High-Capacity Slot Drains

# **ACO Construction & Building Products**





## **ACO INFRASTRUCTURE**

*Qmax*<sup>®</sup> *Leaflet* 

# Introduction to the heavy duty Qmax Line Qmax<sup>®</sup> 225 - 8.6" internal width

- Qmax<sup>®</sup> 350 13.5" internal width
- Qmax<sup>®</sup> 365 14.3" internal width
- Qmax<sup>®</sup> 465 18.3" internal width
- Qmax<sup>®</sup> 600 23.6" internal width



#### **The ACO Group**

Founded in 1946, the ACO Group manufactures products for the building and construction industry.

ACO is the global leader, and pioneer, of modular trench drain systems. ACO drainage systems are used in a variety of applications - from domestic environments to airports. ACO products have been used at many prestigious locations, including Olympic stadiums, since 1972.

ACO USA was founded in 1978 and is America's foremost manufacturer of trench drainage products.



### **ACO Infrastructure**

ACO Infrastructure consists of five different, yet complementary, product offerings. Each product within the range addresses a variety of unique design criteria required in different types of road and/or bridge projects. Products focus on several key issues:

- Creating a safer driving environment by minimizing roadside ponding and sheeting.
- Withstanding with the challenges of fast moving vehicles.
- Avoiding the need for multiple grades.



# ACO. creating the future of drainage

ACO is a global leader in water management, with products to collect, clean, hold and release water. ACO products address all phases of the water cycle and support sustainable drainage and LEED principles.

In the United States, ACO Infrastructure product line focuses on products that address the collection phase.



Qmax<sup>®</sup> is a high-capacity slot drainage system that allows an unbroken reinforced slab to be cast around – and through – the inlets for a stronger surround. It was developed to satisfy the demand for an economic, high-capacity drainage system for large catchment areas.

Manufactured from recycled Medium Density Polyethylene (MDPE), the lightweight material makes ACO Qmax<sup>®</sup> easy to handle and quick to install. The galvanized or ductile iron rails and MDPE body ensure a long service life in excess of 25 years. ACO Qmax<sup>®</sup> is rated up to EN 1433 Load Class F (90 tons). The patented inlet design provides a continuous pavement beam feature through the slab, strengthening the installation.

A full range of accessories including catch basin connectors and end caps provide simple and convenient integration with conventional site practices.

# most innovative products AT WORLD OF CONCRETE

#### **Typical Applications**

- Airports
- Highways
- Motor racing circuits
- Gas stations
- Docks & ports
- Military bases
- Truck stops

#### Manufactured to 78.75" lengths (2m)

All five models can be used independently or together with other sizes to provide an economic and effective drainage solution for virtually any catchment area.

#### **Patented Pavement Beam Feature**

Openings enable continuous concrete over the channel, strengthening the installation and minimizing the need for reinforcement.

> Manufactured from Recycled MDPE This lightweight material makes channels easy to handle and quick to install.

**Neoprene Twin Lipped Seals** Enable quick and easy watertight connections.

#### Male/Female Interlock

Installation Feet Keep channels stable during installation. Simple push fit channel connection with 1.5" overlap detail for easy edge rail alignment. Qmax<sup>®</sup> 365, 465 and 600 also have wing nut connection to ensure stability during installation.

#### **Molded Cut Lines**

Guides every 8" allow channels to be cut down to accommodate any design specification.

# ACO Qmax<sup>®</sup> System Layout

#### **Four Edge Rail Options**

Four top rails are available for each size within the ACO Qmax® system to suit the application requirement: Q-Flow for maximum intake capacity and Q-Guard for ADA-compliant installations.



ACO Q-Flow ductile iron coated edge rail provides maximum intake capacity for applications in concrete pavements. 1" wide intake slots

- •
- Coated for corrosion protection



Q-Guard ductile iron edge rail with ADAcompliant top is designed for pedestrian applications in concrete pavements.

- 0.31" wide twin longitudinal slots
- Coated for corrosion protection



Q-Flow galvanized steel edge rail provides maximum intake capacity for applications in concrete pavements.

- 1" wide intake slots
- Galvanized steel



Q-Guard galvanized steel edge rail is designed for pedestrian applications in concrete and asphalt pavements.

- 0.39" wide slots
- Galvanized steel

#### ACO Catch Basin

Offers 4-way channel connection, allows access to channel system for maintenance and provides discharge to stormwater sewer. Choice of removable grate and frame.

#### **Patented Pavement Beam Feature**

Allows an unbroken reinforced slab to be cast around and through the inlets without interrupting the line of the inlet slot. A continuous flow of concrete through the product strengthens installation.



#### **Outlet Flume**

To connect male or female channel ends to catch basin or pipe system.



#### Pavement Beam Openings

Enable high level services to pass through the inlet without the need to reroute around the drainage system.

**Choice of Edge Rails** Four different edge rails are available, including ADA compliant and high-intake.

End Plates Choice of closing and blanking end plates for each system.



#### **System Connectors**

Allow seamless connection between different sized systems. Simple push-fit channel connection detail provides watertight seal.

#### ACO Qmax<sup>®</sup> is manufactured from MDPE

MDPE has a high resistance to dilute acids and alkalis and is unaffected by road salt, fuel, oil, deicing agents and other commonly encountered chemicals.

Complete details of the chemical resistance of  $Qmax^{\textcircled{O}}$  products can be obtained by contacting an ACO sales representative or by calling (888) 490-9552. Samples of MDPE can be supplied for testing.



## ACO Qmax<sup>®</sup> Installation and site considerations





#### **1.0 Ground conditions**

Customers should ensure that minimum dimensions shown are suitable for existing ground conditions.

#### Engineering advice may be necessary.

#### 2.0 Surface protection.

The channels must not be trafficked until installation of channels and pavement surface is completed. During site work ensure that edge rails are covered/protected to prevent debris entering channels during construction.

#### **3.0 Reinforcement**

Reinforcement details in concrete surround varies with installation Load Class and channel size. For applications up to Load Class D 400 it is likely to be sufficient to continue the slab reinforcement (if any) through the Qmax® arch detail under the slot. For Load Class F 900 applications it may be necessary to reinforce over, under and to the sides of the unit.

#### Engineering advice may be necessary.

#### 4.0 Concrete surround

Concrete should have minimum compressive strength of 4,000 psi. Concrete surround dimensions vary depending on channel size and Load Class, and are subject to site engineer's specification. Table below provides the minimum dimensions ACO recommends.



Load Class	c	D	E	F
Qmax 225	6"	6"	6"	8"
Qmax 350	6"	6"	6"	8"
Qmax 365	6"	6"	8"	8"
Qmax 465	6"	6"	8"	8"
Qmax 600	8"	8"	8"	8"

#### 4.1 Concrete Pour

Ensure that channels do not float when pouring concrete. To prevent flotation or distortion of the ACO Qmax® 365, 465 & 600 channels, pour concrete in several pours.

#### 5.0 Joints

The detailing of joints is to be determined by the engineer in conjunction with the detailing of the pavement. A longitudinal expansion joint is typically formed down each side of the concrete surround as indicated. A transverse or construction joint should be formed at channel joints.

#### 6.0 Watertightness

If channels are to be installed with watertight joints, seal between channel units must be cleaned and smeared with lubricant jelly such as proprietary pipe joining lubricant. Guidance on surface preparation should be sought from lubricant manufacturer. Any movement of channel joints post installation may compromise watertightness.

#### 7.0 Pavement

To finish installation, trowel concrete pavement flat and taper down to edge rail. The top of adjacent pavement must be above the rail level (approximately 1/8"), this ensures all liquids drain into the channel and edge rail is not damaged by traffic.

#### Concrete



# ACO Qmax<sup>®</sup> systems

Description	Part No	Invert inches	Wgt Ibs				
OMAX <sup>®</sup> 225							
Qmax <sup>®</sup> 225 channel with Q-Flow ductile iron rail - 78.75" (2000mm) Qmax <sup>®</sup> 225 channel with Q-Guard ductile iron rail - 78.75" (2000mm) Qmax <sup>®</sup> 225 channel with Q-Flow galvanized steel rail - 78.75" (2000mm) Qmax <sup>®</sup> 225 channel with Q-Guard galvanized steel rail - 78.75" (2000mm)	32800 32801 32802 32803	16.61 16.61 16.61 16.61	52.8 55.0 39.2 33.7				
Accessories							
Qmax 225 End cap assembly	42221	-	3.1				
Qmax 225 to Qmax <sup>™</sup> 350 System connector plate	32880	-	1.8				
QMAX® 350		01 50	60.0				
Qmax <sup>®</sup> 350 channel with Q-Flow ductile iron rail - 78.75" (2000mm) Qmax <sup>®</sup> 350 channel with Q-Guard ductile iron rail - 78.75" (2000mm) Qmax <sup>®</sup> 350 channel with Q-Flow galvanized steel rail - 78.75" (2000mm) Qmax <sup>®</sup> 350 channel with Q-Guard galvanized steel rail - 78.75" (2000mm)	32810 32811 32812 32813	21.52 21.52 21.52 21.52	62.3 64.5 52.8 47.3				
Accessories							
Qmax 350 End cap assembly	42351	-	5.7				
QMAX® 365							
Qmax <sup>®</sup> 365 channel with Q-Flow ductile iron rail - 78.75" (2000mm) Qmax <sup>®</sup> 365 channel with Q-Guard ductile iron rail - 78.75" (2000mm) Qmax <sup>®</sup> 365 channel with Q-Flow galvanized steel rail - 78.75" (2000mm) Qmax <sup>®</sup> 365 channel with Q-Guard galvanized steel rail - 78.75" (2000mm)	32820 32821 32822 32823	31.50 31.50 31.50 31.50	96.8 99.0 78.3 72.8				
Accessories							
Qmax <sup>®</sup> 365 Closing end plate (Fits male or female end of uncut channels) Qmax <sup>®</sup> 365 Closing end cap (Easy push fit cap for cut channel ends) Qmax <sup>®</sup> 365 to Qmax <sup>®</sup> 465 System connector plate Qmax <sup>®</sup> 365 Outlet flume (male) Omax <sup>®</sup> 365 Outlet flume (female)	32825 32886 32882 44360 44361		7.7 4.6 5.5 12.5 12.8				
QMAX® 465							
Qmax <sup>®</sup> 465 channel with Q-Flow ductile iron rail - 78.75" (2000mm) Qmax <sup>®</sup> 465 channel with Q-Guard ductile iron rail - 78.75" (2000mm) Qmax <sup>®</sup> 465 channel with Q-Flow galvanized steel rail - 78.75" (2000mm) Qmax <sup>®</sup> 465 channel with Q-Guard galvanized steel rail - 78.75" (2000mm)	32830 32831 32832 32833	37.40 37.40 37.40 37.40	109.3 111.5 92.2 86.7				
Accessories							
Qmax <sup>®</sup> 465 Closing end plate (Fits male or female end of uncut channels) Qmax <sup>®</sup> 465 Closing end cap (Easy push fit cap for cut channel ends) Qmax <sup>®</sup> 465 to Qmax 600 <sup>®</sup> System connector plate Qmax <sup>®</sup> 465 Outlet flume (male) Qmax <sup>®</sup> 465 Catch basin connector (female)	32835 32887 32883 44362 44363		10.8 6.8 8.1 16.9 17.2				
QMAX <sup>®</sup> 600							
Qmax <sup>®</sup> 600 channel with Q-Flow ductile iron rail - 78.75" (2000mm) Qmax <sup>®</sup> 600 channel with Q-Guard ductile iron rail - 78.75" (2000mm) Qmax <sup>®</sup> 600 channel with Q-Flow galvanized steel rail - 78.75" (2000mm) Qmax <sup>®</sup> 600 channel with Q-Guard galvanized steel rail - 78.75" (2000mm)	32840 32841 32842 32843	45.47 45.47 45.47 45.47	143.7 145.9 125.8 120.3				
Qmax <sup>®</sup> 600 Closing end plate (Fits male or female end of uncut channels) Qmax <sup>®</sup> 600 Closing end cap (Easy push fit cap for cut channel ends) Qmax <sup>®</sup> 600 Outlet flume (male) Qmax <sup>®</sup> 600 Outlet flume (female)	32845 32888 44364 44365	- - -	21.6 10.8 27.1 27.5				
F880 Fiberglass catch basin	98075	-	22.0				
F881 Deep fiberglass catch basin Black coated steel frame Galvanized steel frame Iron grate Galvanized grate	98077 98021 98034 97453 97452		30.0 23.2 24.2 206.0 63.8				











#### Other ACO products

#### **Exernal drainage**

#### ACO Sport Surface drainage and building accessories for track & field.

ACO Infrastructure Surface drainage products engineered for highways, urban roads and bridges.

Aquaduct Custom design and manufacture of fiberglass trench drain systems.

ACO Duct Linear ducting system with removable solid covers.

ACO Environment Oil water separators and spill containment systems.

ACO Wildlife Tunnel and fence system to guide amphibians and other small creatures safely across roads.

ACO StormBrixx A unique and patented plastic geocellular storm water management system.

#### ACO Self

Simple drainage and building components for use around the home, garden and office.

#### **Building drainage**

**ACO Stainless** Stainless steel trench drains.

**ACO Floor Drain** Stainless steel floor drains.

ACO BuildLine Drainage products for thresholds, balconies, green roofs and building façades.

ACO Pipe Stainless steel push-fit pipe system.

ACO ShowerDrain Shower drainage.

OuARTz Designer bathroom floor solutions.

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