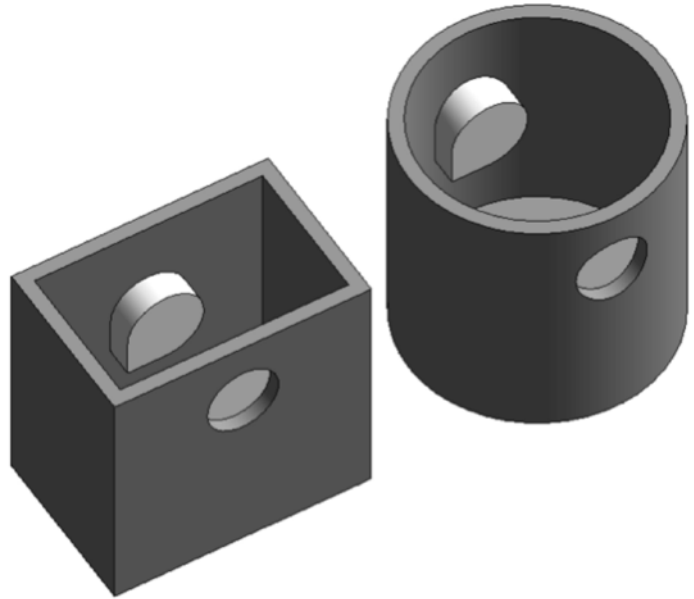# ACO Q-Brake Vortex
Surface water flow control system

User Guide for Autodesk Revit files

▶ The ACO Q-Brake Vortex Range

ACO Q-Brake Vortex is divided into 2 individual Revit families.

- Flat Type – For Rectangular manholes
- Round Type – For Circular manholes

▶ Loading ACO Q-Brake Vortex into your project

Each system is modelled as a generic family that can simply be loaded into your project.

1. Download the relevant ACO Q-Brake Vortex file and save it to a suitable location

2. Open your project and navigate to an appropriate view

3. Navigate to the "Insert" icon on the Revit ribbon and click "Load Family"

4. Select the Q-Brake Vortex Revit file you saved earlier

5. The file can now be placed into your project. Navigate to the "Architecture/Component" icons on the Revit ribbon and click "Place a Component"

Note that all of the Q-Brake Vortex files are "floor" based items.
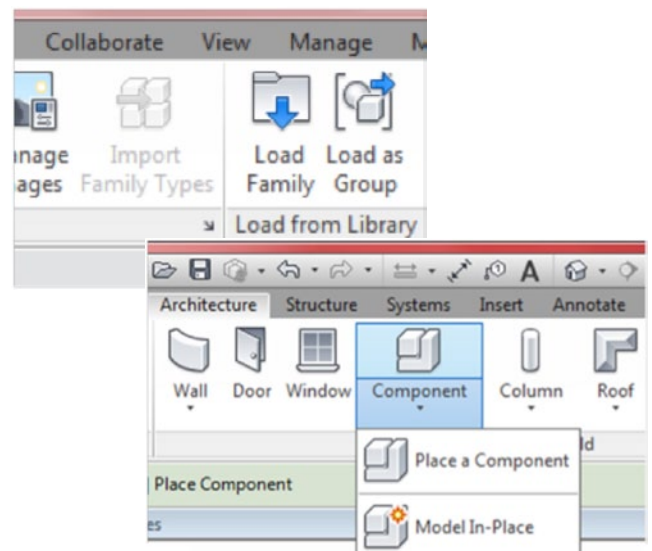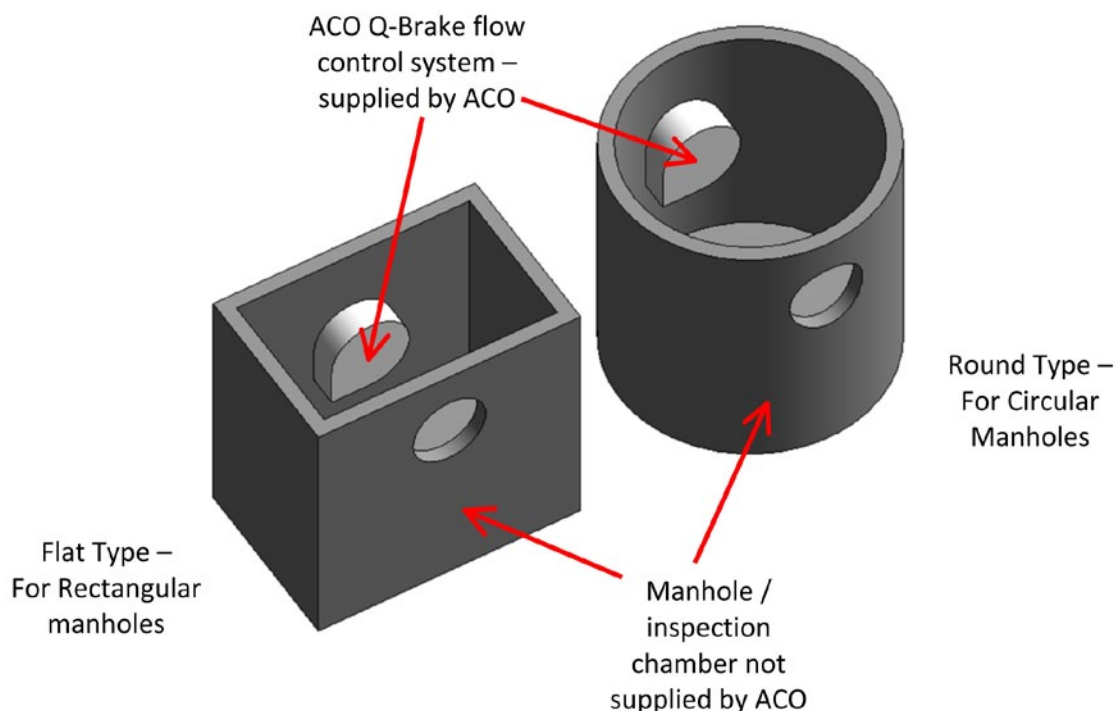
▶ Using the system and options

ACO Q-Brake Vortex systems and options

Step 1: Insert the Q-Brake Vortex system into the project

The system will load with default settings.

The Q-Brake Vortex is housed within a manhole / inspection chamber.

The manhole / inspection chamber has been included within the file for ease of design within Revit.

Note! The manhole / inspection chamber items are not supplied by ACO as part of the Q-Brake Vortex system. Only the Q-Brake Vortex flow control system is supplied by ACO.

Step 2: Customising the Q-Brake Vortex system

Once the required system type has been placed into the project, it can be customised to suit the specific design needs of the drainage scheme.

To customise the system, simply select it and then refer to the "Dimensions" section in the "Properties" box on the left hand side of the screen.

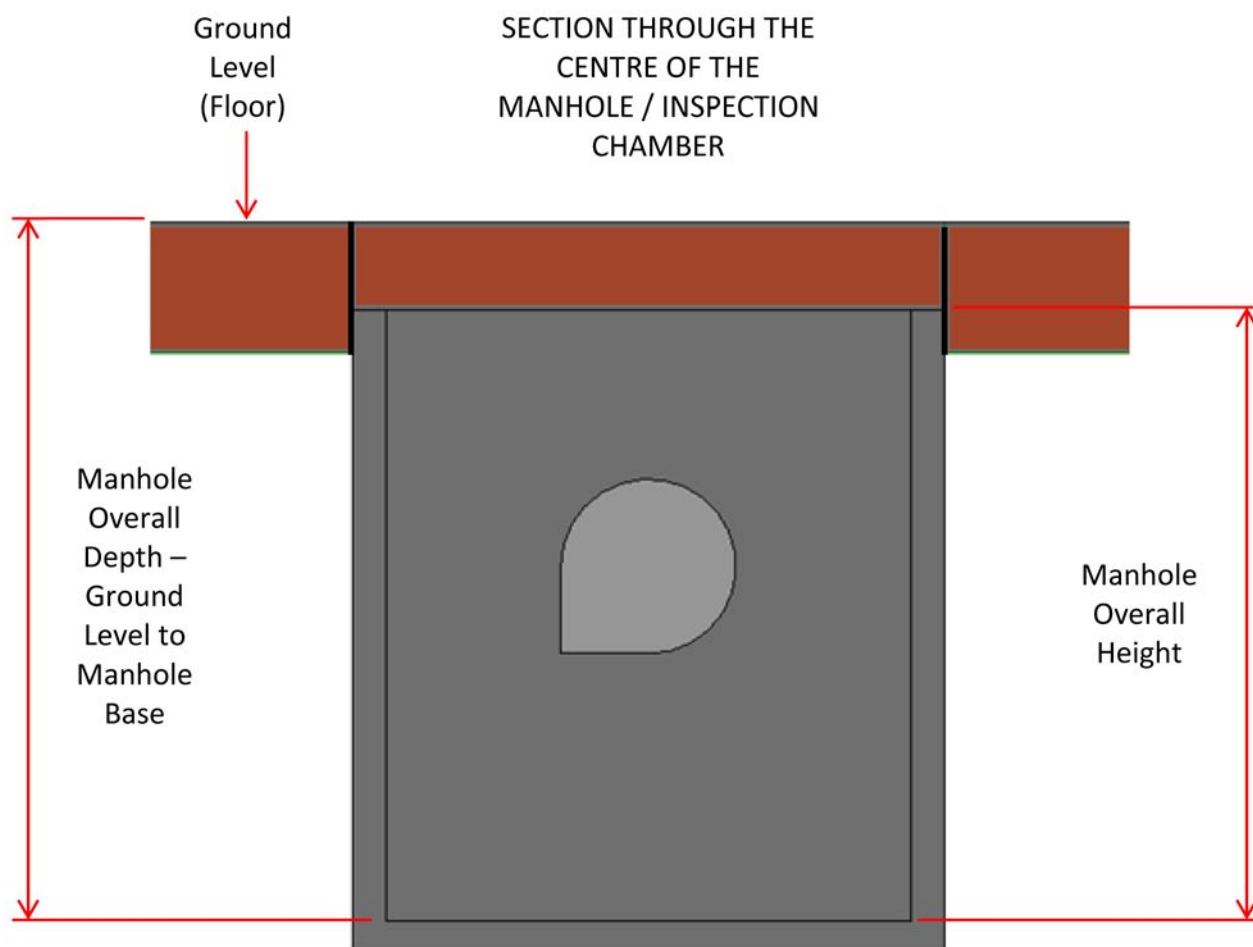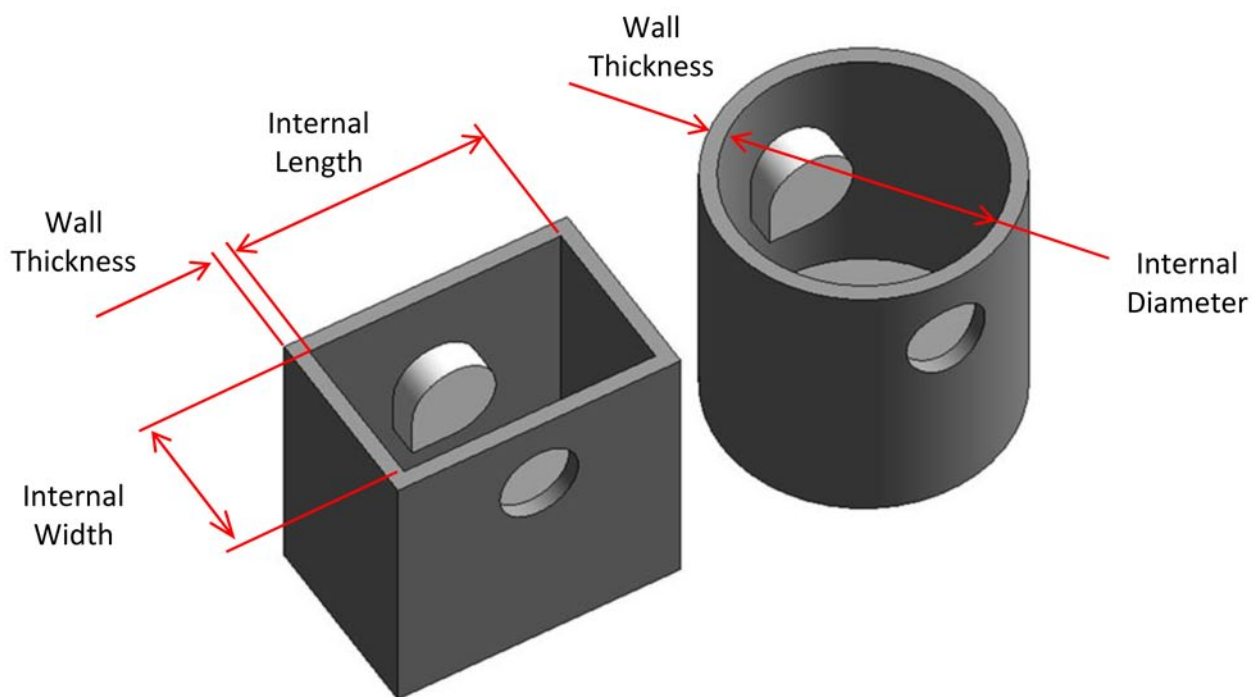a. Customising the manhole / inspection chamber unit

The internal diameter (for Round type), internal length and width (for Flat type), depth, height and inlet hole diameter and invert of the manhole / inspection chamber can be customised by changing the values in the "Properties" box.

Simply enter the dimensions required in the fields highlighted right, and the system will update accordingly.
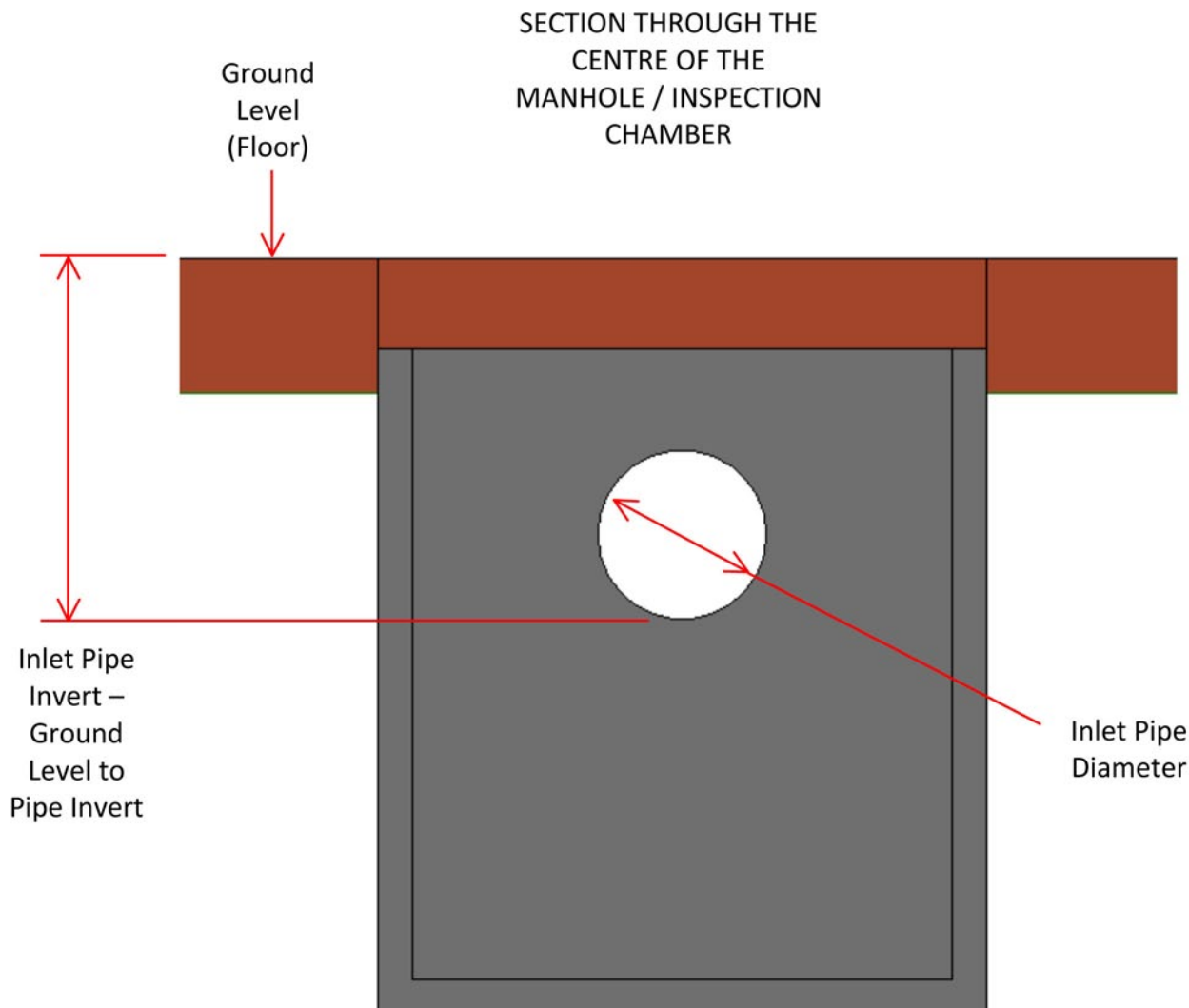
Note that it is not the responsibility of ACO to provide the details for the manhole / inspection chamber that is to be used.

Properties

ACO Q-Brake Vortex - Round Type - For Circular Manholes

Generic Models (1)

Constraints

Dimensions

Manhole Height	1250.0
Manhole Internal Diameter	1200.0
Manhole Inlet Pipe Diameter	375.0
Manhole Inlet Pipe Invert – Ground Level to Pipe Invert	800.0
Manhole Overall Depth – Ground Level to Manhole Base	1500.0
Manhole Wall Thickness	75.0
ACO Q–Brake Vortex – Body Diameter	400.0
ACO Q–Brake Vortex – BodyThickness	150.0
ACO Q–Brake Vortex – Outlet Pipe Diameter	225.0
ACO Q–Brake Vortex – Outlet Pipe Invert – Ground Level to Pipe Invert	900.0
ACO Q–Brake Vortex – Orifice Diameter	0.0
ACO Q–Brake Vortex – Design Flow – Max Discharge @ Design Head	0.0

▶ Using the system and options

Wall
Thickness

Internal
Length

Wall
Thickness

Internal
Width

Internal
Diameter

Ground
Level
(Floor)

SECTION THROUGH THE
CENTRE OF THE
MANHOLE / INSPECTION
CHAMBER

Manhole
Overall
Depth –
Ground
Level to
Manhole
Base

Manhole
Overall
Height

▶ Using the system and options

SECTION THROUGH THE
CENTRE OF THE
MANHOLE / INSPECTION
CHAMBER

Ground
Level
(Floor)

Inlet Pipe
Invert –
Ground
Level to
Pipe Invert

Inlet Pipe
Diameter

b. Customising the ACO Q-Brake Vortex unit

The body diameter and thickness, outlet pipe diameter and invert, orifice diameter and design flow can be customised by changing the values in the "Properties" box.

Simply enter the dimensions required in the fields highlighted right, and the system will update accordingly.
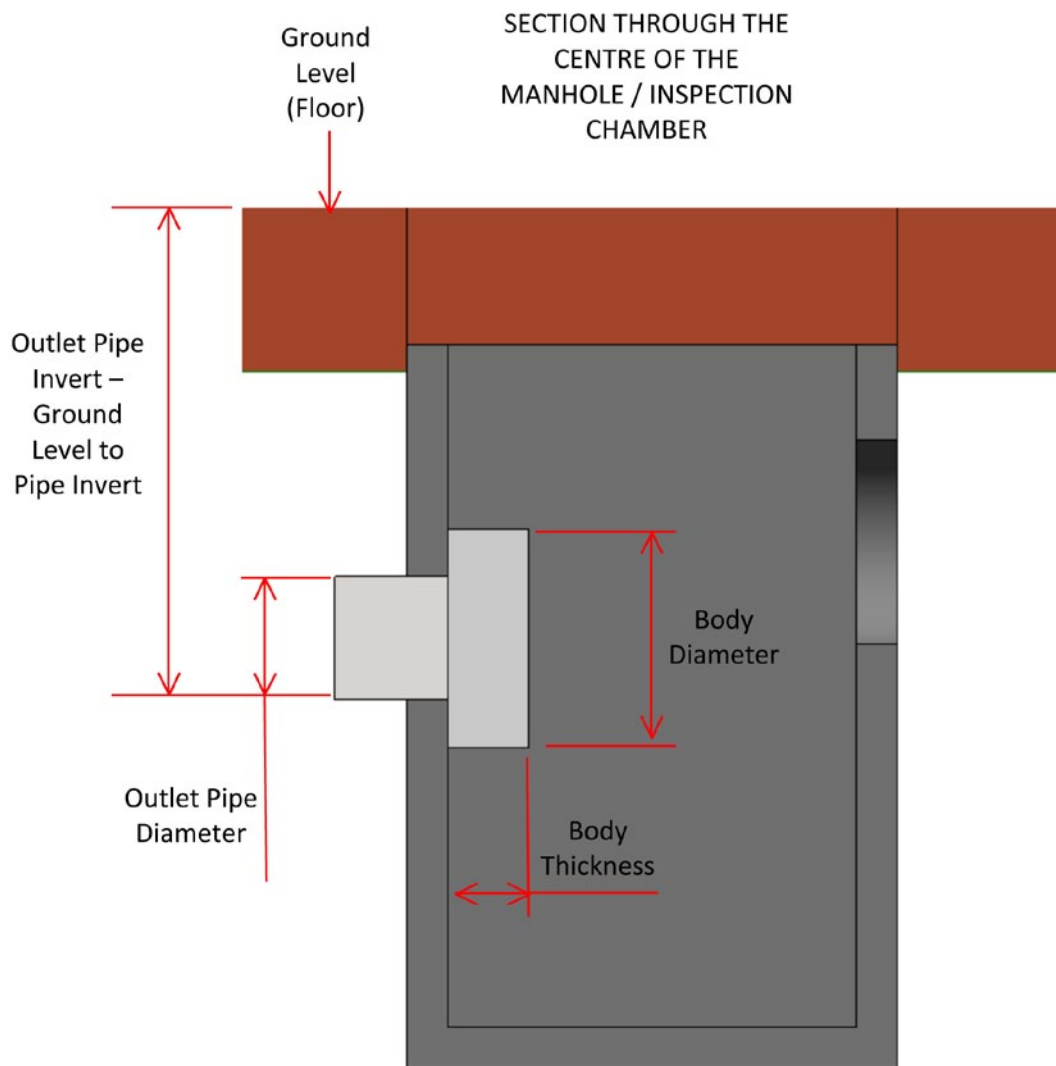
Note that the values entered for the orifice diameter and design flow will not alter the model, it is just a method of keeping all information associated with the model.

Every ACO Q-Brake Vortex design is bespoke so please contact ACO for the values below:

• ACO Q-Brake Vortex – Body Diameter

• ACO Q-Brake Vortex – Body Thickness

• ACO Q-Brake Vortex – Orifice Diameter

• ACO Q-Brake Vortex – Part Number

Properties

ACO Q-Brake Vortex - Round Type - For Circular Manholes

Generic Models (1)

Constraints
Dimensions

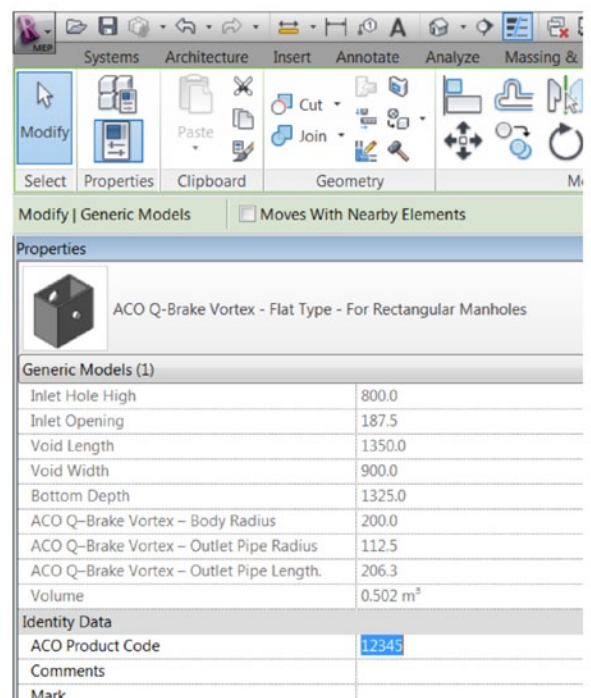|	
Manhole Height	1250.0
Manhole Internal Diameter	1200.0
Manhole Inlet Pipe Diameter	375.0
Manhole Inlet Pipe Invert – Ground Level to Pipe Invert	800.0
Manhole Overall Depth – Ground Level to Manhole Base	1500.0
Manhole Wall Thickness	75.0
ACO Q–Brake Vortex – Body Diameter	400.0
ACO Q–Brake Vortex – BodyThickness	150.0
ACO Q–Brake Vortex – Outlet Pipe Diameter	225.0
ACO Q–Brake Vortex – Outlet Pipe Invert – Ground Level to Pipe Invert	900.0
ACO Q–Brake Vortex – Orifice Diameter	0.0
ACO Q–Brake Vortex – Design Flow – Max Discharge @ Design Head	0.0

▶ Using the system and options

Ground Level (Floor)

SECTION THROUGH THE CENTRE OF THE MANHOLE / INSPECTION CHAMBER

Outlet Pipe Invert – Ground Level to Pipe Invert

Body Diameter

Outlet Pipe Diameter

Body Thickness

c. Customising the ACO Q-Brake Vortex product code.

The ACO Q-Brake Vortex product code can be customised by changing the value in the "Properties" box.

Every ACO Q-Brake Vortex design is bespoke so please contact ACO for the product code.

ACO Q-Brake Vortex - Flat Type - For Rectangular Manholes

Generic Models (1)

|	
Inlet Hole High	800.0
Inlet Opening	187.5
Void Length	1350.0
Void Width	900.0
Bottom Depth	1325.0
ACO Q–Brake Vortex – Body Radius	200.0
ACO Q–Brake Vortex – Outlet Pipe Radius	112.5
ACO Q–Brake Vortex – Outlet Pipe Length.	206.3
Volume	0.502 m³
Identity Data	
ACO Product Code	12345
Comments	
Mark	

▶ Type properties

The ACO Q-Brake Vortex file has a lot of useful information embedded within it, including installation and maintenance details.

This information, along with much more is either stored within the files or available through hyperlinks within the components type properties.

1. To access the information within the component, simply select the component and then click the "Type Properties" icon on the Revit ribbon at the top of the screen

2. The "Type Properties" information sheet will now be displayed on the screen. Simply scroll up and down the sheet to find the information you require.

3. The information within the "Type Properties" is stored as "Shared Parameters" so can easily be used when creating a schedule for example.
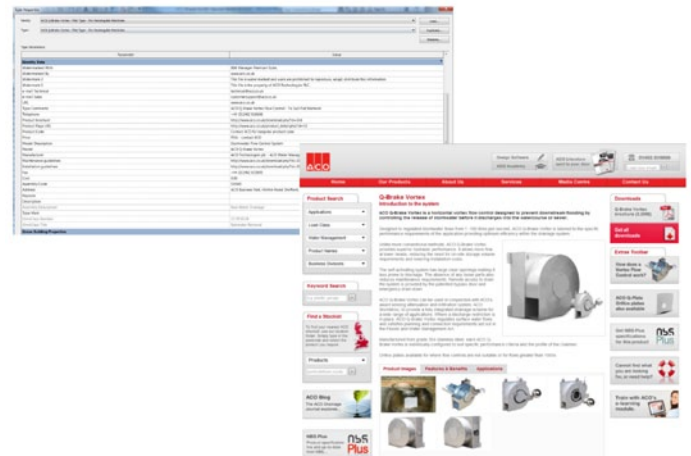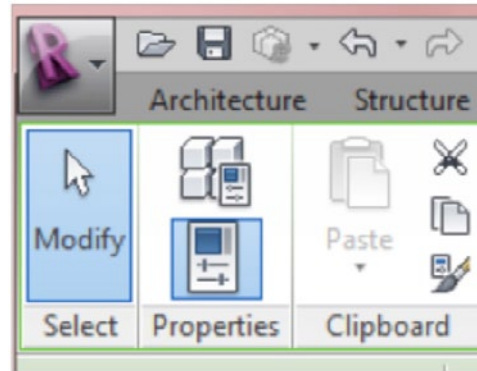
▶ Material library

The ACO Q-Brake Vortex file contains materials that are already pre-loaded into the components. When loading the ACO Q-Brake Vortex file into your project the pre-loaded materials will automatically transfer through.

▶ Other notes

You can add the ACO Q-Brake Vortex systems to your company template file. They will then be available without the need to load them when starting a new project. The ACO Q-Brake Vortex systems have been created in Revit 2013.

For further information on ACO Q-Brake Vortex including help with specification and design visit www.aco.co.uk or contact the ACO Water Management Design Services Team on 01462 816666 or email: technical@aco.co.uk