For retail parks and shops, ram-raids are an ever present threat. Marshalls range of Rhino and Ferrocast Bollards can be specified with an Anti-Ram option. This specification differs by material, but all offer added protection against ram-raids. Our specifications are as follows:

**Stainless Steel**
- Reinforced with two internal steel tubes to further increase strength of the bollard.
- Reinforced Anti-Ram – Bollards are reinforced with three steel tubes to maximise strength in areas which require even greater protection

**Steel**
- An internal steel joist is added to increase strength and prevent vehicles from penetrating beyond the bollard.
- Reinforced Anti-Ram – As well as an internal steel joist, the bollard is filled with concrete and capped to add even greater strength.

**Ferrocast®**
- Bollards are cast around several inner cores to increase strength.

**Product Range**
The following pages show our ranges of bollards; look at the specification tables to see if the anti-ram option is available for the bollard you require. Should you have specific requirements not in our standard range, then please contact a member of our Sales Team to discuss your project in more detail.

**Installation**
Each material type/specification has different installation details. For more information please contact a member of our Sales Team.
Stainless Steel Bollards

Rhino stainless steel static bollards provide perimeter protection whilst also adding contemporary style and elegance to the surrounding landscape. Bollards are available in a number of modern styles, with each bollard available in a variety of length and diameter options.

Rhino stainless steel bollards are manufactured from a carefully selected grade of 316L stainless steel (1.4401). Exceptionally strong and requiring very little maintenance, they are ideal for a wide variety of applications including pedestrian walkways and areas of protected parking.

The use of grade 316L (1.4401) stainless steel offers a number of significant advantages:

**Higher resistance to corrosion:** Whilst stainless steel is corrosion resistant, the naturally forming chromium rich oxide film that protects it can be broken down over time by chlorine and chlorides. However, due to the increased levels of nickel in its alloy structure, grade 316L (1.4401) has a much higher resistance to corrosion.

**Greater resistance to pitting and staining:** In comparison with other grades of stainless steel, grade 316L (1.4401) is less susceptible to surface pitting.

**Low Maintenance:** As a result of its quality, grade 316L (1.4401) requires very little maintenance to retain its original appearance. This means that the material provides attractive ‘life cost’ benefits when compared to alternatives, such as carbon steels.

**Recyclable:** Stainless steel is 100% recyclable. Around 90% of stainless steel is made from recycled scrap. Due to this, stainless steel has much less of an impact on the environment and scarce resources, providing an all round “Green” material for architects to specify.

**Specification options**

Rhino Stainless Steel Static bollards are available with a variety of specification options to meet the requirements of any application:

**Standard:** Ideal for demarcation purposes, standard bollards provide visual separation between vehicle and pedestrian areas. Standard Rhino stainless steel bollards feature a 2mm wall thickness, with the exception of the M3 Flat and Mitre top bollards, which feature a greater 6mm thick wall for increased strength.

**Reinforced:** A galvanised steel tube is added for increased internal strength. Suitable for areas where there is a higher risk to pedestrians or premises from moving vehicles.

**Anti Ram:** Reinforced with two internal steel tubes to further increase the strength of the bollard. This specification is ideal for ram-raider deterrence and preventing vehicles from penetrating beyond the bollard.

**Reinforced Anti Ram:** Bollards are reinforced with three mild steel tubes for areas requiring maximised ram-raider protection.

**Fixing Options:**

**Root Fixing:** Rhino 1000mm bollards are supplied with a 500mm root depth as standard, with the exception of the 114mm diameter RS 001 bollard, which has a 300mm root. The root is placed underground and secured using concrete. A cross bar keys into the concrete for added strength, ensuring that the bollard cannot be moved or twisted. Differing heights are also available, however the required root depths differ dependent on the option selected. Specific lengths are also available on request.

**Base Plate:** Bollards can be supplied complete with an integral base fixing plate which is attached to the ground using bolts. This option is ideal for applications where ground excavation is not an option.

**Lift out and Lockable:** Removable bollards allow temporary vehicle access and can be replaced when works are complete.

Please refer to page 73 for customisation and finish options.
Stainless Steel Bollards

RS 001

RS 002

RS 004

RS 005

RS 007

RS 150
# Stainless Steel Bollards

## M3 Flat Top Bollard

<table>
<thead>
<tr>
<th>Product Description</th>
<th>Product Reference</th>
<th>Diameter (mm)</th>
<th>Overall Height (mm)</th>
<th>Weight (kg)</th>
<th>Standard Finish</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi dome top SS bollard</td>
<td>RS001</td>
<td>101</td>
<td>1500 1000</td>
<td>8</td>
<td>Brushed Satin</td>
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</tr>
<tr>
<td>Semi dome top engraved bollard</td>
<td>RS002</td>
<td>114</td>
<td>1500 1000</td>
<td>9</td>
<td>Brushed Satin</td>
<td><img src="options.png" alt="Options" /></td>
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<tr>
<td>M3 45 Mitre top SS bollard</td>
<td>RS150</td>
<td>101</td>
<td>1500 1000</td>
<td>7</td>
<td>Brushed Satin</td>
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</table>

## M3 Mitre Top Bollard

<table>
<thead>
<tr>
<th>Product Description</th>
<th>Product Reference</th>
<th>Diameter (mm)</th>
<th>Overall Height (mm)</th>
<th>Weight (kg)</th>
<th>Standard Finish</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat top SS bollard</td>
<td>RS004</td>
<td>101</td>
<td>1500 1000</td>
<td>8</td>
<td>Brushed Satin</td>
<td><img src="options.png" alt="Options" /></td>
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<tr>
<td>Flat top matt band SS bollard</td>
<td>RS007</td>
<td>101</td>
<td>1500 1000</td>
<td>8</td>
<td>Bright Polish</td>
<td><img src="options.png" alt="Options" /></td>
</tr>
<tr>
<td>Flat top Bollard with single DDA Band</td>
<td>RS150</td>
<td>101</td>
<td>1500 1000</td>
<td>7</td>
<td>Brushed Satin</td>
<td><img src="options.png" alt="Options" /></td>
</tr>
</tbody>
</table>

*RS001 with 114mm diameter is also available with a total length of 1500mm. Prices shown for standard lengths and diameters for alternative specifications and options please contact our sales order office. **Band is adhered to surface only.

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**Stainless Steel Bollards**

**OPTIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Reinforced</th>
<th>Anti Ram</th>
<th>Fixing Method</th>
<th>Lift Out &amp; Lockable</th>
<th>Base Plate</th>
<th>OptionalExtras</th>
<th>Utility Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAG</td>
<td></td>
<td></td>
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<tr>
<td>HAG</td>
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</tbody>
</table>

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**Chart**: Stainless Steel Bollard Specifications and Options

<table>
<thead>
<tr>
<th>Diameter (mm)</th>
<th>Overall Height (mm)</th>
<th>Weight (kg)</th>
<th>Standard Finish</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>89</td>
<td>1200 1000</td>
<td>9</td>
<td>Brushed Satin</td>
<td><img src="options.png" alt="Options" /></td>
</tr>
<tr>
<td>114</td>
<td>1200 1000</td>
<td>9</td>
<td>Brushed Satin</td>
<td><img src="options.png" alt="Options" /></td>
</tr>
</tbody>
</table>

**Shown with yellow reflective bands**

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**Stock**

- **Bollards**: BLLD07
- **Removable Bollards**: Q50 190
- **Q50 196**

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**Contact**: Sales Office: 0870 600 2425

**Website**: www.marshalls.co.uk/commercial