



Lockable gratings

for in-situ channels

ACO DRAIN® ductile iron heelguard
gratings with frames



ACO. creating the future of drainage

The ACO Group – a strong brand around the world.

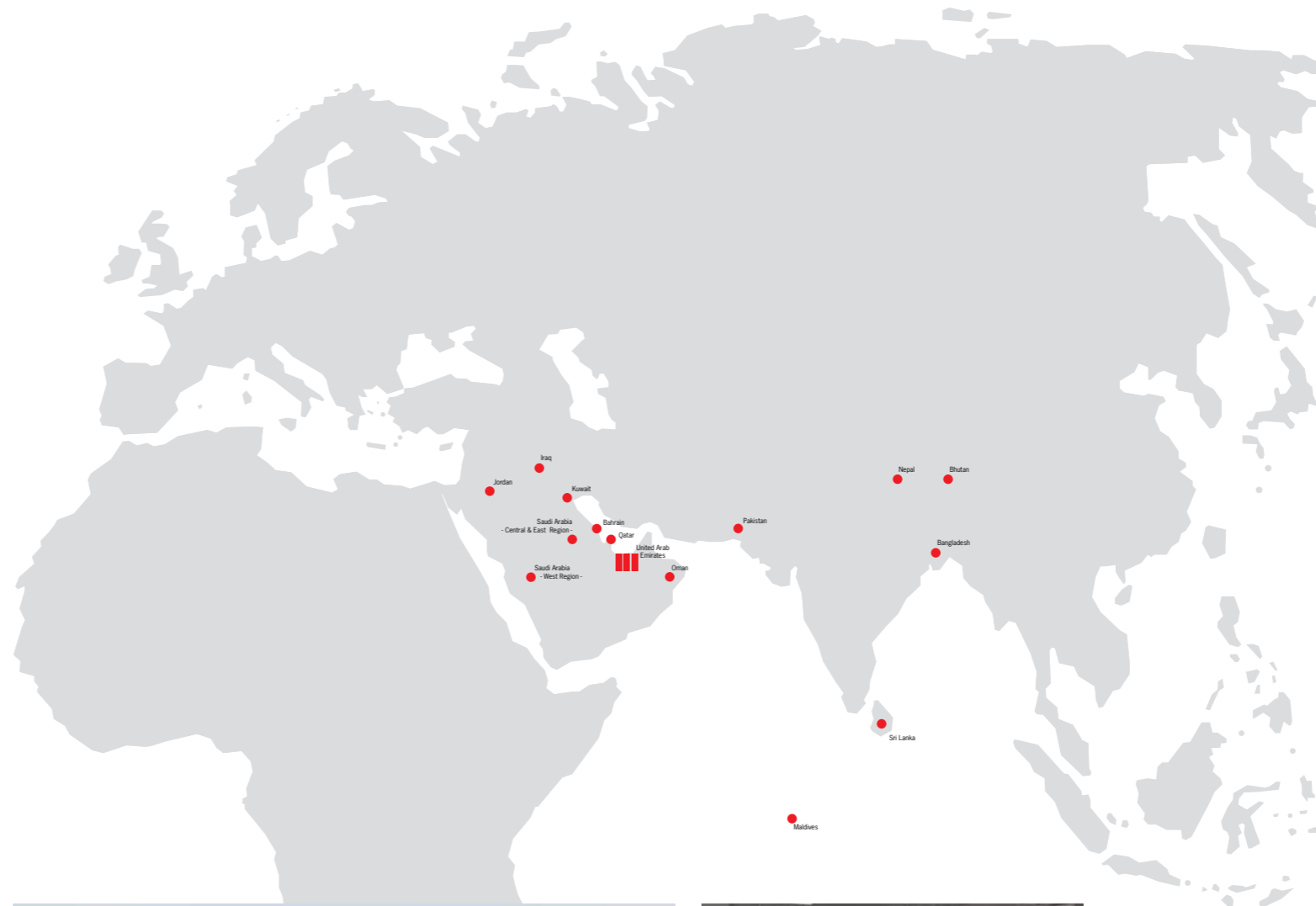
Established in 2006, ACO Systems FZE provides the support and service to the GCC countries, the Middle East Region and parts of South Asia. As part of the ACO Group, we are world leaders in the supply of various building drainage systems and external drainage systems since 1946. With a 10,000 sqm manufacturing, office and warehouse facility and a team of 40+ employees, we specialize in stainless steel drainage products with an emphasis on customized and hygienic solutions.

ACO Systems FZE production facility for stainless steel products, the warehouse and the office, located in the Jebel Ali Free Zone Dubai, United Arab Emirates.

ACO Systems FZE at a glance.

- 2006, company established by ACO International in the Jebel Ali Free Zone Dubai
- 40+ employees and supporting more than 15 countries in the GCC Region, Middle East and parts of South Asia
- 10.000 sqm production facility, office and warehouse Jebel Ali Free Zone Dubai is one of the largest Free Zone in the world
- near Al Maktoum Airport and the new Logistic District in Dubai South, Dubai Investment Park, Jebel Ali Industrial Zone and directly connected to the Jebel Ali Port in Dubai
- near Khalifa Port and the new International Airport in Abu Dhabi

www.aco.ae



10.000 sqm

Production facility, office and warehouse

40+

Employees in 2019

15+

Countries to support



ACO Headquarter Middle East
in Dubai/United Arab Emirates



ACO Showroom
for meetings, seminars and presentations

ACO Systems FZE Team
Sales, Production & Office Team





Technical

information

Frame and grating

All our products are fully certified

Safety and functionality is our priority in the development of access covers. During the development we can rely on many strength calculations, tests and real applications that we have implemented in recent years. We aim to be on the top of technological development and innovation.

ACO frames and gratings are type tested and certified according to following standards

DIN EN 1433 Line drainage - external

ACO Industries is using a quality management system certified according to EN ISO 9001. The company has been certified since 1996.

Factory production control, employees qualification and technical equipment are certified.

Customers can rely on key parameters of ACO line drainage:

- Safety
- Declared load capacity
- Tightness
- Functionality

ACO frame and grating - Innovation you can trust



Product

range and specification

ACO heelguard grating with
frame and push-fit lock

Product range:

- Drainage channels for vehicle and pedestrian areas
- Classification, design and testing requirements marking and evaluation of conformity
- it consists of a heavy duty ductile iron grating fixed with two push-fit locks per half meter to ductile rails casted into a concrete channel

Product specification:

- ACO heelguard gratings are secured within the frame with two push-fit locks per half meter to avoid ejection and/or inappropriate movements
- The screwless and exchangeable blocking devices are engineered and tested to withstand highest vertical ejection forces.
- The system complies with DIN EN1433, load class D400





ACO ductile iron heelguard gratings and frames with push-fit lock, up to D400



ACO Product benefits

- Self-leveling frame with spacer bar support for easy installation
- Safe positioning of the grating due to an additional stabilization groove
- Maintenance free
- Screwless push-fit drain locks
- Noise free, no rattling of the grating
- Heelguard type grating with 10 mm slot opening
- Anti-Slip grating type

- **ACO frame and grating in ductile iron** Class D400 according to DIN EN1433 with two maintenance free, screwless, non-integrally cast and traffic-safe securing features made of high-strength polypropylene push-fit locks per half meter to ductile iron rails, self leveling frame with spacer bar support.



Push - fit lock on each side



Product information ductile iron frame with grating, L = 500 mm

- Variations: black matt coating or epoxy coating
- Accessories: grating hook/opening tool, **art.-no. 01290**

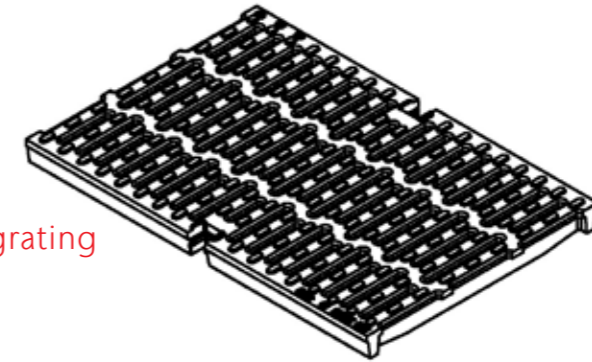
Size 200	Frame	Grating
Lenght:	500 mm	499 mm
Width:	283.5 mm	223 mm
Depth:	62 mm	32 mm
Clear opening:	200 mm	200 mm
Weight:	5.5 Kg	10.2 Kg
Art. - No.	136956	23221

Size 300	Frame	Grating
Lenght:	500 mm	499 mm
Width:	395 mm	338 mm
Depth:	78 mm	36.5 mm
Clear opening:	300 mm	300 mm
Weight:	9 Kg	18.9 Kg
Art. - No.	136951	136950

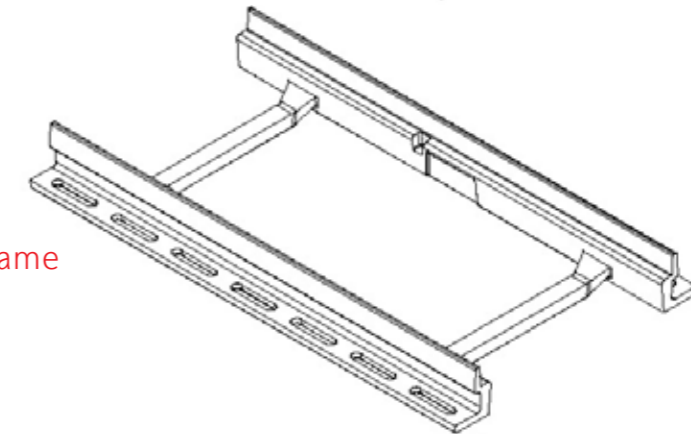
✓ EN 1433 ↓ D400 W 200 mm and 300 mm △ Anti slip



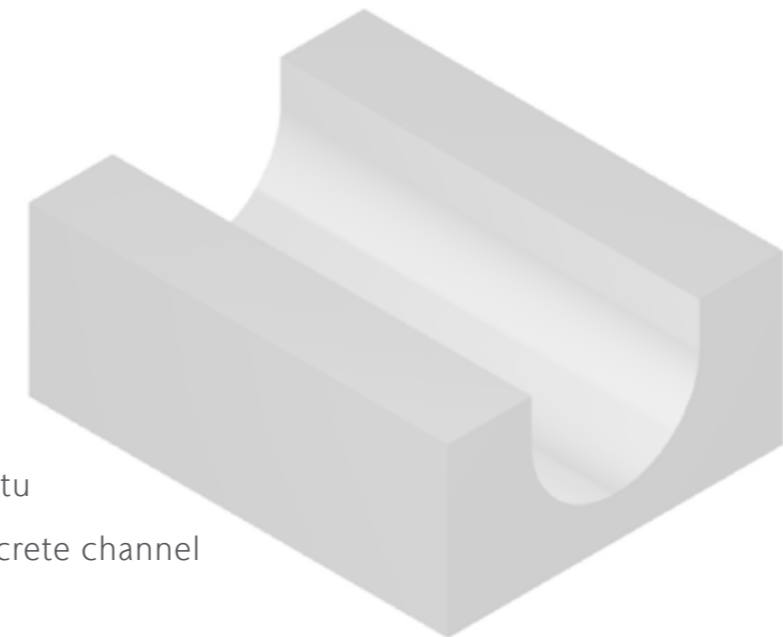
ACO heelguard grating



ACO frame



in-situ concrete channel



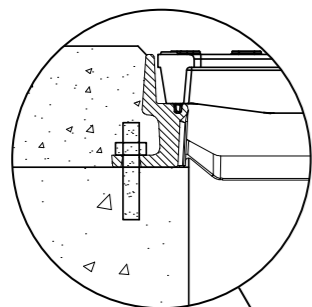
Applications: Road traffic lanes, car parking, paved traffic areas, pedestrian areas

General

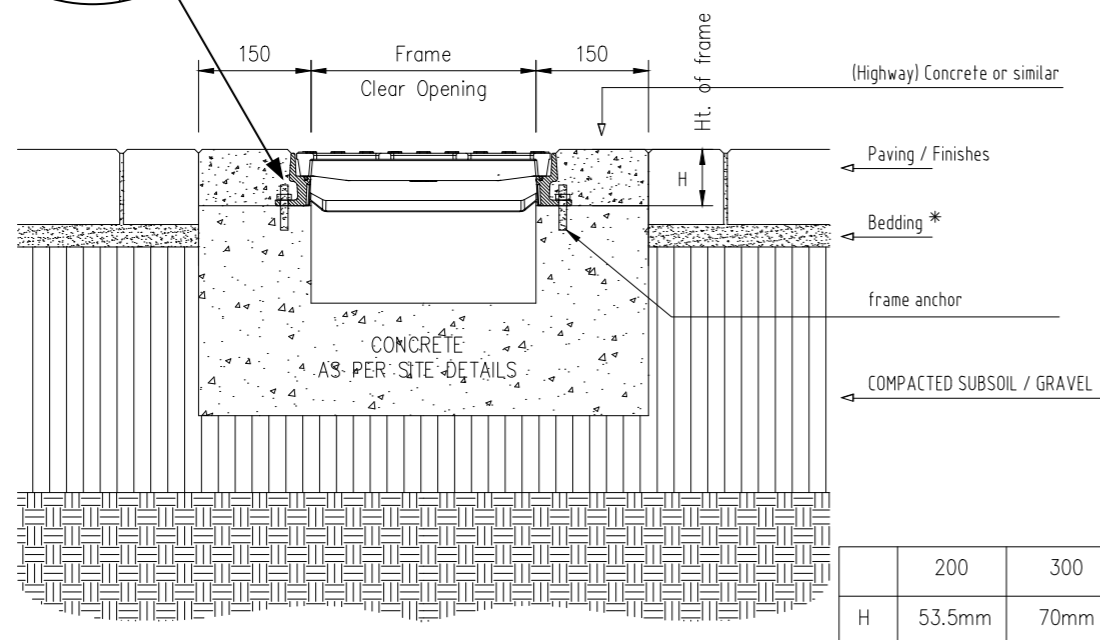
installation advise

for cast-in-situ frame
& grating

- Before commencing works, ensure that the correct ACO product has been chosen in terms of:
 - Clear-opening size (measure before ordering)
 - Depth
 - Loading class
 - Specification (normal, highway or high-max specification)
- Grate replacement/installation should only be attempted by qualified and experienced contractors. If in doubt, seek advice.
- The placement of the grate directly onto a concrete 'biscuit' (i.e. without bedding mortar) is not recommended.
- Exposed ironworks are vulnerable to damage by vehicles so should be protected at all times and not trafficked until such time as the final road course has been laid.



Anchoring: We recommend anchoring as per detail



*installation drawing

Installation

advise for

new installation

Ensure the general work area is as clean as possible and free from debris. The grate frame should be placed on top of a layer of bedding mortar, which in turn is laid on top of 2-4 courses of engineering bricks or pre-cast concrete seating rings, as per *installation drawing. The bedding layer material may be of a conventional mortar type, but for faster results mortar complying to C20/25 can be used, and for areas where extra strength is required (follow the project specification).

In all cases mixing should be carried out mechanically to ensure a thorough and consistent mix, and it is highly recommended that mixed batches of mortar are no greater than can be used in the time before the material starts to set. Always follow the manufacturer's instructions when mixing mortar, taking note of any PPE required when handling (gloves, goggles, etc.). Please note that the performance of such bedding materials is severely affected if the mating surfaces are not clean and dry. Any unused mortar should be disposed of appropriately according to COSHH regulations. The bedding material should be placed as soon as it is mixed, at a depth approximately 5-6mm greater than the required bedding thickness, and across the full width of the brick or concrete bedding area. The top surface of the mortar should be smooth and even, with no deep trowel marks.

The frame should then be placed as soon as possible, having been separated from its covers/grate and using mechanical lifting aids where appropriate, onto the bedding layer such that it is fully supported around the full perimeter of the frame flange and there are no voids at any point. The frame can then be tamped down to the required level, using surrounding road surfaces or other height markers as guides. Take care to ensure that the top edge of the frame is level with the intended final road surface, as failure to do so will result in excessive noise in service and/or potentially early failure. ACO recommends anchoring on the frames of each side for easy fixed installation.

Ensure that bedding material is not obstructing the cover seatings, cleaning off excess material where needed. Any holes in the frame flange should be filled with bedding material and the top face of the flange should be then covered in at least 10mm of the same. More may be added, if desired, to use up excess bedding material as long as it will not affect the placement of any subsequent surfacing courses. Clean up any exposed areas of bedding material on the inside of the frame by pointing to a smooth finish. The grate should not be placed into their frame until such time as the bedding has achieved full cure. When doing so, use mechanical lifting aids where appropriate.

Surrounding surface courses can be laid only when the bedding has achieved full cure. Do not allow the product to be trafficked in any way until the final tarmac road course is laid and cured. Failure to follow this advice could result in damage to the grate.

Recommended

installation advise

Recommended bedding mortar

Failure of the cementitious bedding mortar was found to be a principal cause of failure of road ironwork installations. Cracking of bedding material caused the ironwork to become loose.

Cracking occurred due to a number of factors:

- Shrinkage of the mortar during installation
- Mortar having insufficient strength. Both compressive and tensile strain is built up during loading
- Installation opened to traffic too early
- Differential stiffness between the access chamber and the surrounding road
- Movement of the frame and flange of the casting under dynamic loading
- Failure of the bond/adhesion between the casting and mortar giving rise to separation.

An understanding of the behaviour of the ironwork under loading and the subsequent load transfer was developed along with the quantification of the strength (compressive and tensile) requirements of a bedding material.

Polyester resin manhole bedding mortar which has been purpose-designed to provide:

- Long-term strength
- Resistance to shrinkage
- Long-term durability
- Optimum workable properties
- Early site opening
- Consistency of performance

Our services for you

Every project is different, has its own requirements and challenges. In addition to our products, we offer you our know-how and our service to jointly develop tailor-made solutions - from planning to after-sales support.



train

Information and further education

In the ACO Academy, we share the expertise of the global ACO Group with dealers, planners, architects and installers, who place a big priority on quality. We invite you to profit from our expertise.



design

Planning and optimisation

The tendering and planning of drainage solutions is associated with many alternatives. But which concept produces the most economical and safest technical solution? We'll help you find the right answer.



support

Construction advice and assistance

We provide you with project-related advice and support on your construction site to ensure that no unpleasant surprises occur between the planning and realisation of a drainage solution.



care

Inspection and servicing

ACO products are designed and built for long service lives. Our customer care services ensure that ACO continues to satisfy your high quality requirements year after year.



ACO service chain

because quality does not stop with the product

Every product from ACO supports the
ACO system chain



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- Drainage channels and gratings
 - Road and point drainage
 - Access covers
 - Manhole covers
 - Oil separators
 - Grease separators
 - Bridge drains
 - Parking area drainage
 - Sport facility drainage
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**ACO. creating
the future of drainage**

