



**CAST IRON AIR BRICK COMPANY**

Building Architectural Enhancements

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Specification Sheet – CiabQ1-2018

[www.castironairbricks.co.uk](http://www.castironairbricks.co.uk)

## Quatrefoil Cast Iron Channel Grate System

Items Q1000 – Q855 – Q720 – Q580 – Q440 – Q300 – Q155



Cast iron channel grating grilles are made from grey iron, cast in sand moulds bonded with resin to a fine cast finish and are available in various lengths up to a maximum of a metre and can be used with or without the plastic channel.

### **Problem Solver**

In the past we have supplied imperial 3ft long cast iron grilles for pavement and walkway drainage that utilise a handmade cement/concrete channel that is protected along the edge by embedded 3ft long cast iron bearers. These types of channel are perfectly acceptable although they do require some skill in their creation so they can have varying quality issues, are difficult to specify and the attachment to modern drain water systems can be a little “ad hoc”. They are and have been perfectly

acceptable however the modern approach is to use a channel grating, something like Aco which utilises a plastic channel and has a pressed steel or plastic slotted grille sat on the top. This channel allows for the smooth seamless transfer of water that's easily cleaned, long lasting and can be installed with a leaf trap and also junction box to provide X L and T shaped junctions. The plastic channel is laid in a bed of concrete/cement and therefore, although it sounds like it's a weak and inferior construction to a "proper" hand crafted cement channel; it's actually just as strong. Better in fact, because, over time the base of the channel doesn't get worn away and is almost "non-stick" so is easy to clean.

But, the plastic grille tops or the pressed steel grille tops that are supplied with these channels have a limited lifespan and are not an authentic finish and look out of place in conservation and in the grounds of listed buildings. They do nothing to compliment any high end construction and the "heel proof" slots are so narrow there is barely enough space for any drainage. These block the moment it rains and require cleaning almost weekly to prevent flooding during a heavy downpour arrives.

To solve these problems we created the Quatrefoil cast iron channel grating to fit Manthorpe plastic channel (the same system as Aco) and Manthorpes range of channel accessories that make installing channel drains so easy. Unlike the narrow slots on the Aco system, the Quatrefoil has large drainage holes in a stunning period design reminiscent of the Victorian era, it's very strong, considerably stronger than pressed steel or plastic, it'll last a lifetime and it's beautiful to look at.

### **Construction**

The Quatrefoil grilles are made from fine cast grey iron and the channel made from black polypropylene .

### **Examples**

We've supplied the Quatrefoil grating to be used in the grounds of a property on Fassett Square, London. If the address isn't familiar it's more commonly known by it's fictional title "Albert Square" in the BBC soap "Eastenders". Down in Devon the 11<sup>th</sup> century parish church of St Petrox in Dartmouth is a spectacular backdrop for our Quatrefoils complete with channels as is The Pilgrims Rest, a Georgian grade 2 listed townhouse in Buckinghamshire.

The Quatrefoil design can still be seen today in windows of Norman churches in England and throughout many Gothic London properties and of course, in Europe in Paris at Notre Dame and Florence, Italy. It is fitting that it was chosen to drain surface water along the steps of the entrance to the Italian garden in Hyde Park, London. Several metres were laid to drain rainwater and prevent it running down the steps. The Installation has been bordered with tarmac along the pavement side and cement towards the flagstone steps. This has been part of the Royal parks renovation scheme and is Grade2 listed by Historic England. See photo below...



## **Finish**

The Quatrefoil cast iron grilles can be either bare metal or painted black. We can supply bespoke RAL painted air bricks to match customers' existing brickwork or requirements. Please note that items painted in such a way are nonreturnable, there is an additional charge for this and it will add 1-2 weeks onto the delivery time.

## **Environmental Benefits and Longevity**

The cast iron Quatrefoil grilles are UK made and are expected to last a lifetime. They are made in a traditional green sand method, three at a time using our patterns in the foundry in Nottingham, England.

Cast iron is not affected by UV and is fire resistant and fully recyclable. The cast iron used in the manufacture of this product is sourced from scrap iron with the addition of a small amount of pig iron. On average, 95% of the casting is recycled material. The moulds used to create the castings are generated using sand that is packed in a box with one of our patterns and this sand is used again and again to create further castings.

Casting in the UK has ensured all our products are made to strict emission and pollution levels in accordance with the latest legislation and that the workers creating these products are fairly paid and have a safe working environment in which to earn a living.

Melting iron requires a substantial amount of energy from either gas or electricity and to offset the CO2 emissions from this process we have planted over 300 trees in our own 3 acre wood. The annual absorption of CO2 from our wood is enough to ensure the production of our castings is carbon neutral.

As we don't import any of our products, the mileage from foundry to our finishing workshop and distribution bay in North Devon is very low keeping our carbon footprint small and once installed we expect this air brick to last a life time.

### **Maintenance**

The bare cast iron Quatrefoils will rust but this rust forms a protective layer to prevent further corrosion and requires no further maintenance. Painted Quatrefoils use three part epoxy primer followed by two part epoxy black gloss top coat which is extremely hard wearing. If they are used as part of pavement or walkway they are going to get scratched and or exposed to salt so may need repainting at some point. The gloss paint will dull over time and is likely to dull to a satin sheen in a year or two. The longevity of painted versus bare metal is unlikely to be of much consequence as we expect the cast iron that is used to make the grilles to last a lifetime before requiring replacement due to corrosion whether they are painted or unpainted.

When installing using the plastic channel, if using concrete or cement, ensure the channels are laid with the Quatrefoil grilles in place. To ensure they are easy to remove in the future, we do recommend inserting 1mm or 2mm plastic spacers either side of the cast iron grills at regular intervals before laying the concrete/cement to create a clearance gap. The spacers can be removed when the mortar has hardened.

### **Notes for architects**

The Quatrefoil can be used either as a vent grille or as a drainage grille.

As a vent, under the front step of a house, it is ideal for use as a full metre length so long as there is enough height to fit the grille. At 108mm high it is slightly higher than a typical period brick which is 75mm. The grille can be shortened and we do stock these shortened lengths already painted and ready for dispatch (orders that require painting will add a few days to dispatch time. This grille is also available in short lengths under the heading "Westminster" vents. Mesh can be used with this grille but only when it is used for ventilation and installed vertically. Grilles used for drainage with mesh fitted will block the moment it rains rendering the drainage holes useless. Because the Quatrefoil is mainly used as a drainage grille there is no option to buy it with mesh on the website to prevent mesh being accidentally installed. If you do require mesh and plan to install it as a vent please note this will have to be done via a proforma and not online.

As a drainage grille the Quatrefoil can be supplied with or without the plastic drainage channel. The drainage channel system we use is Manthorpe Smart Drain, full details of these with links to Manthorpes PDFs and further installation information is available on our website here...

<https://www.castironairbricks.co.uk/product/qcg-channel-grating-quatrefoil/>

Please note, unlike the plastic slotted grille shown with the original Manthorpe Smart Drain, our Quatrefoil conversion is not high heel friendly.

The channel to support the Quatrefoil grilles doesn't have to be made from plastic but can be created on site using cement/concrete and using cast iron bearers for a more authentic, period look. The cast iron bearers, sunk into the wet cement will form strong unbreakable permanent slots for the Quatrefoil to sit in and be easily removed. If intending to use this method and incorporate the cast iron bearers please note the Quatrefoil is metric and sold in metre lengths and the bearers are imperial and sold in 3ft lengths (910mm) so will need some thought in their application. We are happy to advise on this and can supply bearers cut to size to ensure a neat fit with the Quatrefoil gratings.

The Junction box that enables the Quatrefoil lengths to create T, L and X junctions is also from the Manthorpe Smart Drain system and more details of this and the accessory pack (containing 2 end caps and a sludge filter for the bottom of the channel) can be found via links here...

<https://www.castironairbricks.co.uk/product-category/channel-gratings/>

The Quatrefoil has a pair of pre drilled holes at each end of a metre length to coincide with the screw securing holes in the plastic channel. For grilles and channels cut shorter than one metre they will be supplied with only one pair of securing holes. In private gardens it is doubtful that the grilles really need to be screwed down as the weight of the grille is sufficient to hold it in place.

**SPECIFICATION TABLE – QUATREFOIL GRILLE**

<b>Item Code</b>	<b>Nom. Size (Inch)</b>	<b>Size in mm</b>	<b>Weight (KG)</b>	<b>Free Area with mesh (mm<sup>2</sup>)</b>	<b>Plate Thickness (mm)</b>
Q1000	39 x 4	995 x 108	5	32000	10
Q855	33 x 4	851 x 108	4	27000	10
Q720	28 x 4	711 x 108	3.5	22000	10
Q580	23 x 4	572 x 108	3	17000	10
Q440	17 x 4	431 x 108	2.5	12000	10
Q300	12 x 4	289 x 108	2	8000	10
Q155	6 x 4	148 x 108	1	4000	10

**Material – Grey cast iron 250**

**British Made Product**

Cast iron foundry source –made in Nottingham, England.

For more details please see our website...

<https://www.castironairbricks.co.uk/product/qcg-channel-grating-quatrefoil/>

Alternatively email or call us

[Sales@castironairbricks.co.uk](mailto:Sales@castironairbricks.co.uk)

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Delivery for this product is normally from stock for low volume orders and these are sent out the next working day for orders received before 12 o'clock. Ideally we hold 50 units bare metal and in painted black we hold 5 units of full one metre lengths and one each of the shorter lengths. If we need to paint more black this will be 5-7 days longer, bespoke painted fronts (customer supplied RAL) are typically 10-14 days

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