zero waste

Impact recovery bollards

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SURFACE MOUNT

Surface Mount footing is sufficient for most applications. For free standing footings (no existing concrete or asphalt) or bollards subject to severe impact, we suggest using a 650 mm depth footing.

UNIT INCLUDES

- 2 x Impact Recovery Rings
- 2 x Metal Clamps
- 1 x Steel Internal Core
- 1 x Securing Stud
- Re-usable Base Plate
- 5 x Concrete Anchors

TOOLS REQUIRED

- Electric Drill
- Screwdriver
- Allen key

You will require hammer drill with masonry drill bits or concrete diamond point screws for drilling into concrete.

NB: When drilling into concrete, be sure to wear the appropriate personal protection equipment

INSTALL BASE PLATE

Install base plate using concrete anchors provided. If installing in new concrete- we suggest using 30 MPa concrete and waiting until concrete cures, before installing bollards.

INSTALL CORE

Securing stud is installed using Allen key to secure resistance core to base plate

INSTALL RINGS

Rings are attached to the Internal Resistance Core using clamps provided. Clamps face centre with flat side of ring facing out

INSTALL BOLLARD

Bollard is simply slipped over rings and secured by inserting securing stud beneath bottom ring.

IN-GROUND

NB: 350 mm Depth footing is sufficient for most applications. For free standing footings or bollards subject to severe impact, you may wish to install footing 650 mm depth.

UNIT INCLUDES

- 2 x Impact Recovery Rings
- 2 x Metal Clamps
- 1 x Steel Resistance Core
- 1 x Securing stud

FOOTINGS

- Ground socket 350 Depth
- Cap

Additional sockets used to extend depth by 300 mm increments.

TOOLS REQUIRED

- Installation Tool
- Removal Tool
- Allen Key
- Screwdriver or drill with screwdriver bit

INSTALL SOCKET

Dig hole 700 mm Deep and 400 mm round and place rubble in base of hole

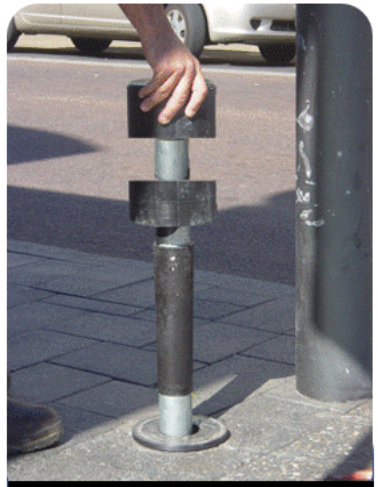
Use installation tool to position ground socket in hole, place a small amount of concrete in base of hole to secure socket and check alignment.

Fill hole with min 30 MPa Concrete flush with ground level and dress off.

Spin tool to remove from ground socket. Cap off ground socket until concrete cures.

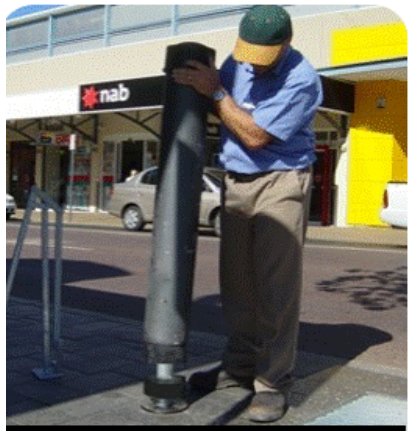
ATTACH RINGS

Taper is attached to resistance core using self-drilling screws and bollard shockers using clamps provided



DROPPED INTO SOCKET

Resistance core is simply dropped into ground socket automatically locking in



INSTALL BOLLARD

Drill hole in bollard to accept 10 mm stud. Bollard is slipped over rings and secured by inserting securing stud beneath bottom ring.

REPLACEMENT CORE

A 300 mm x 3.6 wall thickness Replacement core is available for Surface Mount units, with hole drilled and tapped and securing stud installed.

950 mm x 3.6 wall thickness replacement Resistance core is available for 650 Depth units and a 650 mm replacement core for 350 Depth units with Taper attached.

REMOVAL TOOL

Place base up against post and apply quick jerking action to leverage arm, to release the lock and allow you to lift the resistance core from the ground socket.

WHAT'S THE CHAIN FOR?

If a bollard is severely impacted at high speed by a truck the resistance core can sheer off (very rare- but if it does, you can still remove the core). The chain link is used to remove the core from the socket. The triangular head is place inside the post (and twisted until sharp edges grab onto internal walls of post) the chain is hooked over the pin on top of the tool and the tool is then used, as usual, to remove sheared off post from socket.

REMOVE STUD

Remove securing stud from bollard using Allen key (or security Allen key)

REMOVE BOLLARD

Slip bollard off

REMOVE CORE

Lever damaged resistance core from socket using tool provided

INSTALL BOLLARD

Attach rings to the new core and install the resistance core and then the bollard.

BOLLARDS

We manufacture a range of bollards designed to withstand impact.

Heavy duty Australian made Steel Bollards galvanised, primed and quality powder coated; Australian made Stainless Steel Bollards made from heavy duty pipe (to withstand impact) and polished to nice Satin finish; and Advanced Polymer (non-conductive) Bollards and Bollard covers also available. Powder coated and Advanced Polymer bollards can be manufactured in almost any colour- ask for colour chart. Reflective striping available

Not all bollards are the same.

The government has issued a warning about cheap imported bollards made from inferior steel and stainless, with very poor-quality powder coating, they quickly rust, corrode and dent and simply will not last, creating landfill and costing you money to replace. If buying stainless make sure the bollards are pipe, not tube (tube is like aluminium and can only be used indoors).

STEEL BOLLARD

Australian made 150 NB / 165 mm ⌀ galvanised steel x 1250H quality powder coated safety yellow. MRWA option.

STAINLESS BOLLARD

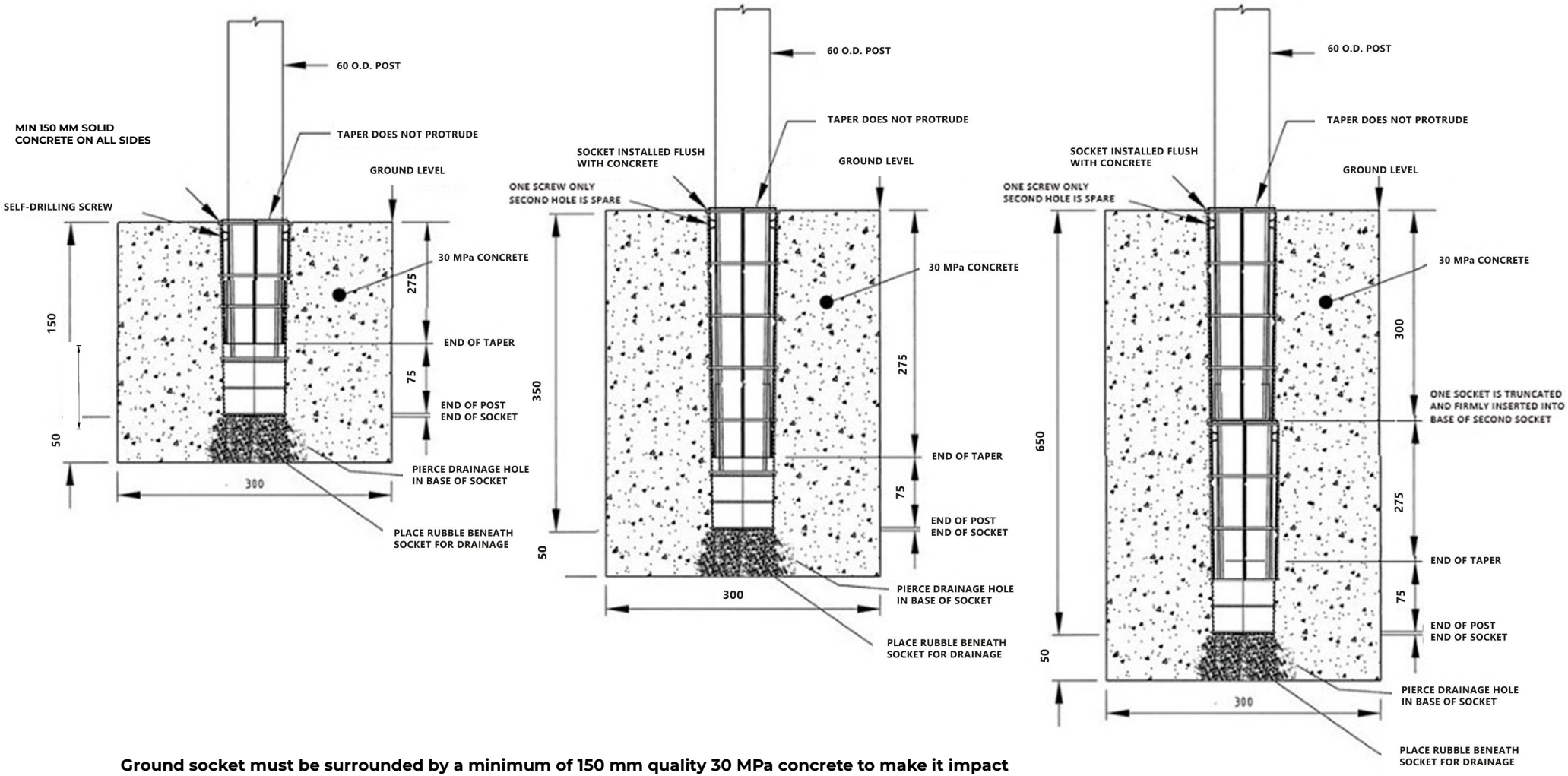
Australian made 168 mm ⌀ stainless-steel heavy-duty pipe x 1200H with satin finish

POLY BOLLARD

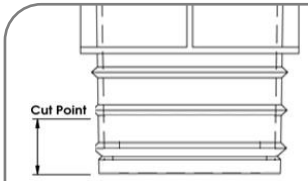
Advanced Polymer bollard 150 mm ⌀ x 1200 H in Safety Yellow smooth finish

POLY BOLLARD

Advanced Polymer bollard 150 mm ⌀ x 1500H in Safety Yellow smooth finish



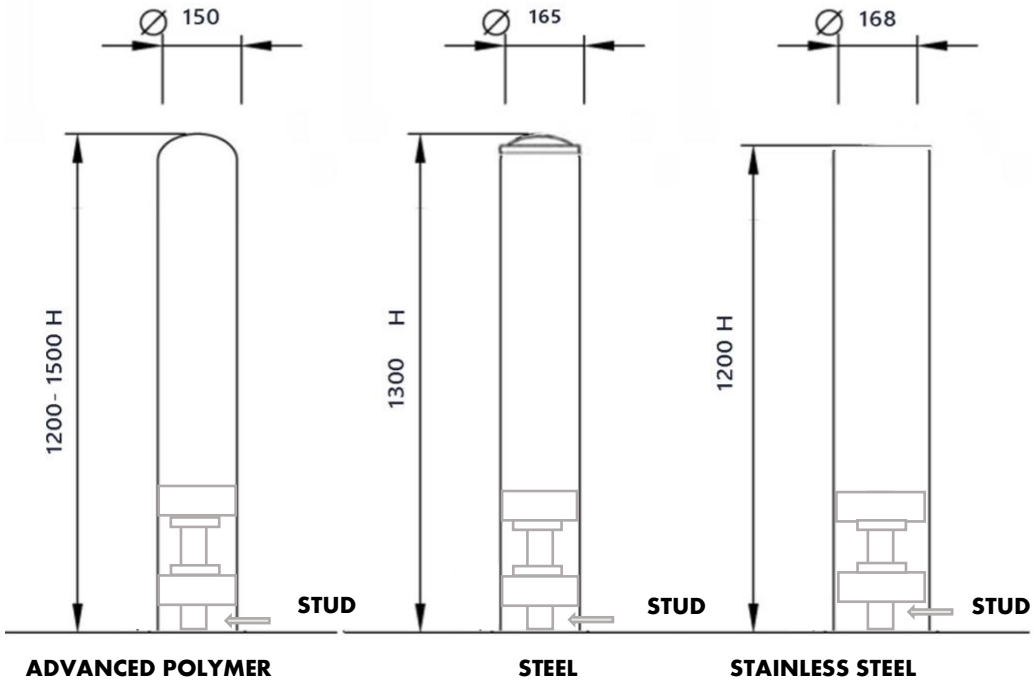
Ground socket must be surrounded by a minimum of 150 mm quality 30 MPa concrete to make it impact resistant and protect the surrounding paving from damage. The footing must also be made large enough to ensure it is not dislodged (a little more concrete will ensure the footing can be reused for the next 100 years)

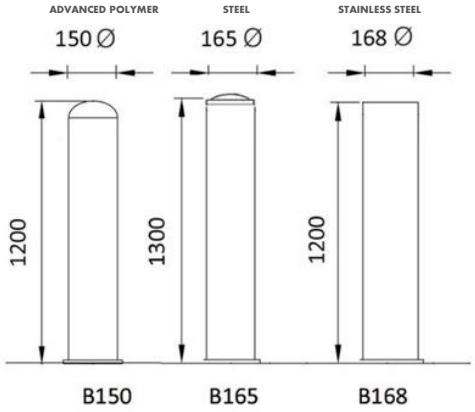


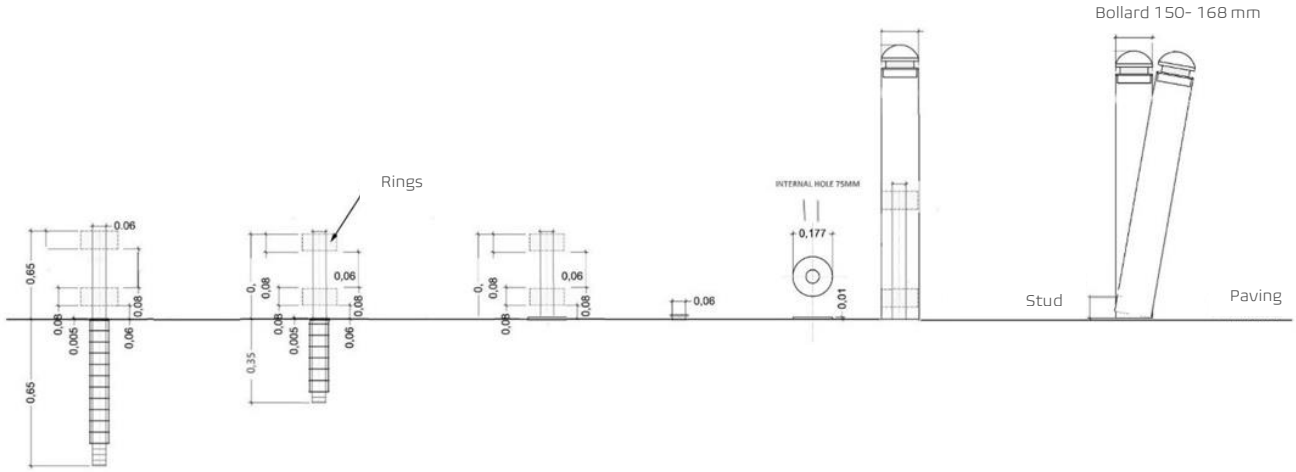
TO INCREASE DEPTH: To extend depth you truncate ground sockets just below the second horizontal rib and insert truncated end firmly into the top of a complete ground socket.

HOLE TO ACCEPT 10 MM STUD

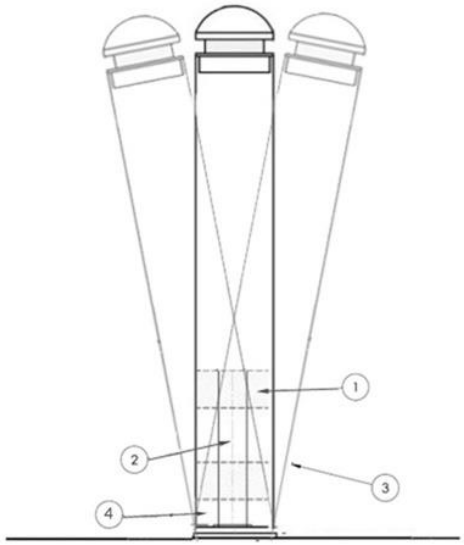
* Hole must be drilled (and tapped) approx. 20 mm from base of bollard to accept 10 mm stud. Advanced Polymer do not need tapping - suggest using 8.5 mm drill bit.

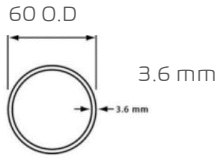






650 mm 350 mm Surface Mount Cap Protective cuff





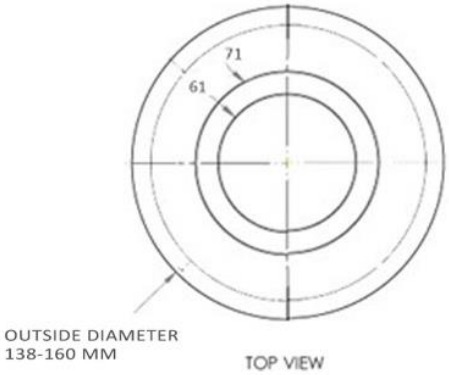
COMPONENTS

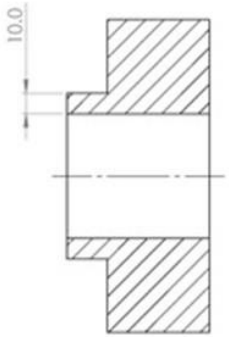
1. Impact Recovery Rings
2. Resistance Core*
3. Bollard
4. 10 mm Securing stud

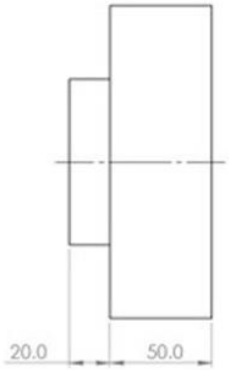
* Internal Resistance Core must be 3.6 mm wall thickness (can increase to 5mm when using 650 mm depth foundations).

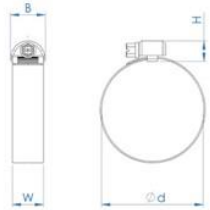
NB: Poly protective cuff available to sit below bollard and protect paving from scuffing due to frequent impacts.

ZEROWASTE
IMPACT RECOVERY BOLLARDS



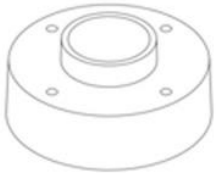




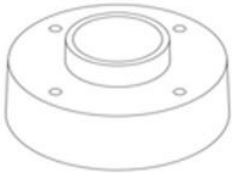


CLAMP

Ø 138 mm



Ø 153 mm



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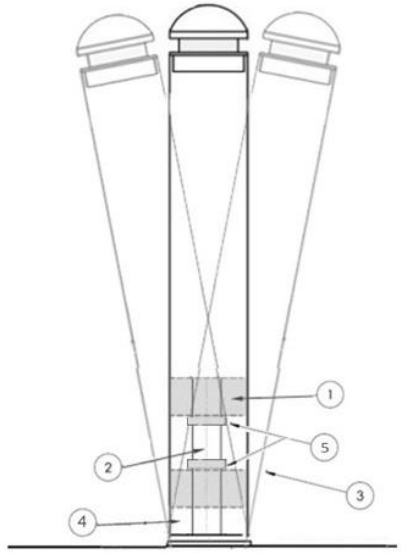

1. IMPACT RECOVERY RINGS
2. INTERNAL STEEL CORE
3. BOLLARD CASING
4. SECURING STUD
5. CLAMP (TOP RING FACING DOWN & BOTTOM RING FACING UP)

CODE	DETAILS	WEIGHT
IRR-150	Ring to fit 150 Poly Bollard	1 kg
IRR-165	Ring to fit 165 mm steel Bollard	1 kg
IRR-168	Ring to fit 168 mm Stainless steel Bollard	1.25 kg

ZEROWASTE
IMPACT RECOVERY BOLLARDS

TASK	HAZARDS	SAFE WORKING PROCEDURES
Installing Sockets 	- Bending of the back - Twisting of the back - Working in traffic	• Dial before you dig. • Install appropriate traffic management. • Dig hole to insert ground socket. • Insert Installation tool inside ground socket. • Lower Installation tool & socket into hole and fill with concrete. • Operate installation tool from standing position with straight back
Installing Items 	- Bending of the back - Twisting of the back - Working in traffic - Item not secure	• Install appropriate traffic management/ cones. • Attach Taper to item using self-drilling screws provided (This can be done prior to going onsite to reduce time on location) • For 2.9 – 3.6 wall thickness posts we suggest pre-drilling. • Using two hands, drop item firmly into ground socket. • Check item is sufficiently installed to protect from unauthorized removal
Using Removal Tool 	- Bending of the back - Twisting of the back - Working in traffic - Trapping of fingers	• Position safety cones or safety barriers at extremity of working space • Make sure the base of the tool as close as possible to the base of the item. • Apply downward quick jerking action to arm of tool. • Lift item from ground socket using two arms (for items over 25 kg, 2 people should lift item from ground socket) • Bend knees to insert cap in ground socket