
- Adjustment range 155 – 230 mm

Installation notes:

The clamping / flange ring of the bridge drain is removed. Then the extension part is fastened by means of the bracket at the bottom of the profiled shaft of the top part. For that 2 drill holes with a diameter of 9 mm are to be made in the shaft. After fitting, the clamping and flange ring is to be pushed on again from below, adjusted to the correct height and screwed together non-positively.

Alternatively:

Article-No. B1085022

- Overall height 140 mm
- Adjustment range 225 – 300 mm

- ① Bridge drain top part (without bucket)
- ② Clamping / flange ring with locking screw
- ③ Extension piece, overall height 70 mm
- ④ Extension piece, overall height 140 mm

Accessories for bridge drains

Article-No. B0937147

For drains 300 x 440 mm
and 300 x 500 mm

Bucket made of steel

- galvanised
- raised support bracket
- holds 5 litres

Article-No. B0937136

For drains 500 x 500 mm

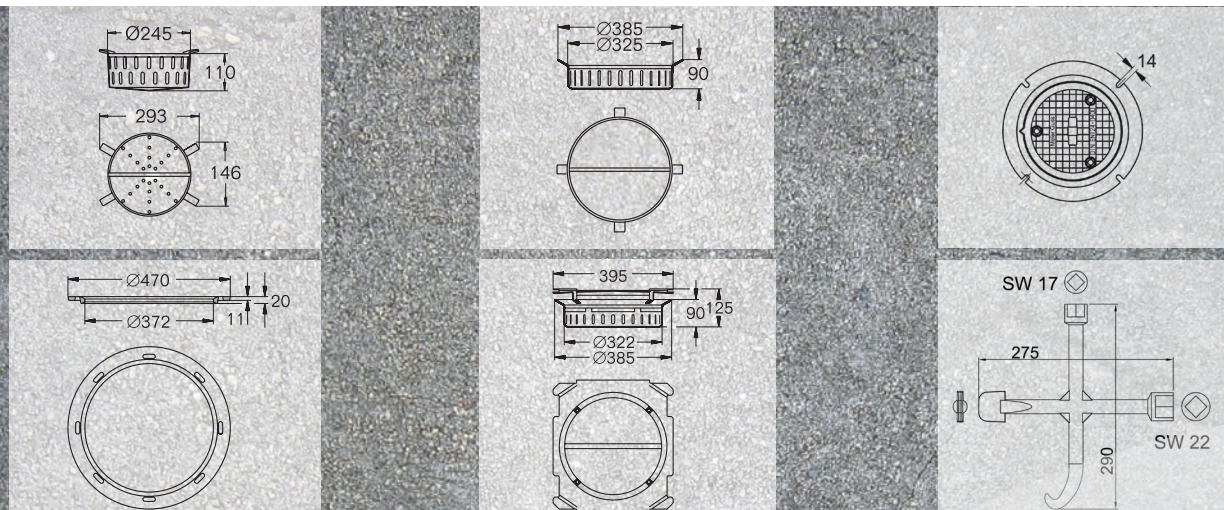
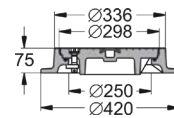
Bucket made of steel

- galvanised
- holds 5.2 litres

Article-No. B200800

Manhole cover made of cast iron

- class D 400
- according to DIN EN 124 / DIN 1229
- characteristic dimensions diam. 250 mm
- surface waterproof
- 3 screwed turnbuckles



Article-No. B1093507

Reversible support ring
for bridge drains HSD 5

- Adjustment range 70 or 80 mm
by turning over the ring

Article-No. B0937129

Bucket made of steel for
renovation top parts
500 x 500 mm

- galvanised
- holds 5.2 litres

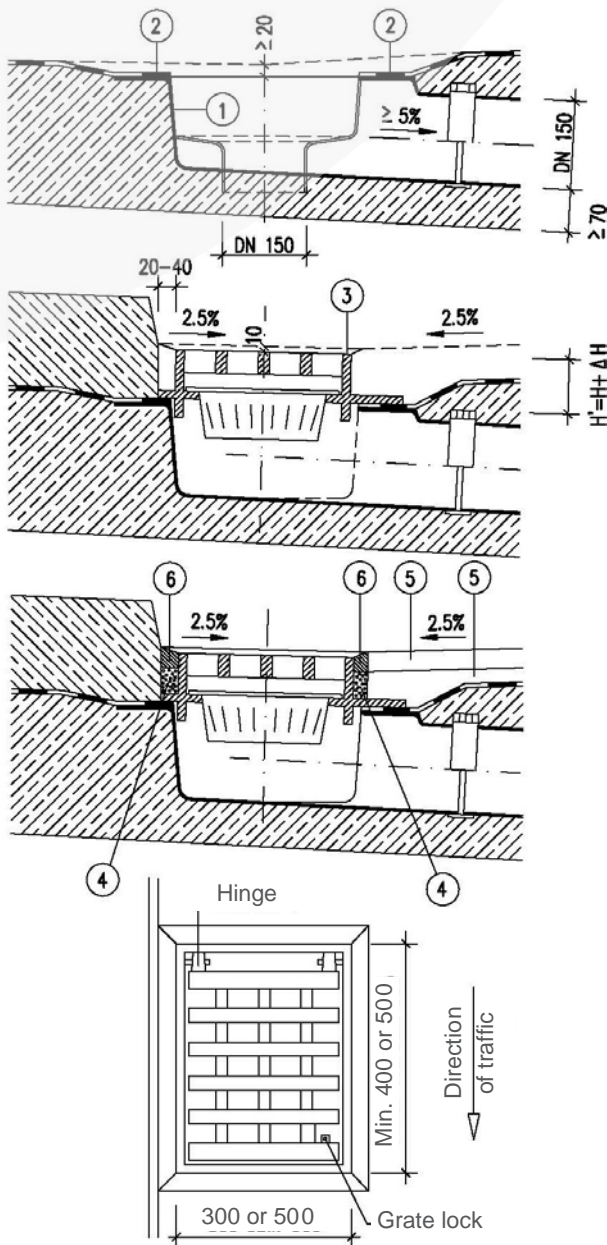
Article-No. 390910

"Multi-purpose" lift-out and
operating key

- galvanised
- Lift-out hook, lift-out shovel
- Square socket wrench
A/F 17 + A/F 22

Requirements and Installation Process according to WAS1 of the German Federal Highway Research Institute (bast)

Principle sketches



Installation process

The manufacturer's installation instructions are to be observed.

- ① Place bottom part with support on the formwork.
- ② Connect sealing layer in accordance with (Tight). (Compression sealing flange with $b \geq 70$ mm, adhesive flange with $b \geq 100$ mm, acc. to DIN EN 1253).
- ③ After production of the carriageway perimeter strip move top part (frame, grate) to scheduled height and inclination (10 mm below upper edge of surfacing) and hook in the mud trap. During (subsequent) adjustment of the height supporting of the top part over the full area is to be ensured.
- ④ Install filtering layer made of synthetic resin-bound single-grain concrete (8 – 16 mm) all around up to the upper edge of the protective layer.
- ⑤ Produce protective and covering layer.
- ⑥ Grout joints.

Process: Acc. to ZTV-ING 8-5 2, infinitely height-adjustable $\Delta H=0$ up to at least 45 mm, tilt and laterally adjustable as well rotatable.
Classification: Class D 400 acc. to DIN EN 124 and DIN 1229.
Fastening: By means of hinge and grate lock (secured).
Inlet cross-section: ≥ 500 cm² (grate size 300 x up to at least 400) $\geq 1,100$ cm² (grate size 500 x 500)
Drainage: From concrete surface, sealing and protection layers through lateral filtering openings.
Material: Grate made of spheroidal graphite cast iron, frame and bottom part of grey cast iron, mud trap made of steel (hot galvanised) with circumferential supporting collar and emergency overflow e.g. through drainage slits, elastic joint compound acc. to ZTV Fug-Stb.

German Federal Highway
Research Institute

bast

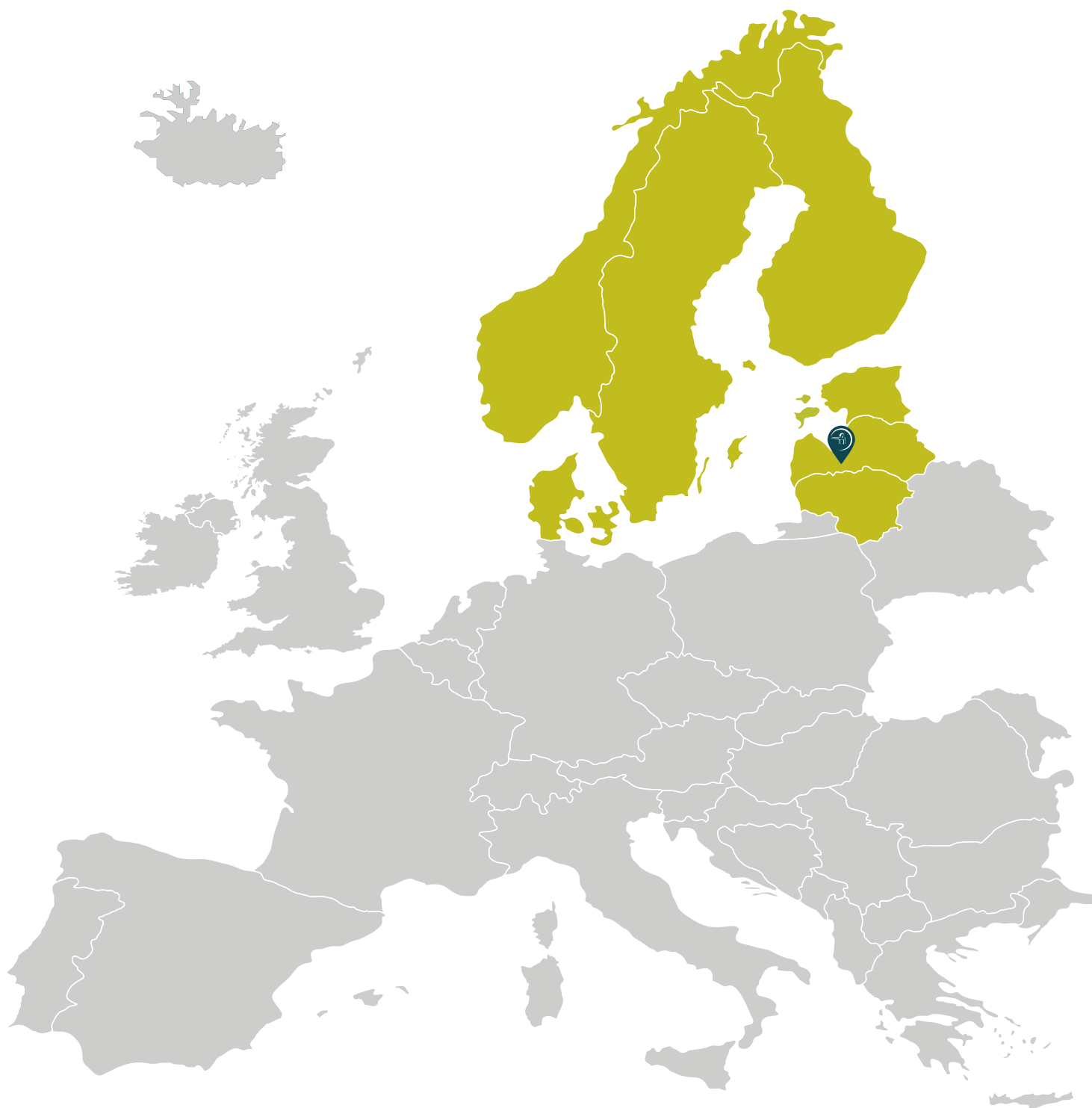
Bridge drain
Requirements and
installation processes

Specification drawing

Was 1

Dec. 2012

BRIDGE AND OVERPASS DRAINAGE SYSTEM SOLUTIONS



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