

## ACO pipe

### Generally

The following standards will help designers to select the correct size of pipe system for a particular application: EN 12056 gravity drainage systems inside buildings. EN 752 drain and sewer systems outside buildings. Installation should be in accordance with the manufacturer's recommendations as well as with EN 12056-2, EN 12056-3 and EN 752.

#### Pipe cutting

If it is necessary to adapt or shorten pipe lengths where tools are used, the cut must be square, clean and chamfered.

Suitable cutters are available from ACO.

These tools are designed to form the edge bevel on the male spigoted end of the pipe. Carbon steel cutting wheels are not suitable.

#### Pipe jointing

The assembly of pipe joints is quick and straightforward requiring only a light application of lubricant available from ACO to the chamfered pipe end. Ensure that the matching ends of the pipes and fittings are clean and free from contamination. Push fit the pipe end into the socket, but do not push fully into the socket recess so as to allow for thermal expansion within the system.

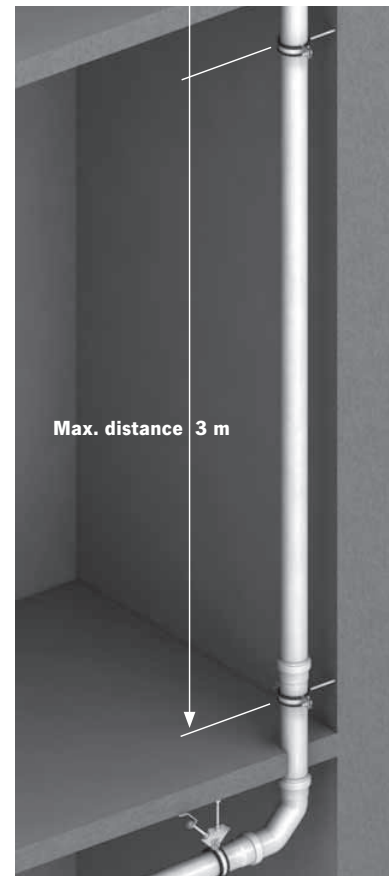


### Vertical pipe stacks

The load applied with a fluid in the pipe is vertically down. Position the highest bracket adjacent to the top inlet of the pipe, then mount brackets at 3 meter spacings. At the bottom of the vertical pipe, use a bracket within 200 mm of the bottom. Fit brackets at each change of pipework is direction or junction points. Pipework should be at least 30 mm from the wall to facilitate maintenance and painting.

#### Pipe weights

Engineers should be aware of minimum and maximum weights when designing vertical stack and horizontal pipe run systems. Generally, when the pipe is completely full of water, then the vertical deflection of the pipe between brackets should not exceed 1.5 mm. The discretion of the installer should be applied in each instance to ensure that the pipe is adequately supported.



## Horizontal pipe runs

As a guide, use the table below for bracket spacing on horizontal pipes.

### Pipe diameter bracket spacing

Pipe ø [mm]	Length [m]
50	2.0
75	2.3
110	2.5
125	3.0
200	3.0
250	3.0

Recommended distances; for installation follow your local standards.



Horizontal pipework should be supported by pipe brackets in 3 meter intervals maximum. One bracket should be within 300 mm of the pipe joint and the other approximately at the midpoint of the pipe length, but not more than 3 metres from the next bracket (depending on the pipe diameter-refer to the upper table)

Additional brackets should be used at changes of direction and at junction points

immediately downstream of the fitting. Horizontal pipe runs may be installed at a fall of 1 in 50 and feeder connections should be achieved using 45° branches. Where long pipe runs occur i.e. greater than 15 meters, a fixing arm should be attached to the bracket to prevent pendulum movement within the system.

## Below ground installation

### Back-filling

Back-filling around the pipe can only start when the position of the pipe has been checked and approved.

### Compression

Care should be taken to avoid distortion of both the pipe run and the pipe itself during back-filling and compaction. Avoid tipping backfill material directly onto the pipe system. If mechanical compaction is used, the weight and resultant compressive force must be taken into account to avoid distortion. Back-fill materials should be compacted to a minimum of 93%.

### Filling in the excavation

Soil from the excavation can be used for filling, but larger stones and blocks should not be used. Compression of the filling material outside reinforced areas is not necessary if the settling will not cause problems or damage.

### Local standards

It is recommended to install pipes according to local standards.

