An alternative to cast iron & steel bollards

Polyurethane Elastomer (PU) is a thoroughly modern material offering low maintenance coupled with excellent resistance to the weather and many other types of abrasion. It is an ideal material for sites which present harsh environmental conditions, such as coastal locations. There are 18 bollard designs in the range - 12 of which echo the traditional forms of a selection of our cast iron originals, and 6 are a similar design to our tubular steel bollards. The bollards are manufactured from a tough, durable engineering grade polyurethane cast in a mould and onto a steel core. The surface finish of a PU bollard is typically much smoother than for cast iron (which is cast at high temperatures into sand moulds, which combine to give the material its characteristic textured finish). PU bollards are finished in a two pack polyurethane gloss coating to any RAL or BS 4800 colour reference.

A wide range of designs and options

Like other materials offered by Furnitubes, PU is very versatile, enabling options and features such as decorative highlighting, removable versions, integral cast-in crests and logos etc on our standard range of bollards, as shown in the examples below. We are also able to create new moulds - as replicas of cast iron originals, or completely new designs to your own specification.

Highlighting
Feature rings and necks on decorative bollard designs can be highlighted in contrasting colours as required

Removable bollards
All PU bollards are available as removable versions, with a standard or F1 series socket, depending on the application

Reflective tape
Reflective tape in a wide range of colours can be applied most bollards to improve their night-time visibility

Crests
Borough crests or corporate logos can be cast integrally on most bollards and emphasised in contrasting colours

Polyurethane (PU) bollard construction

Durable engineering grade PU outer moulding from top of bollard to ground level

Steel tube core extending below the PU moulding to form the bollard root

Tie bars through the steel core improve keying the bollard into its concrete foundation block
### Polyurethane Bollards

<table>
<thead>
<tr>
<th>Brand</th>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BERESFORD</td>
<td>BER 001</td>
<td>Polyurethane elastomer bollard</td>
</tr>
<tr>
<td>DORIC</td>
<td>DO 0520</td>
<td>Polyurethane elastomer bollard</td>
</tr>
<tr>
<td>TRANSPORT</td>
<td>TRL 900</td>
<td>Polyurethane elastomer bollard with 2 yellow reflective bands</td>
</tr>
<tr>
<td>CITY</td>
<td>CIT 001</td>
<td>Polyurethane elastomer bollard</td>
</tr>
<tr>
<td>MANCHESTER</td>
<td>MAN 001</td>
<td>Polyurethane elastomer bollard</td>
</tr>
<tr>
<td>CANTERBURY</td>
<td>CTB 001</td>
<td>Polyurethane elastomer bollard</td>
</tr>
</tbody>
</table>

**Options:** Removable bollard

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**POLYURETHANE BOLLARDS**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Dimensions</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>KEN 001</strong></td>
<td>Polyurethane elastomer bollard</td>
<td>Ø160</td>
<td>Removable bollard</td>
</tr>
<tr>
<td><strong>KEN 002</strong></td>
<td>Polyurethane elastomer bollard</td>
<td>Ø160</td>
<td>Removable bollard</td>
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<tr>
<td><strong>WAT 145</strong></td>
<td>Polyurethane elastomer bollard</td>
<td>Ø145</td>
<td>Removable bollard</td>
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<tr>
<td><strong>CRW 115</strong></td>
<td>Polyurethane elastomer bollard</td>
<td>Ø115</td>
<td>Removable bollard</td>
</tr>
<tr>
<td><strong>CRW 815</strong></td>
<td>Polyurethane elastomer bollard</td>
<td>Ø90</td>
<td>Removable bollard</td>
</tr>
</tbody>
</table>

**WHERE TO ORDER**

- **KENTON SINGLE**
  - Model: KEN 001
  - Ref: S-157-01-14

- **KENTON DOUBLE**
  - Model: KEN 002
  - Ref: S-157-01-14

- **WATFORD**
  - Model: WAT 145
  - Ref: S-157-01-14

- **CRAWLEY**
  - Model: CRW 115
  - Ref: S-157-01-14

- **CREWE**
  - Model: CRW 815
  - Ref: S-157-01-14

- **EGHAM**
  - Model: EGH 001
  - Ref: S-157-01-14
General specification
Bollards are manufactured from a tough, durable engineering grade polyurethane cast over a tubular steel core. PU bollards are finished in a two pack polyurethane gloss coating to any RAL or BS 4800 colour reference.

Installation details
It is important that bollards have a suitable foundation so that they remain firmly in place if they are knocked at any time. Shown below are the minimum recommended requirements for concrete foundation blocks for fixed and removable bollards in typical installations in normal ground conditions. Particular attention should be paid to the following:
- Set the bollard at the depth / height as shown in the specific bollard illustration
- Ensure concrete is well compacted around and between the tie bars on the bollard root

The professional advice of a highway / civil engineer should be sought if there are any queries regarding the ground conditions or doubts over the suitability of the foundation.
Removable bollards
Within a continuous line of fixed bollards there is often a requirement for a number of removable bollards to allow for occasional vehicular access. All of our PU bollards are available as removable versions. We offer two types of removable bollards - for use with Standard or F1 Series sockets - the features and operation of which should be considered in detail to determine which is the most suitable product for your application. For both socket options and most bollards, the steel core of the bollard also serves as the spigot for insertion into the ground socket.

Standard sockets
- Simple economic solution using galvanised mild steel socket
- Ease of operation is convenient for situations where bollard needs to be removed quickly and / or frequently, such as emergency access routes
- Hasp fitted to bollard passes through slot in socket hinge plate for locking with an FB14 padlock (please order separately) or similar
- Hinged cover plate sits flush to finished ground level when closed but is not designed to be driven over - therefore most suited to short term removal situations
- Bollard, socket and padlock only - no further loose parts
- Loose fit of square bollard spigot locating in circular socket means bollard is not 100% rigid (but can’t be removed if locked)

F1 series sockets
- Neat flush-fitting solution constructed in heavy duty cast steel and hard-wearing plastics
- Takes longer (than standard socket) to insert / remove bollard, so may not be suitable for emergency vehicular routes or when bollard needs to be removed frequently
- Circular bollard spigot locates in circular socket with locking bolts to fully rigidify the bollard
- Separate plug supplied for inserting into socket when bollard is removed
- Socket designed and tested to withstand vehicular over-run up to 12.5 tonnes point loading
**Standard sockets**

Padlocks and keys are not supplied as standard with a removable bollard and socket assembly, but FB14 padlocks and keys can be supplied separately.

**Operation**

The base of the socket should be cleared of any build up of debris which could prevent the bollard spigot from being inserted to its full depth. Fold back the hinge plate and insert the bollard into the open socket in the orientation shown, rotate the plate over the locking hasp and secure the bollard to the socket with an FB14 padlock or similar. On removing the bollard, check there is no debris on the top face of the socket before lowering the hinge plate into the closed position. If installed correctly, the plate will be flush with the surrounding paving so as not to present a trip hazard. Socket hinges should be lubricated regularly to ensure continued smooth operation.

**Dimensions**

The plan dimensions of the socket hinge plate depend on the bollard type, size & shape at ground level - if these dimensions are important to you please contact us for details. For all sockets, the below ground socket root is approximately 300mm deep.

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**F1 series sockets**

In addition to the components shown, a levelling pole (short length of steel tube) is also supplied to assist in setting the socket true plumb in the ground.

**Operation**

Insert the bollard steel root into the open socket and tighten the 2no. bolts in the locking chamber (spanner supplied) onto the sides of the root. Place and lock the lid on the locking chamber. When the bollard is removed insert the plug into the socket and secure with the same bolts. The socket should be flush with the ground if installed correctly.

**Dimensions**

The plan dimensions of the socket depend on the bollard type, size & shape at ground level - if these dimensions are important to you please contact us for details. For all sockets, the below ground socket root is typically 300mm deep.
Eco-friendly & economic bollards
Furnitubes offer an economical range of recycled plastic bollards, which provide a durable, environmentally friendly option for a wide range of developments and even temporary sites. The recyclable bollards are long lasting, robust, UV stable, splinter and knot-free and therefore very low maintenance. Made from high quality pre-processed recycled plastics, the bollards are solid and can be treated the same way as timber bollards, with connections such as screwing possible, allowing the provision of chains, signs and reflective tape.

<table>
<thead>
<tr>
<th>ABERDEEN CIRCULAR</th>
<th>ABERDEEN CIRCULAR</th>
<th>ABERDEEN SQUARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABR 150</td>
<td>ABR 150 T</td>
<td>ABR 140</td>
</tr>
<tr>
<td>Recycled plastic bollard</td>
<td>Recycled plastic bollard with groove and reflective tape</td>
<td>Recycled plastic bollard</td>
</tr>
<tr>
<td>Graphite black colour</td>
<td>Graphite black colour</td>
<td>Graphite black colour</td>
</tr>
</tbody>
</table>

OPTIONS:
- Brown colour
- Reflective discs
- Reflective discs
- Reflective discs

www.furnitubes.com tel: 0208 378 3200
POLYURETHANE & RECYCLED PLASTIC BOLLARDS