# Robust drainage of large and heavy duty surfaces

ACO DRAIN<sup>®</sup> Qmax Neo 300



### ACO DRAIN®

### Qmax Family

ACO Qmax is the combination of drainage and retention. There are no limits related to the application field – everything is possible with ACO Qmax, from utilising it as a slotted channel in pedestrian areas to the drainage of large surface areas with heavy traffic.

The composite channels are easy and quick to assemble due to their low weight.

The system is available in different nominal widths from 150 to 900 and can therefore

**Qmax Neo** 

be adapted to the hydraulic requirements. In particular, the channel bodies of the larger nominal widths have an enormous retention volume: The collected rainwater can be temporarily stored and then discharged into the sewer system in a controlled manner during heavy rainfall incidents. The handling of these large volumes of water and the defusing of heavy rainfall peaks is a critically important subject for the future.

#### Accessories



Installation Jig Enables a fast and easy alignment of the frame.

Ins
Indi
ficat

#### pection Shaft

ividually tailored shaft according to the specitions of the respective building project. Transition for different nominal widths.

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#### Qmax Family product advantages

- Application variety
- □ All surface finishes possible
- □ Traffic loads from A 15 to F 900 certified
- □ Large choice of materials for edge rail
- Design
- □ Professional surface appearance due to discreet and narrow edge rail  $\hfill\square$  Uniform and straight surface appearance even with different nominal widths underground
- □ Drainage for the surface area and simultaneous retention with large storage volumes without additional sewer work
- Operating state
- Sealed channel run
- Installation
- □ High lay rates and performances without heavy lifting devices



Qmax Neo

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#### Qmax



#### Surface



#### Edge Rail

Available in three different materials (cast iron, galvanised steel and composite) for specific applications.



#### ACO Qmax

Combination of different nominal widths with the same edge rail creates a uniform surface appearance and optimal hydraulic performance.

### New Qmax Neo 300 Channel Body

Part of the subgroup "Neo" in the Qmax Family.

Light weight product made from Polypropylene enables

Plug-in installation for

Smooth wash for a

self cleaning surface

a simple connection

Integrated

gaskets for a sealed channel run

easy handling



L

and corrosion

The pavement beam feature permits continuous reinforcement positioning and flow of concrete through the product



Qmax Neo Rail (cast iron) For applications up to F 900



### Neo Family

highest load areas.



For large projects: Transport optimised delivery and space saving on construction sites.

ACO DRAIN<sup>®</sup> Qmax Neo is a new subgroup of the existing Qmax family. This "New Efficient Option" differs in terms of material, manufacturing and transport process.

Nevertheless, the main field of application remains within



#### Easy Installation

Due to the low component weight and the simple assembly of several channel bodys, a quick installation without additional lifting devices is possible.

#### **Operating State**

The design enables a reliable and robust solution even in areas with highest load classes.

#### Surface Design

The narrow rail allows a discreet drainage up to the highest load classes including F 900.





## Installation jig product advantages



No floating during concreting process.

No horizontal movement during concreting process.

Alignment of the edge rail is already ensured during the first concrete pour which fixes the installation jig.

### Applications

Due to its versatility, ACO Qmax is used in various applications. The small narrow edge rail offers only a small contact area for loads, this ensures low abrasion and therefore a long, reliable product life. Additionally, the surface does not contain any screwed or loose components which could adversely affect traffic safety.









ACO DRAIN® Qmax





#### National Route 1, Costa Rica

#### Advantages:

- Economic transport, 2,9 kms shipped in 4 containers
- Easy assembly on site supported "remotely" by assembly instruction and assembly video
- Fast and easy installation
- Full technical support during design and construction phase by the local ACO and ACO US Export team
- ACO's local partner providing logistic and service

#### Palma de Mallorca, Spain

#### Advantages:

- Delivery time
- Economic transport
- Light weight product and easy installation
- Flexible product portfolio to offer a competitive mix within the Qmax family



#### ACO DRAIN<sup>®</sup> Qmax



### Technical Data

Qmax Neo 300

efficient drainage.

Due to the very narrow cast iron top, Qmax is ideal for heavy-duty applications. However, the small drainage slot can also be the perfect solution for visually demanding installations. By combining the existing Qmax family with Qmax Neo, the system can meet hydraulic requirements in the most effective way and provide safe and

### **Product Information**

Art. No.	Description	Length (mm)	Width (mm)	Depth overall (mm)	Slot width (mm)	Weight (kg)
157006	ACO Qmax Neo 300 set of components					
157009	ACO Qmax Neo 300 channel assembly complete with ACO Neo Q-Flow cast iron edge rail	1000	366	561	25	9,8
157012	ACO Qmax Neo 300 assembled with legs	1000	400	591	25	10,48

#### Art. No.: 157009





Art. No.: 157012





### Edge Rail



Load class (up to Surface covering Slot width [mm] Intake cross-secti

\* Other Qmax Rail options available in the existing Qmax Brochure on request. Protective Strip available for covering cast iron edge rail during the construction phase (reusable/magnetic).

ACO Qmax Neo 300 set of components:

 Art. No.	Description	Pieces in set
 157401	ACO Qmax Neo 300 Lower half with longitudinal seal	1
 157402	ACO Qmax Neo 300 Upper half with longitudinal seal	1
 157403	ACO Qmax Neo 300 Inlet connection	2
 157404	ACO Qmax Neo 300 Sealing ring 300	1
 157411	ACO Qmax Neo 300 QFlow cast attachment 500 mm	2

Art. No.: 157009



Art. No.: 157012





#### Q-Flow (Cast Iron)\*

0)	D 400	F 900
9	Asphalt/concrete	Concrete
]	20	6
tion [cm²/m]	18	37



Description
Qmax 300 NEO access chamber male- female
Qmax 300 NEO access chamber female- male
Qmax 300 NEO access chamber female-female

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### Installation Qmax Neo 300

Drawing for D 400



Always refer to the detailed installation drawing for your specific application requirement and variant. Please contact your local ACO Service Design Team for support.

#### Watertight Installation to EN 1433:2002

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Where ACO Qmax channels are to be installed with watertight joints, the seal between channel units must be checked for cleanliness and then smeared with lubricant lubricant manufacturer. grease such as proprietary pipe joining lubricant. ACO Qmax channels are tested to confirm compliance with the watertightness requirements of EN 1433 when filled with water to the top of the channel bore

#### **Ground Conditions**

The long term performance of a channel installation to sustain vertical and lateral loads depends upon A) ground conditions B) stability of the adjacent pavement and C) a durable concrete bed and surround.

The recommended installation detail may require the minimum dimensions to be revised to achieve site specific EN1433 load class requirements.

(below the inlet arches). Installation must

be in accordance with ACO's recommen-

dations and the recommendations of the

It is envisaged that the channel joints

mise the watertightness.

would not be subject to movement, but any movement of the joint might compro-

### Concrete Surround and Reinforcement

Ensure that the channels do not float while pouring the concrete. The reinforcement required in the concrete surround varies with the installation group (load class) and channel size.

Load class	(according to EN 1433)		D400	F900
Class of compressive strength of foundation concrete	(according to EN 206-1)		≥ C20/25	≥ C30/37
Exposure class *1)			(X0)	XC3
Dimension of foundation. Turo M	(according to EN 1433)	x (mm)	≥ 650	≥ 750
Dimension of foundation - Type M	()	y (mm)	≥ 720	≥ 770
Reinforcement			No	Yes

Omax |

\*1) Exposure class: X0 only for non-reinforced and fully coverd foundation concrete. XC3 only exposed to freezing and thawing but not to chlorides. It is mandatory that the planer/engineer is defining individually the relevant exposure class.

### Hydraulic performance tables

The table below shows the maximum capacity of the unit Qmax Neo 300, assuming uniform lateral flow.

	Length to outlet	Q		
	[m]	[ <b>m</b> ] [l/s]	/s]	
	Slope	0 %	0,5 %	
3 l/m 📙	up to 10 m	45,0	55,8	
	up to 25 m	42,5	63,2	
nax Neo	up to 50 m	39,7	71,0	
300	up to 100 m	35,8	78,1	
	up to 200 m	30,6	85,0	

The combined depth of the asphalt pavement must not exceed the required dimensions. Ensure the edge rail anchors -if present- are well embedded into the concrete.

### Every ACO product supports the ACO system chain



- 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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