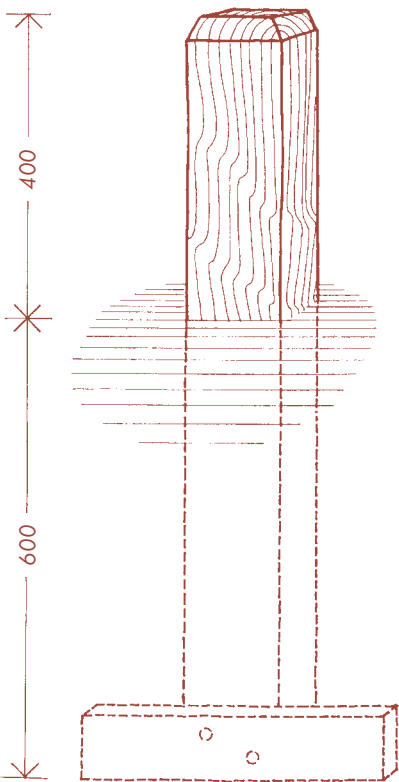
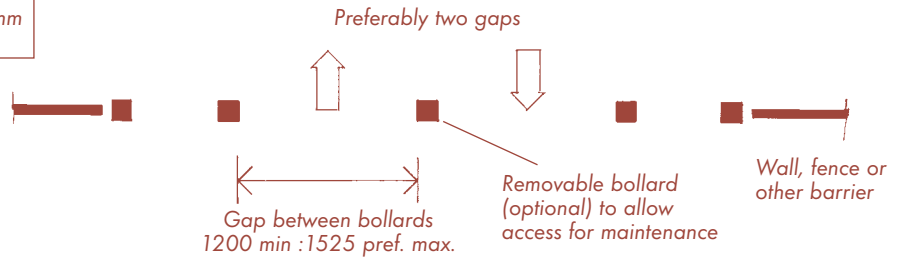




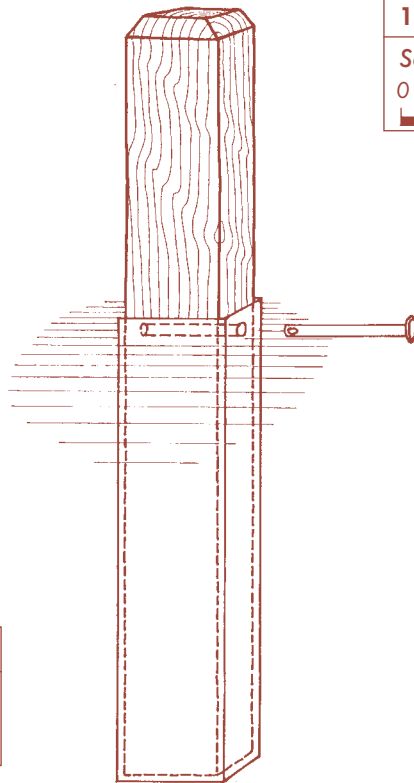
Information Sheet No.1.1
Vehicle Barrier: Bollards

(Page 1 of 2)

1.1A Plan : General Layout
Scale 1:50
0 2000mm

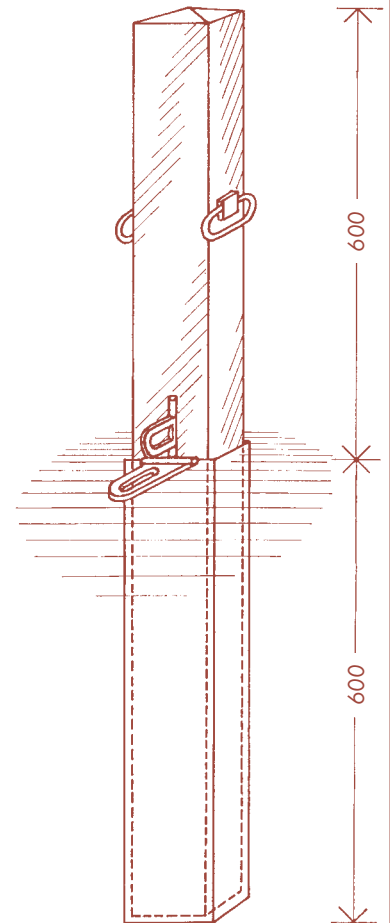


1.1B Fixed Timber Bollard
Scale 1:10
0 500mm



1.1C Removable Timber Bollard
Scale 1:10
0 500mm

1.1D Removable Steel Bollard
Scale 1:10
0 500mm



Conforms to BS 5709	Ease of use for Pedestrians	Accessible to Motorised Wheelchair Users	Accessible to Manual Wheelchair and Pushchair Users	Accessible to Horseriders	Accessible to Pedal Cyclists	Accessible to Motorcyclists	Accessible to Motor Cars
✓	☺	✓	✓	✓	✓	✓	✗



• Notes

Bollards provide one of the simplest means of controlling access by vehicles. The distance between the bollards will determine the types of user that will be able to pass.

The recommended minimum gap of 1200 will allow access by pedestrians, people with prams and pushchairs (single and double), pedal cyclists, motorcyclists, horseriders, and users of manual and motorised wheelchairs. The preferred maximum gap of 1525 provides a little more space for people to pass and is still inaccessible to motor cars.

Bollards can be fabricated from timber, steel or stone; the choice of material and design will depend upon the setting and the likelihood of vandalism and damage.

Bollards can also be purchased from specialist suppliers in a wide range of styles and designs and are available in materials such as cast iron, aluminium, steel, composites, plastic and timber; these are likely to be more expensive than the 'home-made' designs shown overleaf (see below for details of some commercial suppliers and manufacturers).

Timber bollards are generally more suitable for rural locations but they are more easily damaged or vandalised. The design shown overleaf (Dwg. 1.1^B) is visually attractive, can be manufactured locally from softwood or a suitable hardwood, and is cheap and easy to install. If it is necessary to make provision for occasional vehicle access (e.g. for site maintenance purposes), one bollard can be installed in an outer steel sleeve, using a padlocked steel pin to prevent removal (Dwg. 1.1^C). Commercial timber bollards are often manufactured from non-native hardwoods such as greenheart, wallabe and opepe.

Steel bollards provide a more effective vehicle barrier (Dwg. 1.1^D). The design shown overleaf (which is lockable and removable) can be manufactured to order by a local blacksmith.

Locally sourced stone can also be used to create effective and permanent bollards: suitable materials include boulders, large stone setts, and re-used stone gate posts.

• Construction and Installation Details

The recommended size for the timber bollards shown overleaf (Dwg. 1.1^B), which is based on a design from Plessey Woods Country Park, Northumberland, is 1000 x 125 x 125. The height above ground is 400. To deter removal, a length of rail (c. 400) should be nailed to the bottom of the bollard before installation. If a line of bollards is to be installed, the simplest installation technique is to excavate a trench to a depth of 600, nail the base of the bollards to lengths of rail (at the correct distance apart), put the railed bollards in the trench and backfill.

If a removable timber bollard is installed (Dwg. 1.1^C), the steel sleeve should be fabricated from 6mm steel plate and concreted into the ground; its internal section should be 130 x 130. The bollard can be locked in place with a padlocked steel pin. If the bollard is removed for any length of time, the sleeve should be blocked with a timber blank to avoid the risk of injury to the public or the sleeve filling with debris.

The removable metal bollard (Dwg. 1.1^D) is based on a design from the Perth and Kinross Countryside Trust and was fabricated by a local blacksmith from 6mm steel plate. The bollard is 1200 x 100 x 100 and fits into a steel sleeve with an internal section of 105 x 105.

• Design Source and Contacts for Further Information

Design Source : Timber Bollard - Countryside Service, Environment Directorate, Northumberland County Council, County Hall, Morpeth, Northumberland. NE61 2EF. Tel. 01670 533000.

Steel Bollard - Perth & Kinross Countryside Trust, Council Building, 2 High Street, Perth. PH1 5PH. Tel. 01738 475000

Commercial Suppliers: The Great British Bollard Company, PO Box 6, 35 - 37 Clive Street, North Shields, Tyne & Wear. NE29 6LY. Tel 0191 259 0000

Furnitubes International Ltd., Seager Buildings, Brookmill Road, London. SE8 4JT.
Tel. 020 8694 9333

Woodscape Ltd., Upfield, Pike Lowe, Brinscall, Nr Chorley, Lancashire. PR6 0SP.
Tel. 01254 830886.

Bollards Ltd., 11 Nant Bychan, Moelfre, Anglesey. LL72 8HE. Tel. 01248 410806.