

# Safe drainage of parking and driving areas

ACO Multi-storey car park drainage

ACO. creating

the future of drainage

## The worldwide ACO Group. A strong family you can build on.

The ACO Group is one of the global market leaders in the drainage technology sector. Climate change challenges us to come up with innovative solutions in response to new environmental influences. ACO adopts an integrated approach and focuses on professional drainage, profitable cleaning and the controlled discharge or reuse of water. The company's products comprise drainage channels and gullies, petrol and grease separating systems, back flow systems and pumps as well as pressurised watertight basement and cellar windows and light shafts.

The family company, which is based in Rendsburg/ Büdelsdorf, was founded on the grounds of the Carlshütte, the first industrial company in Schleswig-Holstein, in 1946. The ACO Group's innovation capability is the result of intensive research and development and expertise in the processing of polymer concrete, plastic, cast iron, stainless steel and reinforced concrete.

## ACO Building Drainage. Building safety - from the tender to the service

We are your expert in all technical and planning matters for drainage solutions in buildings. With experience and passion, we will find the most rational and economical solution for you which meets all professional and standard requirements.

Whether for residential or industrial construction, hospitals, hotels or parking buildings: we provide tailor-made advice - both in the design and for special channels and connections to the floor sealing systems. If necessary, we will calculate the vacuum drainage and assist you in the selection and configuration of the products.

**[www.aco-haustechnik.de](http://www.aco-haustechnik.de)**



# Quality that pays off

## Permanently protect and preserve building fabric

Parking buildings and associated parking and driving areas as well as entrances and exits, ramps and spiral ramps are exposed to permanent, heavy use due to moisture and snow. Rainwater, water from cars and meltwater as well as de-icing salts cause considerable stress to the building fabric and can damage it permanently. At the same time, particularly high demands are placed on these structures in terms of both proper and economical use. In this context, well-functioning drainage plays an important role. Both the drainage system and the connection to the surface protection system must fulfil numerous criteria:

1. Resistance to mechanical and chemical stresses from road traffic
2. Secure, permanent sealing even around the connection area
3. Visible connection to enable a regular and proper check of the watertightness

ACO has developed an optimal solution to protect indoor and outdoor multi-storey car parks safely and permanently against moisture, so that they are therefore resistant to mechanical, chemical and weather-related influences. Properly sealed, the maintenance interval is noticeably extended and the building fabric is preserved over the long term. The flange width of 10 cm required by DIN 18532 eliminates critical transition areas and significantly increases protection in these sensitive areas.

### Areas of use:

- Top and inner decks
- Underground car parks
- Ramps
- Spiral ramps
- Entrance and exit areas



# For safe drainage

## The advantages of our multi-storey car park channels

### Load class M125

Multi-storey car park channels from ACO can withstand any load. Ever larger and heavier vehicles pose new challenges for drainage. The stainless steel multi-storey car park channels are exceptionally resilient and can withstand extreme loads up to M 125.

### Low installation height of 40 mm

The multi-storey car park channels have an installation height of only 40 mm from the bottom of the channel to the flange and are therefore ideally suited for renovations and the construction of new multi-storey car parks. For ramp drainage, the multi-storey car park channel can be manufactured with a width of 200 mm up to an installation height of 150 mm, so that effective and safe drainage is also guaranteed in this area of use.

### Variable length

The ACO parking building channels can be manufactured in variable lengths of up to 6 m. If channel lengths greater than 6 m are required, these can be fitted with a connection flange.

### Optimum connection

All channels have a circumferential anchor element on the flange. This ensures the optimum connection from the channel to the floor covering.

### Condensation and salt water resistant

The stainless steel material is of a high quality and is highly resistant to water that contains chloride and ensures that the channels are durable. The parking building channels are also available in stainless steel 1.4301 and 1.4404.

### Fire protection

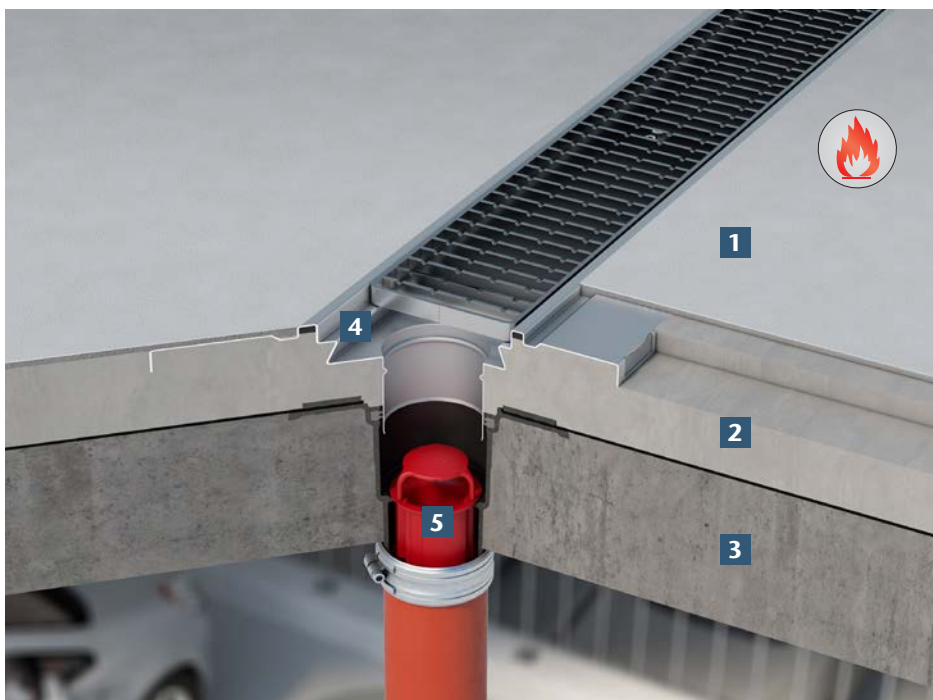
Stainless steel corresponds to building material class A1 and therefore does not introduce any additional fire load into the building. If fire protection is required, then the channel can be installed in conjunction with the Passavant flat roof gully and the fire protection cartridge. The tested fire protection insert complies with fire resistance classes R30 to R120 (general type approval Z-19.53-2439).

### Waterproofing standard DIN 18532

The optimised flange widths of 100 mm meet the requirements of the new DIN 18532 sealing standard for sealing liquid plastics.

## Installation - ACO Parking Building

4



- 1 Surface protection system
- 2 Concrete/screed
- 3 Unfinished concrete floor
- 4 ACO Multi-storey car park channel
- 5 Fire protection insert

ACO multi-storey car park channel with stainless steel grating and connection to the Passavant Spin in cast iron

## The right channel for every kind of use

### Ramp drainage

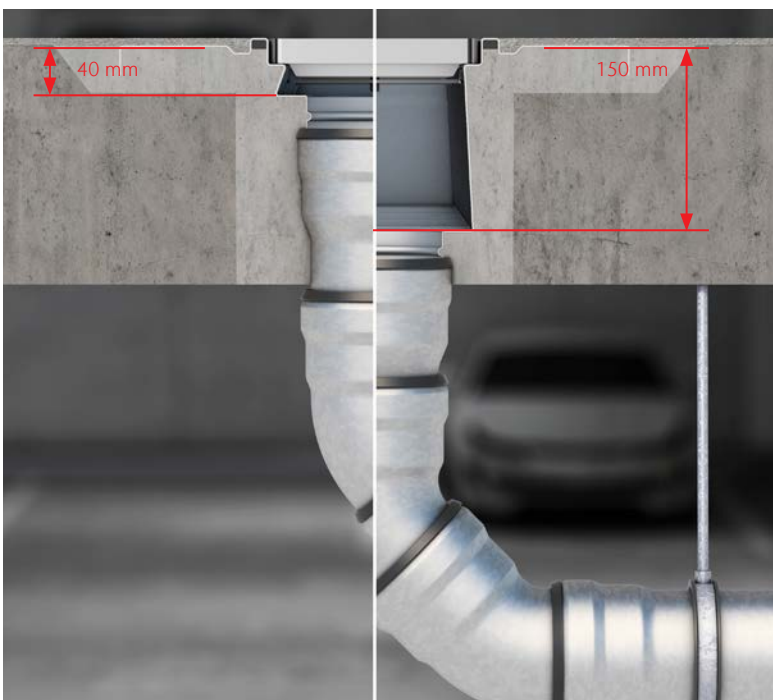
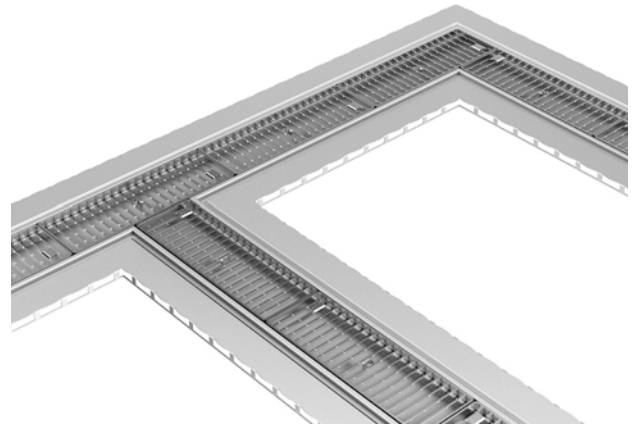
The new multi-storey car park channel 200 can be flexibly installed at heights of up to 150 mm from the channel base to the flange. With a channel width of up to 200 mm and a depth of approx. 150 mm, it takes into account the requirements stipulated in the DBV data sheet on multi-storey car parks and underground car parks.

Thanks to the channel width of 200 mm and the sufficiently large slot width on the ACO grating in conjunction with the channel depth, the rainwater that accumulates at the foot of the ramp can be drained without any problems.



### ACO Multi-storey car park channels 156 and 200 also available with branch and angle available

An important point in the planning and execution of the multi-storey car park channel is the respective installation situations in the multi-storey or underground car park. In order to be able to offer even greater flexibility, the new ACO multi-storey car park channel 156 and the ACO multi-storey car park channel 200 are now available with a branch and angle. The measurement sheet for planning the multi-storey car park channel can be downloaded from the download area of the ACO Building Drainage online catalogue (<https://www.aco-haustechnik.de/>)



The ACO multi-storey car park channel 200 with grating (see p. 6) can be manufactured with a channel height of 40 mm to 150 mm depending on the required installation situation. Safe drainage is ensured with the channel height of 150 mm at the foot of the ramp and the requirements of the DBV leaflet on multi-storey and underground car parks are taken into account.

# ACO Multi-storey car park channel

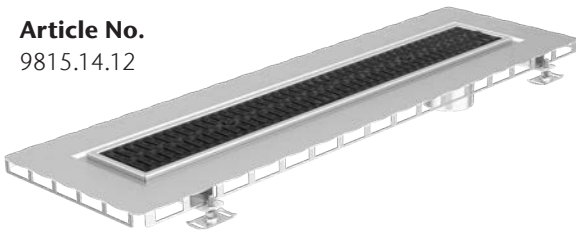
Multi-storey car park channels drain dirty water and rainwater from parking areas into the drainage pipe without any risk to people or structures. First and foremost, the installation location determines which type of multi-storey car park channel has to be chosen. ACO multi-storey car park channels handle considerable amounts of water reliably

and can easily cope with the strain of rainwater and snow accumulating on cars and in wheel housings. In conjunction with surface protection systems/liquid waterproofing for parking decks and underground garages, an optimum connection with the ACO multi-storey car park channel is achieved.

## ACO Multi-storey car park channel 156 mm\*

- with flange in accordance with DIN 18532
- for liquid plastic waterproofing
- Connection port 110 mm, lateral
- Channel lengths up to 6 m, special lengths > 6 m with flange connection possible

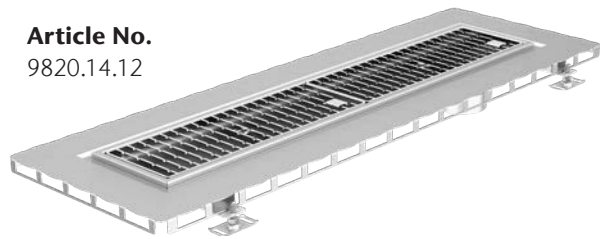
**Article No.**  
9815.14.12



## ACO Multi-storey car park channel 200 mm\*

- with flange in accordance with DIN 18532
- for liquid plastic waterproofing
- Connection port 110 mm, lateral
- Channel lengths up to 6 m, special lengths > 6 m with flange connection possible

**Article No.**  
9820.14.12



- for mastic asphalt/ wear layer
- Connection port 110 mm, lateral
- Channel lengths up to 6 m, special lengths > 6 m with flange connection possible

**Article No.**  
9815.14.14



- for mastic asphalt/ wear layer
- Connection port 110 mm, lateral
- Channel lengths up to 6 m, special lengths > 6 m with flange connection possible

**Article No.**  
9820.14.14



### ACO Product information

- Stainless steel channel
- incl. composite grating made of plastic, load class M 125, anti-slip
- Gratings locked
- Channel with levelling bases
- low installation height of 40 mm
- Available with optional fire protection insert, for 2-part construction with Passavant Spin roof gully

### ACO Product information

- Stainless steel channel
- Building material class A1, non-flammable
- incl. stainless steel grating, load class M 125, slip-resistant
- Gratings locked
- Channel with levelling bases
- low installation height of 40 mm
- Available with optional fire protection insert, adjustable up to 150 mm for 2-part

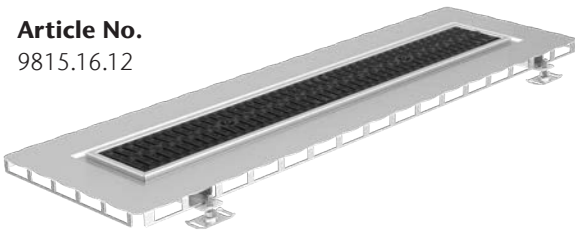
\* The article numbers refer to the standard length of 1 m.



## ACO Evaporation Channel 156 mm\*

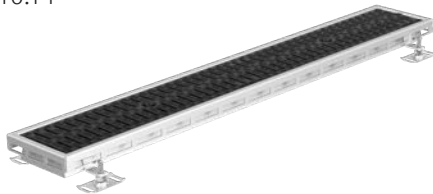
- for use with low water volume
- with flange in accordance with DIN 18532
- for liquid plastic waterproofing
- Channel lengths up to 6 m, special lengths > 6 m with flange connection possible

**Article No.**  
9815.16.12



- for mastic asphalt/ wear layer
- Channel lengths up to 6 m, special lengths > 6 m with flange connection possible

**Article No.**  
9815.16.14



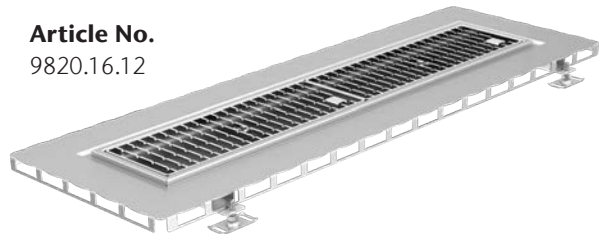
### ACO Product information

- Stainless steel channel
- incl. composite grating made of plastic, load class M 125, anti-slip
- Gratings locked
- Channel with levelling bases
- low installation height of 40 mm

## ACO Evaporation channel 200 mm\*

- for use with low water volume
- with flange in accordance with DIN 18532
- for liquid plastic waterproofing
- Channel lengths up to 6 m, special lengths > 6 m with flange connection possible

**Article No.**  
9820.16.12



- for mastic asphalt/ wear layer
- Channel lengths up to 6 m, special lengths > 6 m with flange connection possible

**Article No.**  
9820.16.14

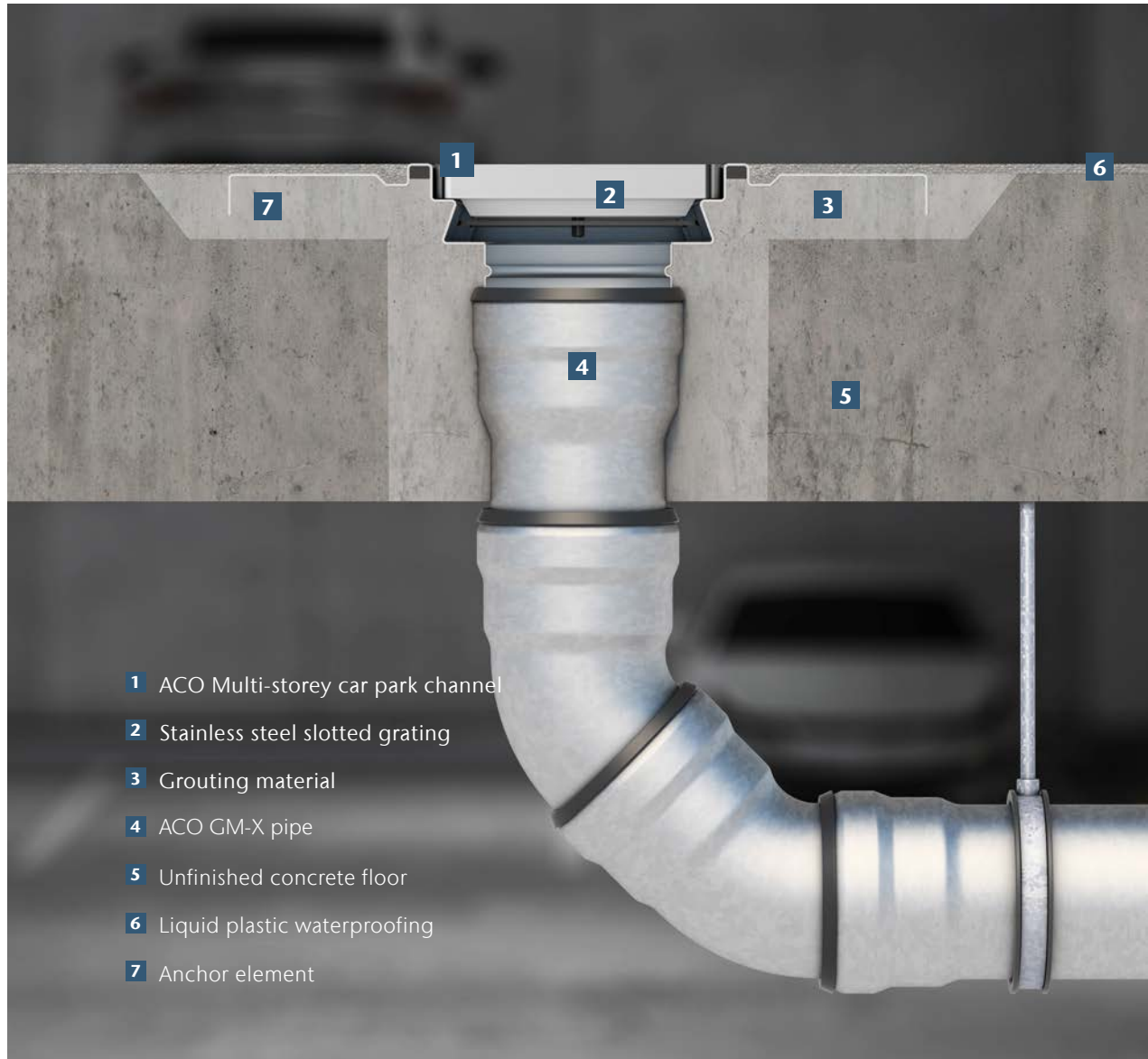


### ACO Product information

- Stainless steel channel
- Building material class A1, non-flammable
- incl. stainless steel grating, load class M 125, slip-resistant
- Gratings locked
- Channel with levelling bases
- low installation height of 40 mm

\* The article numbers refer to the standard length of 1 m.

## ACO stainless steel multi-storey car park channel with flange for liquid plastic waterproofing

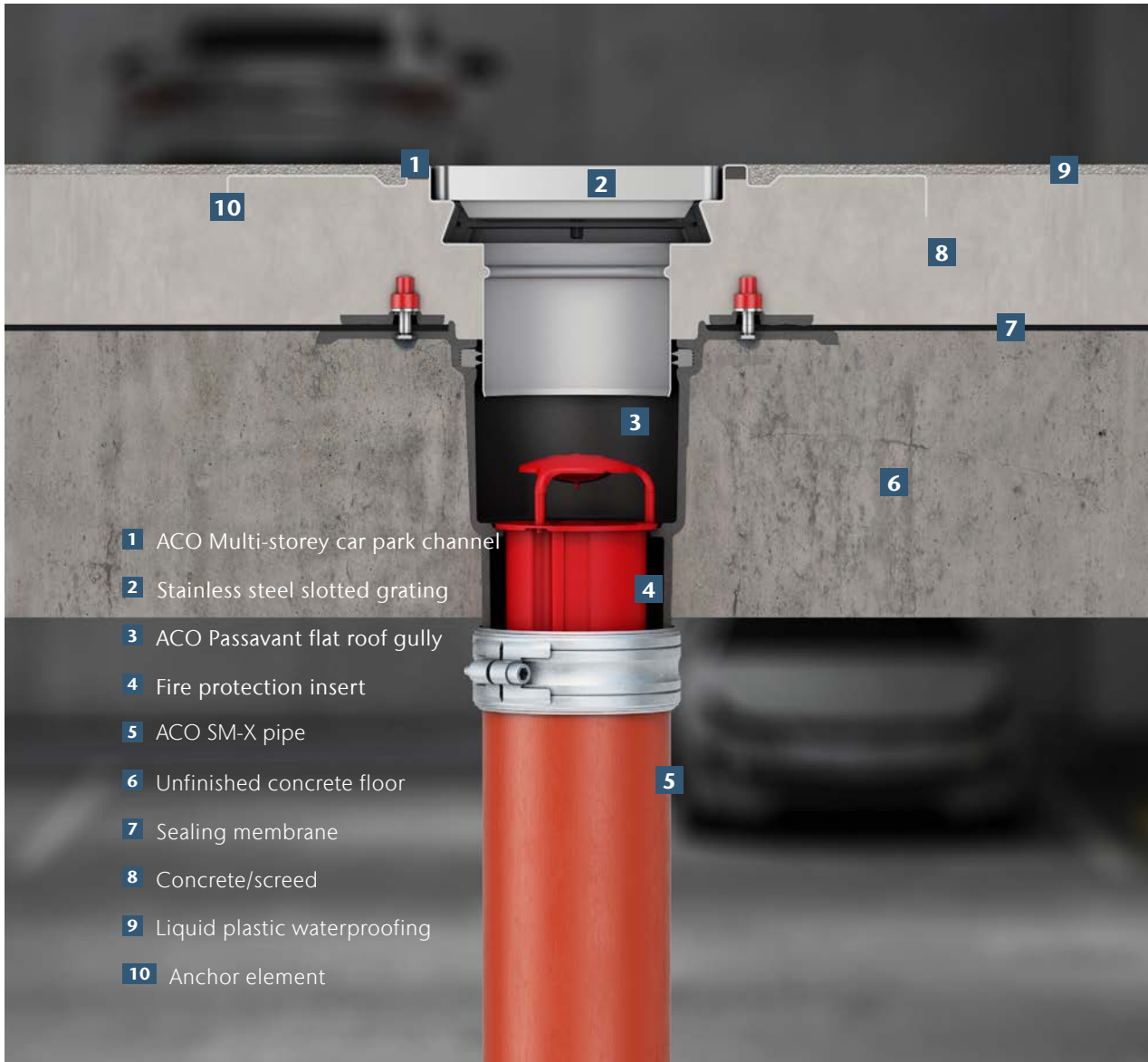


The ACO Multi-storey car park channel was specially developed for use in multi-storey car parks and underground garages. The flange width of 100 mm required by DIN 18532 for liquid plastic coatings was incorporated into the multi-storey car park channel with circumferential flange, so that an optimum connection between the multi-storey car park channel and the surface coating can be achieved in this area.

Due to the low installation height of only 40 mm, the ACO Multi-storey car park channel is excellently suited for renovations as well as new constructions while at the same time offering a high load-bearing capacity of the channel (M 125). The ACO GM-X pipe can be connected directly to the channel spigot and the recess can then be quickly and easily filled with grouting material. The circumferential anchor element ensures that there is an optimum connection between the channel and the concrete slab.



## ACO stainless steel multi-storey car park channel with grating and fire protection insert



If a second sealing level is required, the Passavant flat roof gully can be installed in conjunction with the multi-storey car park channel as the top section. The sealing membrane is clamped into the clamping flange of the Passavant flat roof gully. The connection port of the multi-storey car park channel is inserted into the Passavant flat roof gully and the height is adjusted with the height adjustment feet of the multi-storey car

park channel is sealed against backwater thanks to the lip seal ring inserted in the Passavant flat roof gully from the accessories range. If additional fire protection is required, the fire protection insert can be inserted into the Passavant flat roof gully through the connection pipe of the multi-storey car park channel. The tested fire protection insert complies with fire resistance classes R30 to R120 (general type approval Z-19.53-2439).

# ACO Parking deck gully

The Passavant parking deck gullies from ACO are compact and yet can withstand extreme conditions.

The well-structured range meets current and future requirements and offers a wide variety of solutions thanks to its modular system. In short: powerful down to the last detail.

## Guaranteed fire protection

### **Cast iron is non-flammable – Building Material Class A1**

The choice of material reflects the usability of the drains for the highest requirements. Cast iron complies with building material class A1 and therefore does not introduce any additional fire load into the building.



### **Integrated fire protection without additional time and effort**

Ready for immediate use: With a melting point of 1150 °C, the recyclable cast iron material is non-flammable. Apart from inserting the fire protection insert, no further fire protection measures are necessary.



### **Smoke stop function for maximum safety**

No compromises: Our tested fire protection inserts ranging from fire resistance classes R30 to R120 ensure maximum safety. In addition, an integrated smoke stop prevents the spread of smoke until the fire protection insert is fully activated.

**Can withstand extreme traffic loads**

Come what may: ACO parking deck gullies can withstand any load. The trend towards ever larger and heavier vehicles poses new challenges for drainage components. Cast iron has an extraordinary compressive strength and can easily withstand extreme stress.

**Resistant to condensation and salt water**

A nuisance: In winter, salt water and gritting agents damage the building fabric. The high robustness and durable resistance of Passavant parking deck gullies help to counteract this. Even sunlight leaves the UV-resistant drains cold, allowing them to perform flawlessly even on open parking decks.

**Similar expansion coefficient to concrete**

Strong partners: Thanks to a similar thermal coefficient of linear expansion, our cast iron drains also fit perfectly into the concrete even when the temperature changes, thereby eliminating stress-related cracks in the construction.



## Lifelong robustness

**Permanent maintenance-friendly and vandal proof**

Maintenance made easy: According to the flat roof guidelines, gullies must be cleaned at least twice a year. The standard bolt-on gratings can be easily removed for maintenance work. This makes the sludge bucket and fire protection insert easily accessible for cleaning work. The locked gratings also offer a high level of protection against vandalism. The gratings can alternatively be loosely inserted in non-public car parks.



## Flexible floor connection

### Intelligent height adjustment

Height compensation is particularly important for block paving surfaces. The ACO Passavant parking deck gully intelligently adapts to any surface height. Using a simple turning mechanism, the top frame can be adjusted in steps of 5 mm to the desired height. From an adjustment height of 20 mm, two height adjustment rings offer additional adjustment options. The form-fitting support of the components creates a safe transmission of force - i.e. the grating does not sag.



### Whether industrial coating, block paving surface or mastic asphalt

Flexible planning: The flange widths meet the requirements of the new waterproofing standard DIN 18532 for sealing with liquid plastics. The round versions of the gullies also make the connection even easier. Unlike plastic gullies, cast iron parking deck gullies can be directly incorporated into mastic asphalt.



## Compact design

### Compact dimensions and weight

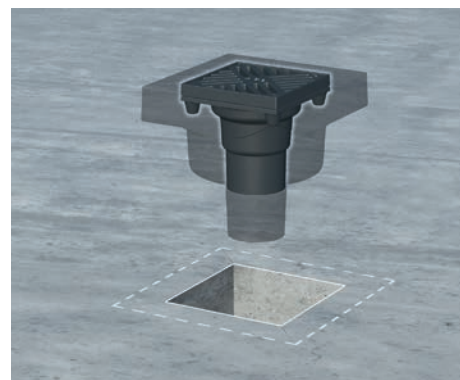
Small but mighty: The new ACO cast iron parking deck gullies are compact and robust at the same time. Not only has the product range become much leaner, but also the individual gullies, with a weight starting at 7 kg. This is demonstrated, among other things, by the small recess dimensions when directly embedding in concrete.

### Processing-friendly

Saves time: The compact design of the gully is characterised, among other things, by the fact that the threaded pockets have been integrated into the gully housing, thereby eliminating the need for time-consuming chiselling work.

### Shape-stable when concreted in-situ

Does not give way: Thanks to the properties of the cast iron material, the system remains dimensionally stable both when set in concrete and under extreme traffic loads.





## Overview of the product range

Less is more: The ACO Passavant multi-storey car park drainage system makes it impossible to make planning errors due to incorrect gully combinations.

The streamlined range simplifies planning and yet offers a wide variety of solutions.

DN 70

DN 100

### Height adjustment rings



### Gully body without flange



### Gully body with flange



### Accessories



Heating Fire protection insert

Heating Fire protection insert

## Cast iron and stainless steel parking deck gullies

Parking deck gullies drain dirty water and rainwater from areas with stationary traffic into the drainage pipe, thereby protecting people and structures. First and foremost, the installation location determines which version of the multi-storey car park gully has to be chosen. ACO multi-storey car park gullies reliably handle precipitation and have no

problem safely draining off rainfall and snow accumulation on cars and in wheel arches. In conjunction with surface protection systems/liquid waterproofing for parking decks and underground garages, an optimum connection is achieved with the ACO parking deck gullies.

- 100 mm flange width
- Standard-compliant in accordance with DIN 18532
- with connection flange for liquid waterproofing materials



### ACO Product information

- made of cast iron
- Vertical, one-piece gully  
DN 70 / DN 100
- Building material class A1,  
non-flammable
- with paint coat
- incl. cast iron grating, can be either  
screwed in place or loosely inserted
- high pressure resistance > 700 N/mm<sup>2</sup>
- Tested in accordance with DIN EN

### ACO Product information

- made of stainless steel
- Vertical, one-piece gully  
DN 70 / DN 100
- Tested in accordance with  
DIN EN 1253-2
- Building material class A1,  
non-flammable
- incl. mesh grating, can be either









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the future of drainage**

