

## Product Information: Bollards

### RHINO STEEL STATIC BOLLARDS

Tubular steel hot dipped galvanised to BSEN ISO 1461 (1999) with polyester powder coated (anti gassing powder). 40-60 micron covering over galvanising.

### RHINO STEEL TELESCOPIC BOLLARDS

Hot dipped galvanised to BSEN ISO 1461 (1999) with polyester powder coated (anti gassing powder). 40-60 micron covering over galvanising.

### SINEU GRAFF BOLLARDS

Zinc plated steel with polyester powder coated finish.

Stainless steel grade 316L.

Hardwood timber – treated against water, insect and fungal ingress and finished with UV resisting lacquer.

### MSF CAST IRON BOLLARDS

Rust inhibiting primer with black gloss painted finish. Ductile iron is an iron/carbon/silicon alloy which has a high tensile strength. The carbon is present in spheroidal form rather than flake eliminating any risk of crack propagation and brittleness. Ductile iron weight for weight is twice the strength of standard grey cast iron and is manufactured to BSEN 1563 1997.

### MSF POLYMER BOLLARDS

Engineering grade polyurethane cast around a steel core, supplied with 2 pack polyurethane gloss paint finish.

### MONOSCAPE CONCRETE BOLLARDS

Smooth grey OPC concrete as standard unless specified,

additionally finishes of smooth white, exposed silver grey in a white matrix, exposed river gravel in a matching matrix, exposed cream aggregate in a cream matrix, etched silver grey, etched pale buff, beadlite, exposed black aggregate in a brown matrix. Other colours available on request including close matching to Marshalls paving products. Quality control cubes tested in accordance with BS1881: Part 116 at 7 and 28 days, to a minimum strength requirement of 30N/mm<sup>2</sup> at 28 days.

### MSF LUMINAIRE BOLLARDS

Zinc plated steel with polyester powder coated finish.

### LAGO INTERCITY LUMINAIRE BOLLARDS

Body section utilises Assemblage Composite Structurelle (ACS Form – Patented Process) with moulded natural hardwood or wood composite facing onto a composite backing (ACS Bois or ACS Deco). Highly vandal resistant – mechanically welded steel luminaire support structure. Square baseplate 200 x 200mm x 8mm, thick taking 4 number M12 fixings (not supplied) at 160mm spacing. Steel seams and bases electroplated and powder coated as standard in grey 900 sable, blue 700 sable or green 500 sable (RAL colour options are also available to special order).

Luminaire body and lamp section are accessible via anti tamper stainless steel fixings for maintenance of the lamp and the option of a different coloured/finished body section. (The patented ACS Form process creates products which withstand severe climatic conditions, mechanical stresses and are stable, durable and strong.)

## Static Bollard Installation Details

*Static Bollards Root Fixing (See Fig 1)*

Standard specification root fixed – steel, concrete, cast iron, timber and polymer bollards.

1. Client to mark post locations.
2. Check service drawings provided by client if available.
3. Visual inspection for services, ie; inspection chambers.
4. Scan the location for live cables.
5. Existing surface to be broken out and cube to be excavated in accordance with the bollard's specification\*
6. Haunch base of bollard with a lean mix concrete and hold whilst levelling off.
7. Hold levelled position securely supporting the bollard, continue infill of cube.
8. Fill hole with 1:2:4 concrete mix.
9. Rinse off-residue concrete from base of bollard, using soft cloth and water, taking care not to scratch the surface of the bollard.

Finish off top surface of *in situ* concrete to give tight surface finish. Concrete should be protected by polyethylene during the first 24-hours following installation. This is particularly important during inclement and/or cold weather. Units should not be used until concrete has cured.

\*Minimum recommended root depth for static bollards is 300mm.

All necessary protective safety equipment is to be used during the installation. Care should also be taken to avoid damage to surrounding areas.

