

Design and Installation Considerations: Cross Flow

This technical bulletin will introduce the drainage issue of cross flow, what problems it creates, why modern construction could increase the chance of it occurring, the British Standards and how Terrain can assist in avoiding it.

What is Cross Flow?

Cross flow can be defined as waste water flowing from a branch in a stack in to a diagonally opposing connection rather than down the soil stack.

What problems can be created by cross flow?

- Waste flowing from one appliance to another
- Potential for blockages

Why modern construction could increase the chance of it occurring?

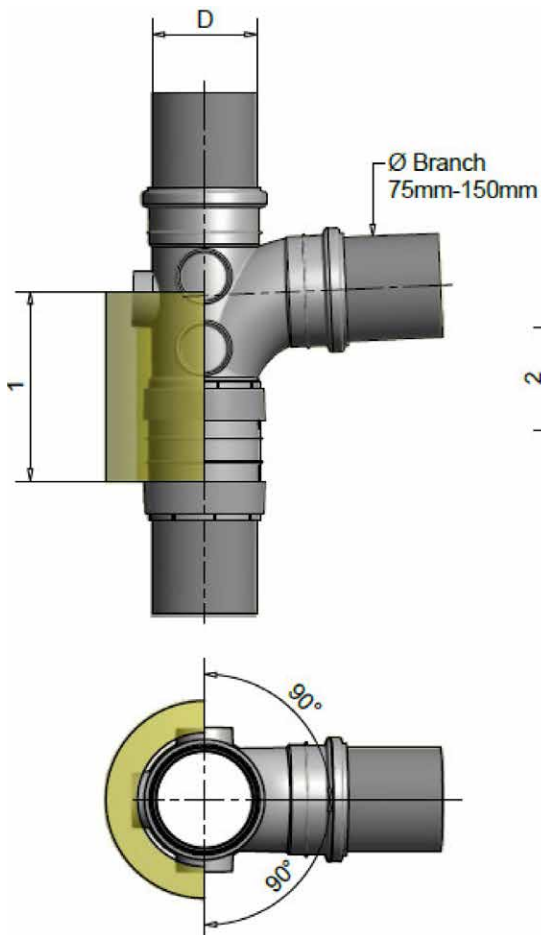
Modern building practises have increased the pressure on drainage systems and installers by reducing the space available for drainage systems within a building in addition to a lack of skilled labour in an increasingly busy market.



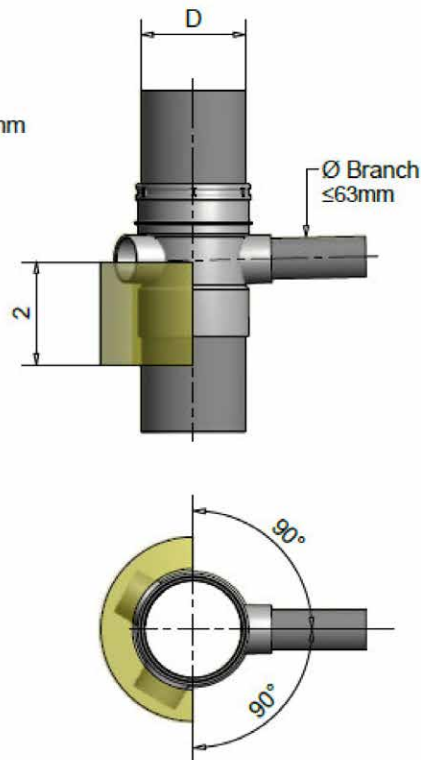
The British Standards

No connection zones for the prevention of cross-flow

A) No connection zone opposite a large branch



B) No connection zone opposite a small branch



Legend:

1 = 200mm independent of stack diameter
2 = A (see table)

Stack Diameter (D)	Height of Zone (A)
75mm	90mm
100mm	110mm
125mm	210mm
150mm	250mm

Connections at 90° of the branch or on the same centre line are permissible as they are not entirely in the zone of no connection.

How Terrain can help avoid cross flow?

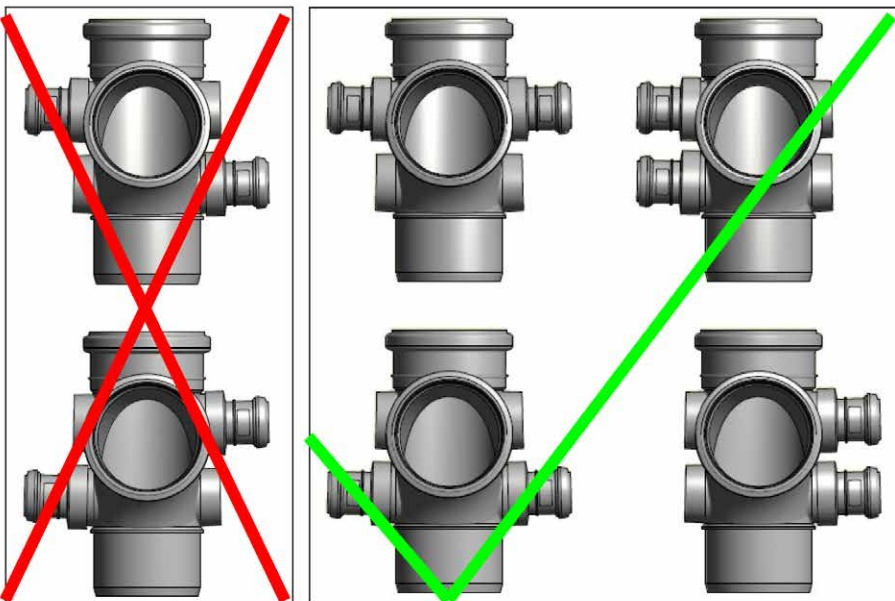
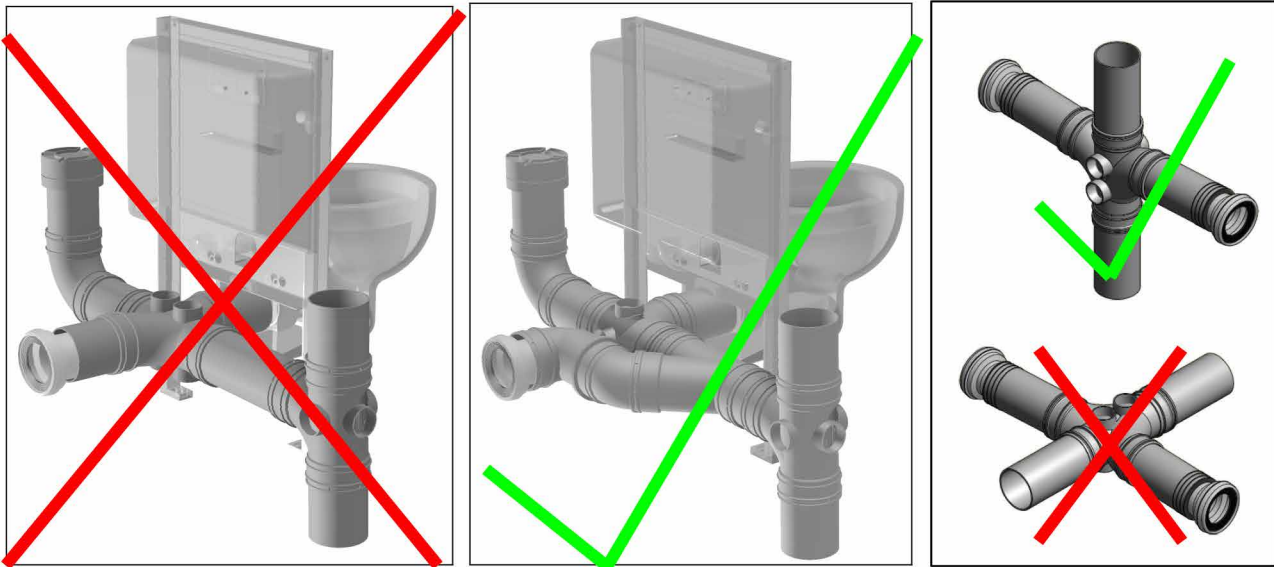
Products

Polypipe Terrain can assist in the prevention of cross flow in a number of ways. Firstly we have a number of products available which are designed to minimise the risk of cross flow occurring whilst also reducing the space required for installation.

Technical Support Services

The Technical Services support team are here to provide technical support and assistance.

The images below show a good and bad installation of a back to back WC configuration. With the use of a double branch this may allow waste to flow from one WC to the adjacent WC. The correct configuration staggers the connections which alleviates any possibility of cross flow. The double branch can however be installed within the vertical stack.



For fittings within the Terrain range which have 4 boss connections there are a number of permissible and impermissible configurations possible. The images on the left show configurations which are and are not allowed.

Polypipe Terrain's Centre of Excellence



At Polypipe Terrain's Aylesford base the company has invested in an industry leading Centre of Excellence which includes a Hydraulic Tower that enables visitors to see plumbing installation good and bad practice. The Centre of Excellence is managed by our training manager who delivers a number of courses each year from our popular 'Introduction to Above Ground Drainage' to truly bespoke customer presentations that can be specific to the customer and/or the project they are working on.

If you are interested in seeing which courses are available in the future or would like to find out more about bespoke training sessions please email me Daniel.Oliver@polypipe.com.



Technical Bulletin 7 (2014)