

Installing plastic pipes

Fabrication



Cutting

Plastic pipe should always be cut with a tool designed for use on the plastic material being installed. It is not recommended to use saws or other cutting equipment that is used for cutting metals, as the blade construction may snag on plastic or cause an unacceptable build up of heat. In addition, tools in use with metals may contaminate the plastics jointing area with grease or oils.

In all cases the priority is to ensure that the pipe is cut square. When used with socket type fittings this ensures that the pipe will bottom out in the socket - this is essential for maximum joint strength. When used for butt fusion joints a square cut minimises planing before the joint is made.

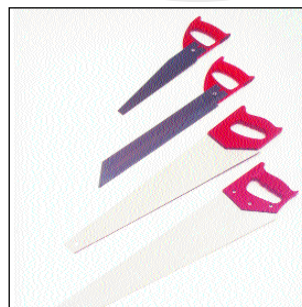
Cutting small diameter plastic pipe

For pipe diameters under 2"/50mm, Polyethylene, Polypropylene, ABS and lighter wall PVC-U and PVC-C can be cut with ratchet operated cutting shears. These fast-cutting tools produce a square cut and work well with ductile materials such as PE and PP, but also will cut other materials provided that the pipe wall is not too thick.



Cutting small to medium diameter plastic pipe

For pipe diameters up to 8"/200mm, a rotary quick release pipe cutter with a cutting wheel for plastic pipe is the recommended tool. The cutter is located in the cutting position then rotated by hand to cut the pipe. Two to eight turns will cut most plastic pipes, depending upon the material and the wall thickness.



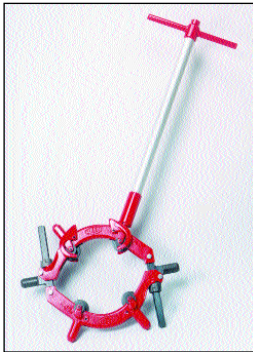
Hand saws with tooth design, set and hardness specifically for plastic pipe may also be used, provided that a mitre box or jig is used, or the pipe is marked and checked after cutting to ensure a square cut.

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Cutting large diameter plastic pipe



Pipe in diameters above 8"/200mm may be cut with large diameter wheel pipe cutters fitted with blades for use on plastic pipe. The cutters are fitted with outboard rollers to ensure that the cut remains square.

Using power tools

Power tools may be used provided they are fitted with suitable blades and run at a cutting speed suitable for the material to be cut. The following diagrams illustrate the optimum cutting blade and speed for the common plastic piping materials:

Machining Guide - Band Saw

Material	Setting Angle α	Rake Angle γ	Cutting Speed m/min	Tooth Pitch mm
PVC-U	30 - 40	0 - 5	1200	3
PVC-C	30 - 40	0 - 5	1200	3
ABS	15 - 30	0 - 5	300	2 - 8
PP	20 - 30	2 - 5	500	3 - 8
PE	20 - 30	2 - 5	500	3 - 8
PVDF	20 - 30	5 - 8	300 - 500	2 - 5
ECTFE	20 - 30	2 - 5	500	3 - 8

Machining Guide - Circular Saw

Material	Setting Angle α	Rake Angle γ	Cutting Speed m/min	Tooth Pitch mm
PVC-U	5 - 10	0	3000 - 4000	3 - 5
PVC-C	5 - 10	0	3000 - 4000	3 - 5
ABS	5 - 10	0 - 5	1000	2 - 5
PP	20 - 30	6 - 10	2000	3 - 8
PE	20 - 30	6 - 10	2000	3 - 8
PVDF	5 - 10	0 - 10	1000 - 2500	2 - 5
ECTFE	20 - 30	6 - 10	2000	3 - 8