



ACO municipal

infrastructure solutions

manhole covers, gully grates



ACO manhole covers

Global freight transport has increased massively in recent years. As a result, the requirements for manhole covers continue to increase in almost all countries in the world. ACO Passavant Guss offers long-lasting manhole covers.

ACO Multitop - made in Germany



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Economical successful — professionally installed

Introduction to the ACO manhole cover systems

ACO offers three product families, each with special properties. Three systems with which we would like to best meet your individual expectations.

In addition to your own expectations, legal or normative requirements must also be observed in your country. These must be taken into account when making the selection. Our ACO staff will be happy to help you.

In the end, your investment will be economically successful if your manhole covers are stable and professionally installed for many years - and do not generate traffic noise.

ACO Passavant Guss has been supplying manhole covers for over 100 years. The production in Aarbergen - located between Frankfurt and Cologne - develops strong solutions for high loads and also offers inexpensive quality products.



Product range

In the range of ACO Passavant Guss GmbH you will find Multitop manhole covers in the uncompromising quality that you may be looking for. We also offer simple and heavy Classicstop manhole covers and innovative modern Citytop covers with different features for normal urban areas.

ACO Multitop

Sewer network operators have been very satisfied with this state-of-the-art product range for over 15 years.

With seven different frames, you have the opportunity - in the market place with paving stones as well as on the asphalt main street - to implement an attractive, uniform, noiseless, long-lasting design solution in your city.

ACO Multitop. Development, production and quality control

Made in Germany



ACO Citytop

ACO Citytop manhole covers have no machined contact surfaces in the lid and frame. The lids are made of ductile cast iron and are lighter than Multitop lids. The cushioning inserts are robust and changeable. ACO can also cast inscriptions and logos on Citytop.

Citytop – designed in Germany



ACO Classicstop BEGU

ACO Classicstop manhole covers are robust and heavy. The almost 90kg heavy covers made of gray cast iron and concrete offer a cushioning insert and fit in different frames.

Classicstop – designed in Germany



ACO Multitop

The professional solution for sewage systems

Product benefits

- Robust lid made of ductile cast iron EN GJS500-7
- load class D 400, EN 124-2 certified
- clear opening 600 mm
- Compatible system consisting of a lid and 7 frames
- machined contact surfaces in the lid
- machined contact surfaces in the frame under the inserts
- removeable, clipped damping inserts in the frame
- rattle-free design
- professional interlock system for lid/cover
- uncoated surface, non-slip (green)
- Bag for entry aid in the frame
- GET/RAL certified

optional:

- Lid with locking system
- Lid with minimum weight 44 kg
- Clear opening 520, 800 mm

Sewer network operators are familiar with the high renovation costs of clattering manhole covers. Incorrect installation or poor constructions can also cause manhole covers to sit several centimeters below the road surface. This causes costs and endangers traffic.

ACO has done a lot of research and development to find answers to this globally known, costly problem. The result is the Multitop range that is unique in quality and variety.

The key to success is really only the uncompromising commitment to quality in design and production, as well as the choice of materials used to produce an outstanding, useful manhole cover.

Multitop offers mechanically machined contact surfaces - in the lid and frame. This unique quality feature is reflected in the lowest complaint rate. In addition, the four-part, high-quality and very wide polychloroprene insert is fixed in the frame to prevent it from slipping and can be replaced without special tools.

ACO offers two high-end solutions for heavily used roads.
ACO Beguplan and ACO Bituplan

6



ACO Bituplan

Insert the frame in asphalt layers



ACO Beguplan

A massive frame - bigger and stronger than its shaft



Unique ACO quality

Contact surfaces in the frame and cover are machined. 100% fit is guaranteed even under the cushioning insert. The risk of rattling is significantly reduced by the highest level of perfection.



+ non-slip surface -
from all driving directions

+ 4 pockets for unlocking
the lid





+ pocket to insert the ACO step down bar.

+ Covers compatible with 8 different Multitop frames

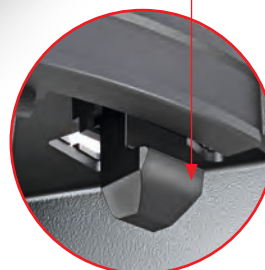


+ Quiet position of the lid due to damping inserts in the frame and machined contact surfaces



+ 4 high-quality, robust cushioning inserts. Interchangeable and fixed in the frame

+ quick and easy operation thanks to the medium-weight cover and maintenance-free, traffic-safe, high-quality plastic locks



+ Extra large ventilation openings for better ventilation of the shaft reduces corrosion

ACO Multitop Bituplan

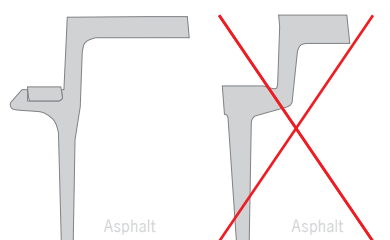
ACO Multitop manhole covers are integrated into the asphalt of the street. This system has advantages compared to systems that are placed on the shaft.

The installation takes place simultaneously with the compression of the top hot asphalt layer. As consequence the manhole cover remains in one level with the street.

The Bituplan frame with the flange on top is part of the road and has no contact with the shaft. As a result, only small traffic loads reach the shaft.

ACO Multitop Bituplan frames offer reliable and easy installation thanks to their simple L-shape. In comparison, frames with a stair-shaped outer contour are much more complicated to install.





optimal shape of
the frame
(ACO Multitop
Plus Bituplan)

high risk of
installation issues,
not recommended



Bituplan System

The Bituplan frame with the flange on top is installed in the top asphalt layer and decoupled from the shaft.

Traffic loads are therefore only transferred to the shaft to a small extent. Thanks to its symmetrical L-shape, the frame is perfectly matched to the installation.

The reusable formwork enables professional, homogeneous compaction of the asphalt around the manhole cover. After pulling out the formwork, the frame can be installed.

With frames with a stair-shaped outer contour, professional compaction is extremely difficult.



installation formwork
for Bituplan frames



High performance frame BEGU-Plan

The current situation:

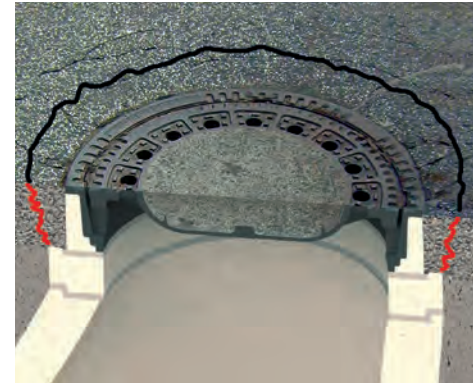
An important task in the construction and maintenance of roads is to meet increasing requirements and expectations.

From an economic point of view, the road should be viewed as an overall system. Perfect asphalt layers become expensive when renovation work is required after a short period of operation due to defective manhole covers.

The correct choice of covers and their proper installation are important for the long-term investment. Experience has shown that the joint between the shaft neck and cover is a weak point for experts.

The second big issue with conventional construction, the frame of the manhole cover is smaller in diameter than the manhole base. The worldwide known problem is directly connected to this: The road surface lies in the immediate area of the manhole covers on the concrete shaft. Compared to the road surface, the shaft is rigid, the surface vibrates noticeably when exposed to traffic and is considerably thinner in this essential area.

The result: expensive cracks around the manhole covers.



Cracks caused by vibrations on conventional manhole covers

The solution:

A large, massive footprint

The installation of Bituplan manhole covers (installation in asphalt) is often not the most economical way for thin asphalt layers or special asphalt.

Manhole covers with a large contact area are the alternative here. The pressure in the mortar between the frame and the shaft is significantly reduced - proportional to the size of the load contact area.

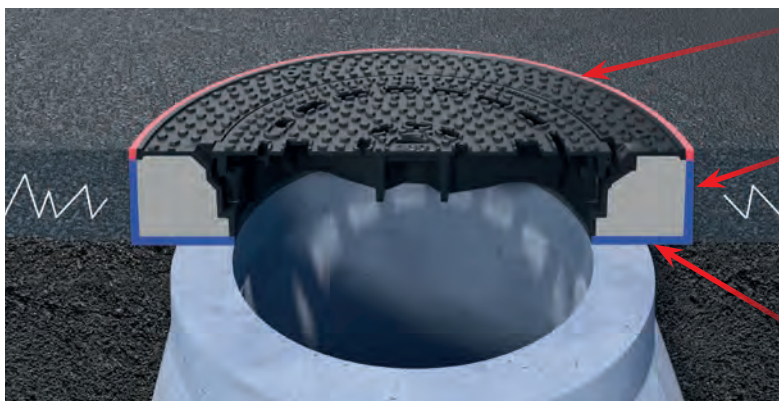
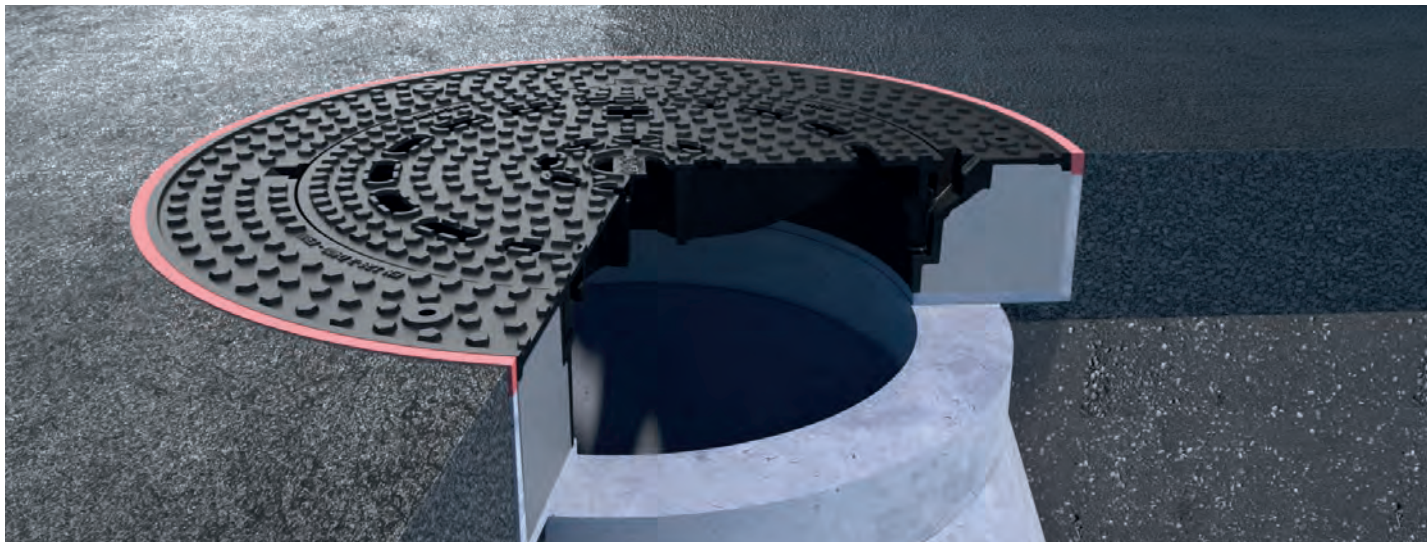
But in detail there are other positive effects:

The cover rests on a deeply built shaft structure. The road surface next to it vibrates relatively strongly horizontally when traffic is heavy. However, the asphalt no longer lies on the shaft as in conventional construction, but can move horizontally on the vertical outer surface of the frame without consequential damage. The connection joint is permanently elastic.



- + large frame:
960mm outside diameter
160mm height

✚ for permanent operational and traffic safety

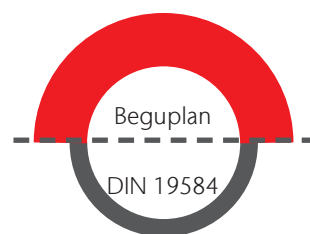
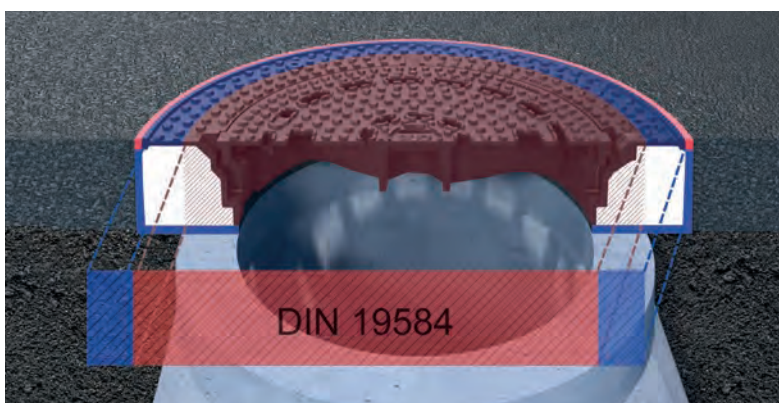


Permanently elastic joints avoid frost damage

Decoupling from the road surface

This prevents the formation of cracks in the road surface.

Less stress on the mortar joint



Surface pressure at Beguplan $0,96 \text{ N/mm}^2$

Surface pressure with normal frames

$2,26 - 7,5 \text{ N/mm}^2$

Shear loads

resulting from braking and acceleration forces are better distributed in the surrounding areas due to the larger frame diameter.

Design manhole covers from ACO

With design covers, ACO offers the option of customizing the surface of manhole covers with an inscription or a company logo. Send your request to our customer service.



High quality products – rusty !!!

ACO has been selling manhole covers in many markets without coating for decades. Corrosion only occurs on the surface of cast iron. The traffic creates a beautiful dark red patina within a few weeks.

The manhole cover remains protected – environmentally friendly – without black paint.

Note:

The following multitop manhole covers are always delivered in the standard version without painting = rusty.





Multitop flange frame h150

with ventilation: 210572
without ventilation: 210573



Multitop BEGU square frame

with ventilation: 210530
without ventilation: 210531



Multitop Bituplan h160

with ventilation: 210500
without ventilation: 210501



Multitop Bituplan h140

with ventilation: 210560
without ventilation: 210561



Multitop Beguplan

with ventilation: 1206071
without ventilation: 1206072



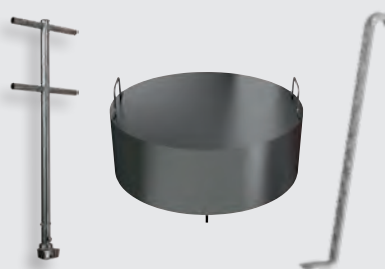
Multitop liftable

with ventilation: 210520
without ventilation: 210521



Multitop BEGU*

with ventilation: 210510
without ventilation: 210511



Accessories

entry facility tool: 1203121
installation shuttering: 64476
operating key :600643

*BEGU: frame is made of
cast iron and concrete



Heavy rain events overload the sewage system. Lids can be pressed out of the frame and washed away. The result is dangerous open shafts. ACO Multitop Bituplan S minimizes this risk.

ACO Multitop Bituplan S with hinge

The lid is connected to the frame by a hinge. When the water pressure is high, it opens in a controlled manner. When the pressure drops, it closes again. This significantly reduces the risk of accidents.

The proven screwless locking of the MultiTop manhole covers also ensures operational and traffic safety. Opened lids are secured against inadvertent closing. With a low lid weight of only 36/38 kg, the lids can be operated ergonomically.



Bituplan S 160
without ventilation: 210581
with ventilation: 210580

Bituplan S 140
without ventilation: 210591
with ventilation: 210590



www.aco-tiefbau.de/videos

The narrow and stable hinge is easy to clean and has no contact with the frame in closed position.



+ available with bituplan frame or standard frame

+ The narrow and stable hinge is easy to clean and has no contact with the frame in closed position.



the hinge

+ self - blocking at 90 degree
offers advanced safety
small dimension - easy to install

ACO Citytop

The economical solution

The Citytop series sets the standard for class D400 manhole covers. It is variable with many frame shapes and offers what you would expect from today's branded products. Citytop is designed in Germany. Production is strictly monitored by our manhole cover center in Aarbergen. Citytop PLUS is assembled and delivered here.

Lids are made with or without ventilation openings and there is also a round inlet grate with which particularly large areas can be drained.

In addition to multitop, use our Citytop Plus D400 series in urban infrastructure with normal requirements.



Citytop One S

Light. Inexpensive. Foldable.

In the 20th century, manhole covers were mostly 140-190 kg heavy (frame + cover). Today - despite a massive increase in traffic loads on our roads - manhole covers with a weight of less than 55 kg are available... Citytop ONE is a light, inexpensive lid with an elegant design - locked, black coated and ergonomic to open.

without ventilation: 1206877
with ventilation: 1207244

Product benefits

- lightweight lid made of ductile cast iron EN GJS500-7
- load class D400, EN124-2 certified
- clear opening 600mm
- damping insert in the lid
- interlock system for lid / cover
- black coated surface
- lid — minimum weight 31 kg
- turnbuckle lock optional



Citytop PLUS

ACO Passavant Guss in Aarbergen developed this range and ensures their quality. Citytop PLUS offers well-known brand quality at an attractive price.

With Citytop PLUS you use an excellent system of manhole covers for urban traffic areas. The shapely lid with a minimum weight of 40 kg and seven Citytop frames always offer you an attractive solution from the cobbled market place to the main street. Citytop Plus manhole covers are coated in black and offer a turnbuckle - locking option. The robust, interchangeable insert prevents metallic contact between the frame and the lid. All additional parts are interchangeable. You can also exchange standard covers for pretty customized lids with logos or inscription.

Product benefits

- robust lid made of ductile cast iron EN GJS500-7
- load class D 400, EN 124-2 certified
- clear opening 600 mm
- compatible system consisting of a lid and 7 frames
- robust removable damping insert in the frame
- interlock system for lid/cover
- Black coated surface
- lid — minimum weight 40 kg
- turnbuckle lock optional

optional:

- clear opening 273mm (CT315), 355mm (CT425), 462mm (CT500), 557mm (CT600)
- in B125/D400 and different frame types



Citytop PLUS 140 mm height



Citytop plus Fix
H: 100 mm, Ø: 780 mm

with ventilation: 1207254
without ventilation: 1207255



Citytop plus Fix
H: 100 mm, Ø: 850 mm

with ventilation: 1207256
without ventilation: 1207257



Citytop plus Fix
H: 75 mm, Ø: 780 mm

with ventilation: 1207252
without ventilation: 1207253



Citytop plus Fix
H: 125 mm, Ø: 850 mm

with ventilation: 1207258
without ventilation: 1207259



Citytop plus Bituplan
H: 140 mm

with ventilation: 1207266
without ventilation: 1207267



Citytop plus Bituplan
H: 160 mm

with ventilation: 1207268
without ventilation: 1207269



Citytop plus BEGU
H: 125 mm
with pockets for dirt buckets

with ventilation: 1207260
without ventilation: 1207261



Citytop plus BEGU
H: 125 mm
with continuous cush. insert

with ventilation: 1207262
without ventilation: 1207263



Citytop plus BEGU square
H: 125 mm
with continuous cush. insert

with ventilation: 1207264
without ventilation: 1207265

ACO Classictop

Heavy covers

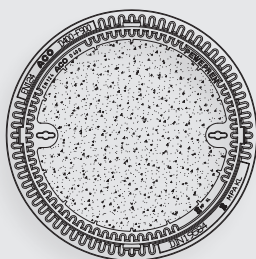
The Classictop series has been a success story of the ACO plant in Aarbergen for over 50 years.

Manhole covers made of gray cast iron and concrete (BEGU) are still a standard in Germany and many other countries. They are solid, inexpensive and reliable.

Product benefits

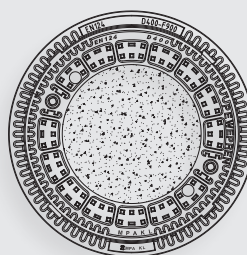
- Heavy lid made of grey cast iron (and concrete)
- damping insert in the lid
- EN 124-2 certified





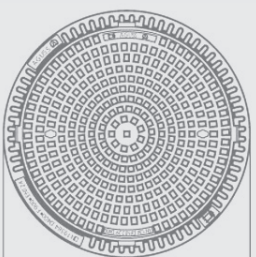
D400, CO 610 mm, h 160 mm
BEGU cover, BEGU frame

with ventilation: 4000.11
without ventilation: 4000.21



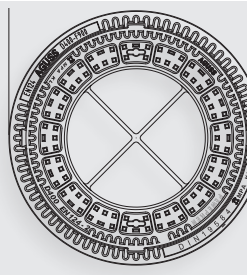
D400, CO 605 mm, h 160 mm
2 bolt locking

with ventilation: 4000.15
without ventilation: 4000.25



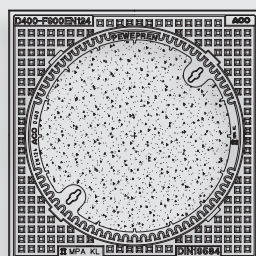
D400, CO 610 mm, h 160 mm
cast iron cover, BEGU frame

with ventilation: 4000.31
without ventilation: 4000.41



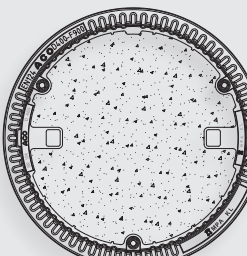
D400, CO 610 mm, h 160 mm
cover for optional surface

with ventilation: 4009.11
without ventilation: 4009.21



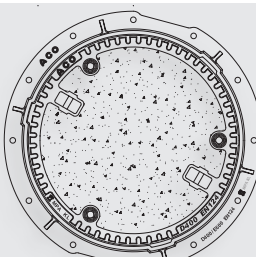
D400, CO 610 mm, h 160 mm
BEGU cover, square BEGU frame

with ventilation: 4002.11
without ventilation: 4002.21



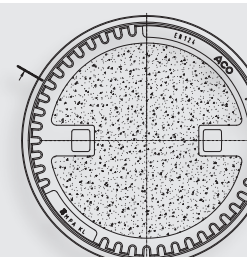
D400, CO 610 mm, h 160 mm
surface water tight

art. no.: 4348.90



D400, CO 610 mm, h 160 mm
backflow safe, surface water tight

art. no.: 4348.85



D400, CO 450 mm, h 180 mm
sand sealing

art. no.: 602859

ACO Special Products

ACO offers thousands of different manhole covers for many applications - from sidewalks to airports. In urban infrastructure, manhole covers with larger clear widths or screwed lids or tight against ingress of water are sometimes required.



Please ask our customer service for the right solution and the right installation for your project

ACO manhole cover for flood protection

We are currently seeing an increase in extreme weather events. The consequences are often rising water levels in the drainage infrastructure during heavy rain events. When critical water levels are reached, the sewage system is secured against the ingress of river water by closing flood valves.

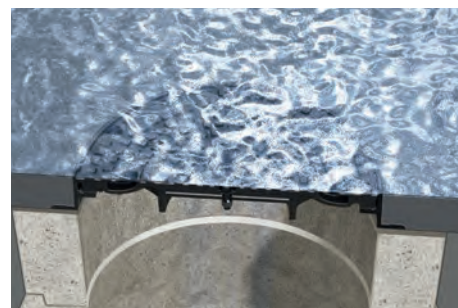
Current situation

Large amounts of water can penetrate the overloaded pipelines through the ventilation openings of manhole covers. In the worst case, water penetrates into the basement via house connections.

The solution

ACO flood protection covers are specially designed for such applications. They are suitable for class D 400 installation areas in accordance with EN 124 and have central ventilation holes. They can be opened and closed quickly and easily manually. The penetration of water is reduced enormously.

A seal between the cover and frame prevents water from penetrating through the joint. The lid is secured in the frame with screws.



art. no.

600 mm: 1206385
800 mm: 1206409



Closing of the ventilation openings

with key (art. no.: 85518)
by turning until it stops (clockwise)

ACO Multitop

watertight and backflow safe covers

Due to the local situation, covers are often required that are both - watertight and backflow-proof. The Multitop 'rss / twd' manhole cover is characterized by user-friendly and low-maintenance technology.

Surface Waterproof

Surface watertight manhole covers (twd) class D 400 prevent surface water from entering without pressure. These covers should prevent / reduce moisture ingress.

Secure against backflow

Backwater-proof class D 400 manhole covers used in flood areas are tight against pressurized water from below and from above. The tightness is achieved by a seal between the frame and lid. The lid is secured by screws. The shaft / cover connection must be carried out with particular care. The frame must be anchored to the concrete shaft in accordance with the pressure that occurs.

Installation and maintenance

Waterproof manhole covers should be installed slightly elevated. As a result, as little water as possible remains on the lid.

Seals must be regularly serviced, cleaned and, if necessary, replaced.

The locking of the cover engages under the contact surface in the frame. By screwing the cover is pulled down into the seal. This does not reduce the clear opening of the frame.



620 mm clear opening
watertight
art. no.: 604491



620 mm clear opening
watertight, backflow-safe
art. no. h 100: 603959
art. no. h 125: 603956

25



800 mm clear opening
watertight, backflow-safe
art. no.: 607178

Gully Grates – Introduction to the system

Three systems for the drainage of urban streets offer a variety of ways to drain rainwater safely and reliably. The frames are installed on concrete parts or on the light and tight ACO Combipoint rainwater shafts. The multitop series also offers top performance in design and function. In par-

ticular, the robust cushioning inserts ensure long-lasting noiseless usage.

ACO offers many concave designs (channel shape) for drainage in the middle of the lane.

Municipal roads

Motorways

Car parks

Pedestrian areas

Mountain roads



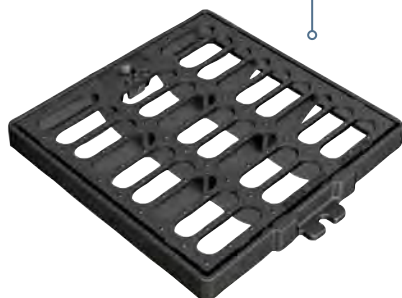
Allrounder

Multitop for almost all applications, thanks to the special slot geometry also suitable for pedestrian areas.



HighDrain Gully Tops

are locked by spring bar, easy to handle and install.



BEGU Standard

gully tops with heavy weight and a cushioning insert



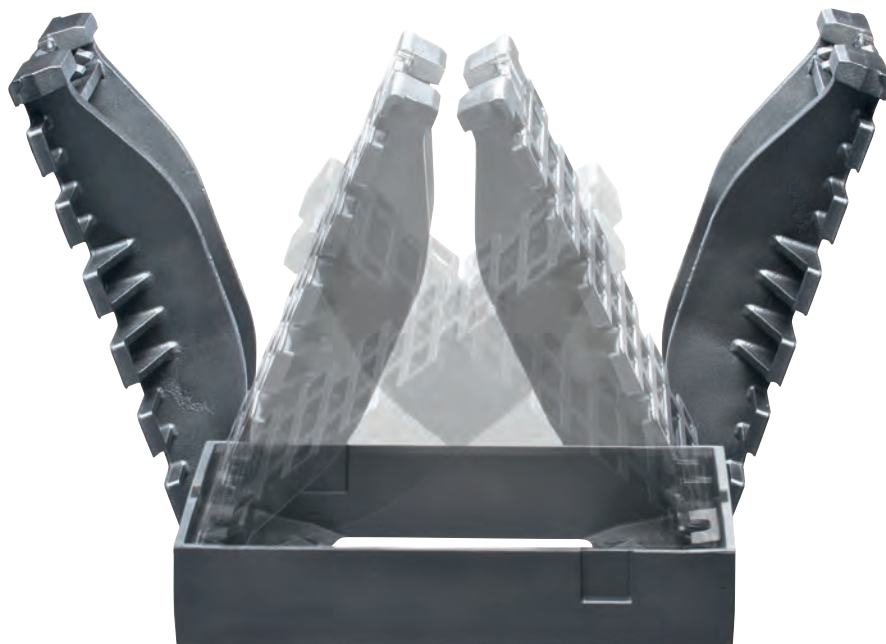
particularly high performance

With a total length of 800 mm and optimized bars this gutter is perfect for mountain roads.



Gully Grates — ACO Multitop

The multitop series offers gully tops with external dimensions 300/500 and 500 / 500mm - flat or concave. A dirt bucket can be used in the frame to collect leaves and dirt from the street. The grids have a modern design and can be opened in both directions. They are locked in place with a solid plastic latch and lie on solid, cushioning polychloroprene inserts.



Double hinge

To protect against vandalism or unauthorized removal, attachments with a hinge and screw connection are often used. These are installed so that open grids close in the direction of travel. Multitop attachments avoid installation errors - they can be opened in both directions and offer screwless locking.



Screwless locking

The screwless, traffic-safe locking secures the gully against vandalism, but at the same time enables easy handling and maintenance.

Dirt bucket

Drainage during construction. Part of the frame can be opened so that the asphalt surface can be drained.



Blocking made of highly wear-resistant plastic

The multifunctional, dirt-resistant and unbreakable double hinge enables quick and easy opening - regardless of the direction of travel. In addition, the grate can be completely removed by lifting it vertically.



Multitop 300 x 500
desk shape

C 250: 89401
D 400: 89405



Multitop 300 x 500
channel shape

C 250: 89402
D 400: 89406



Multitop 500 x 500
desk shape

C 250: 89403
D 400: 89407



Multitop 500 x 500
channel shape

C 250: 89404
D 400: 89408

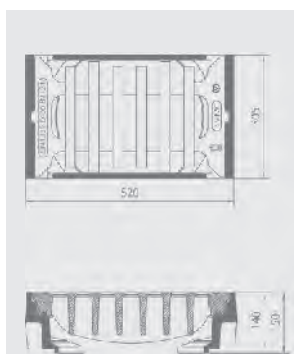


ACO BEGU Standard

BEGU Standard gully tops are available in sizes 300/500 mm and 500/500 mm (outside diameter) - class D400 and C250.

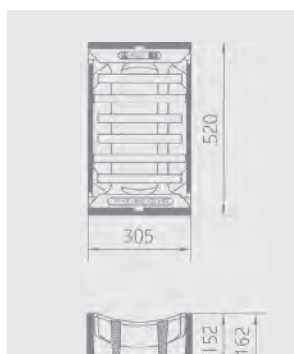
Further versions with a pedestrian area friendly design in 16mm slots are also as in-stock product available in flat or concave designs.

Dirt baskets (galvanized steel) are available from retailers as accessories for these gullytops.



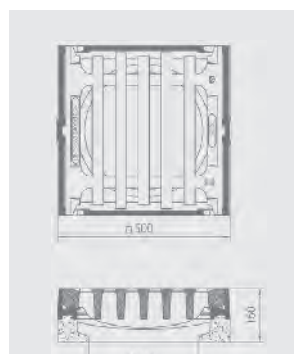
BEGU 300x500 desk shape

C 250: 4720.10.00
D 400: 4720.50.00



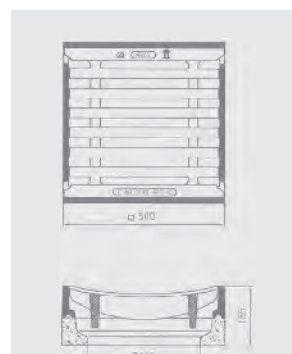
BEGU 300x500 channel shape

C 250: 4721.10.00
D 400: 4721.50.00



BEGU 500x500 desk shape

C 250: 4708.10.00
D 400: 4728.10.00



BEGU 500x500 channel shape

C 250: 4709.10.00
D 400: 4729.10.00



BEGU 500x500 desk shape

ACO Highdrain

Highdrain gully tops are available in sizes 400mm and 500mm - class D400 and C250. They offer an integrated lock made of plastic and can be unlocked with a tool via a small pocket opposite the hinge area.

Optionally a screw connection can be installed.



Highdrain 400 x 400, C 250

uncoated: 1015540
coated: 1201214



Highdrain 400 x 400, D 400

uncoated: 1203126
coated: 1203127



Highdrain 500 x 500, C 250

uncoated: 1202889
coated: 1202890



Highdrain 500 x 500, D 400

uncoated: 1202892
coated: 1202893



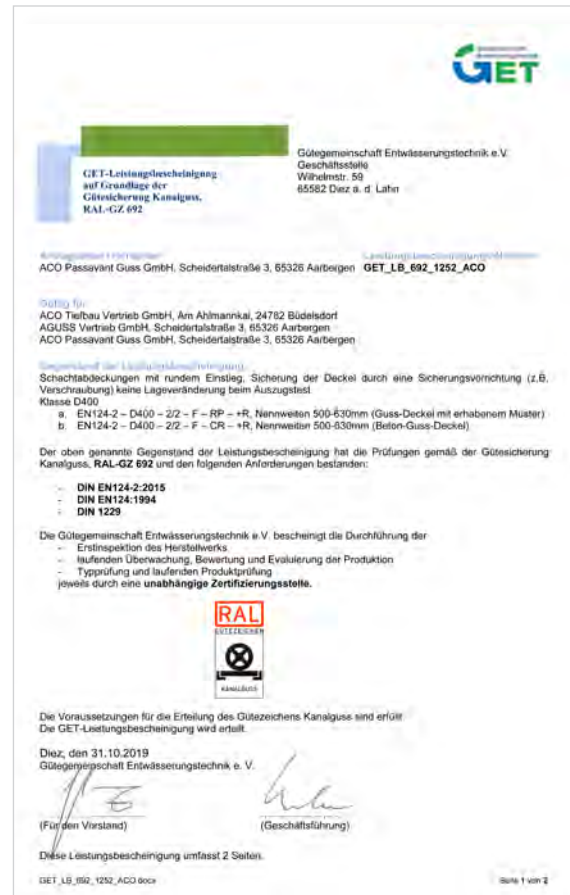
Quality association for drainage technology

ACO is a member of the GET (Gütegemeinschaft Entwässerungstechnik = quality association for drainage technology). Through GET, the 'ACO Passavant Guss GmbH' as manufacturer for the companies of the ACO Group was awarded the quality mark GZ-692 for the manhole covers and gully tops.

The GET has now been a 'RAL' quality association since 2011.

With RAL quality requirements for sewer casting, separator systems and building drainage, GET defines and monitors quality standards that go far beyond European standards and are only met by the best in the industry.

Careful use of resources, security of disposal, avoidance of residues as well as future-oriented production methods and short distances are also the cornerstones of an environmental management system according to DIN EN ISO 14001 - to which the members of the "GET manhole covers" department have long been committed



Certificates



ACO Passavant Guss GmbH is certified according to ISO 9001, ISO 50001, ISO 14001



Further ACO products for use in urban infrastructure

Combipoint PP modular rainwater shafts

Light PP rainwater shafts offer cost advantages as they significantly reduce installation time and do not require heavy lifting equipment. The modular parts can be combined in short or long systems according to your needs.



Bridge Gullies – Multitop, HSD-2, HSD-5

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Solutions for new bridge construction and refurbishment. They are designed for steel-, reinforced concrete or ballast bridges. The rapid drainage of bridges and the watertight installation of the bridge drains is important to ensure safety in traffic and a long durability of the bridge structure. Ask the experts at ACO Passavant Guss for the right solution.



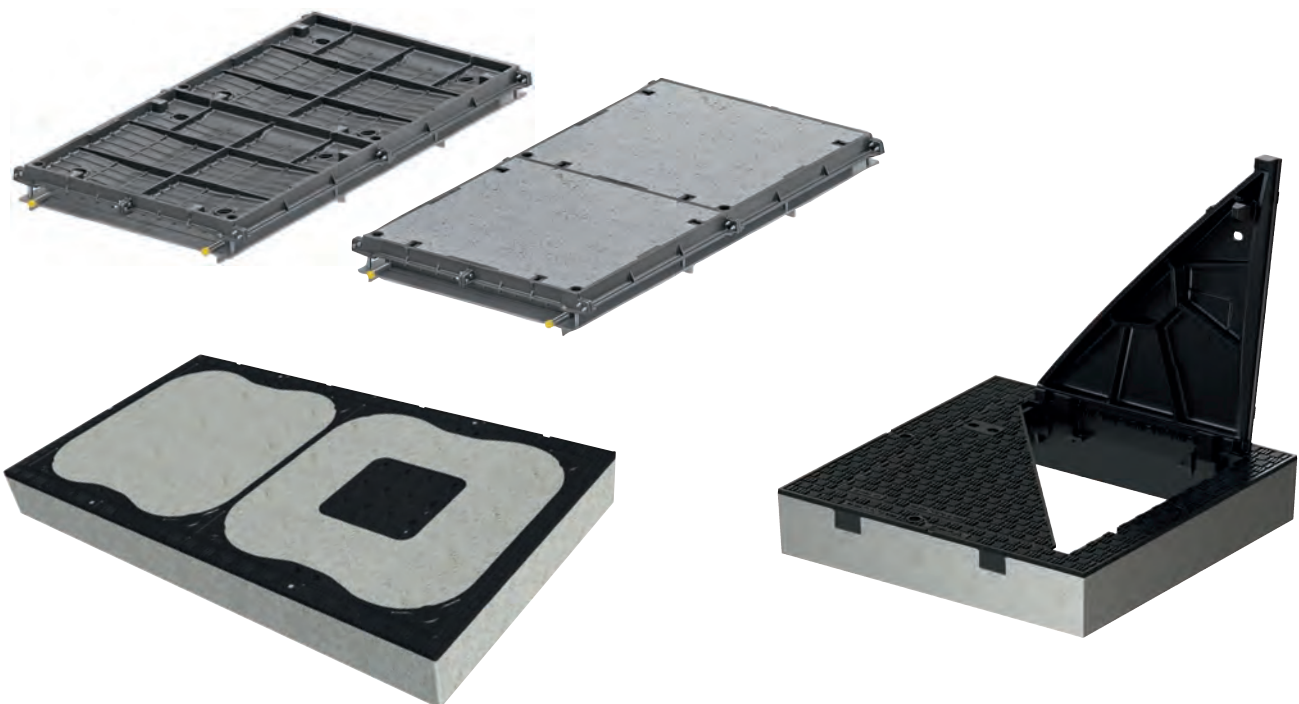
Tree grilles and guards

ACO offers attractive tree grates. With the modular system WOTAN we combine the tree grate parts in your specific size - optionally with irrigation cover and tree guard.



Square covers – Trigona, Secant and Servokat B125-D400 (F900)

Clear opening 45 cm x 60 cm or 85 cm x 3,50 m? Solid top surface or concreted? Waterproof or gas assisted with opening aid? ACO has a variety of solutions for large shafts in sidewalks, streets, on sewage treatment plants as well as for telecommunications and cable ducts.



Every ACO product supports
the ACO system chain



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- Drainage channels
 - Road and yard drains
 - Gully tops
 - Manhole covers
 - Rainwater treatment
 - Infiltration and attenuation
 - Pump shafts
 - Flow control systems
 - Tree protection
 - Amphibian protection
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**ACO. creating
the future of drainage**

