ZERO CIVIL

TECHNOLOGY THAT TRANSFORMS

IMPACT RESISTANT

Made from impact absorbing advanced polymer compound, that provides a safe, soft surface and self recovers from light impact

UV RESISTANT

Made with unique blend of Supa UV our Advanced Polymer Bollards offer 4.5 times the UV protection required by Australian Standard (AS/NZ 4766:2006) with design life up to 50 years

FOOTINGS CAN BE MADE REUSABLE

When secured on Impact Recovery System the concrete footings can be protected from damage for the entire lifespan of a development!

BOLLARDS CAN BE MADE REUSABLE

When secured on Impact Recovery System bollards self-recover from low-speed impact and are removable and reusable following severe impact

SPECIFICATIONS APB 2026

Photo Dept Transport Safety Yellow Advanced Polymer XHD Impact Recovery Bollards

Advanced Polymer Bollards offer:

- Non conductivity
- high impact resistance
- excellent toughness
- flexibility under load
- reliable performance across a wide range of temperatures
- UV Stabilisation
- reduced risk of brittle failure over time

Under lighter impact, the bollard can flex and recover. Scuff marks from tyres can typically be cleaned away

We offer non-conductive bollards in different structural formats depending on the application.

You can install bollards directly in concrete, but we highly recommend using the Impact Recovery System to improve safety and resilience.

Because the Impact Recovery System absorbs the impact force, the depth of foundations can be substantially reduced, saving time and money and reducing disturbance to underground services. For this reason:

- **Surface Mount foundations are adequate for standard carpark applications**
- **350 mm Depth for carparks**
- **650 mm for more industrial applications**
- **XHD 650 mm for high impact locations**

Upon low impact the bollard deflects up to 25 degrees and self recovers. In the event of high impact, the resistance core is designed to resist forward movement and is unlikely to bend beyond approximately 30° without substantial vehicle damage. The vehicle may become immobilised or hung up on the core, making forward or reverse movement difficult without recovery assistance.

SIX OPTIONS FOR INSTALLATION

Use the Impact Comparison and Resilience comparison chart to decide which installation method is the most suitable for your project.

In-ground – Concrete Filled

In-ground – Hollow

Impact Recovery – Surface Mount

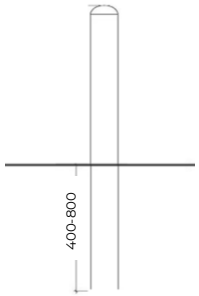
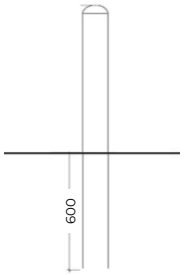
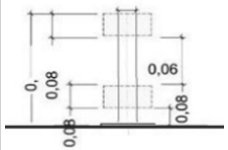
Impact Recovery – In-ground 350

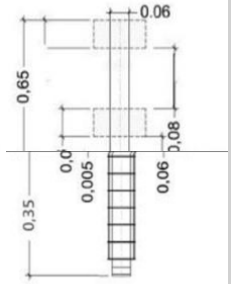
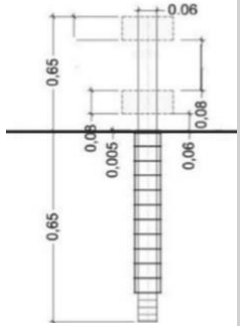
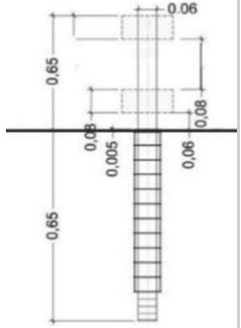
Impact Recovery – In-ground 650

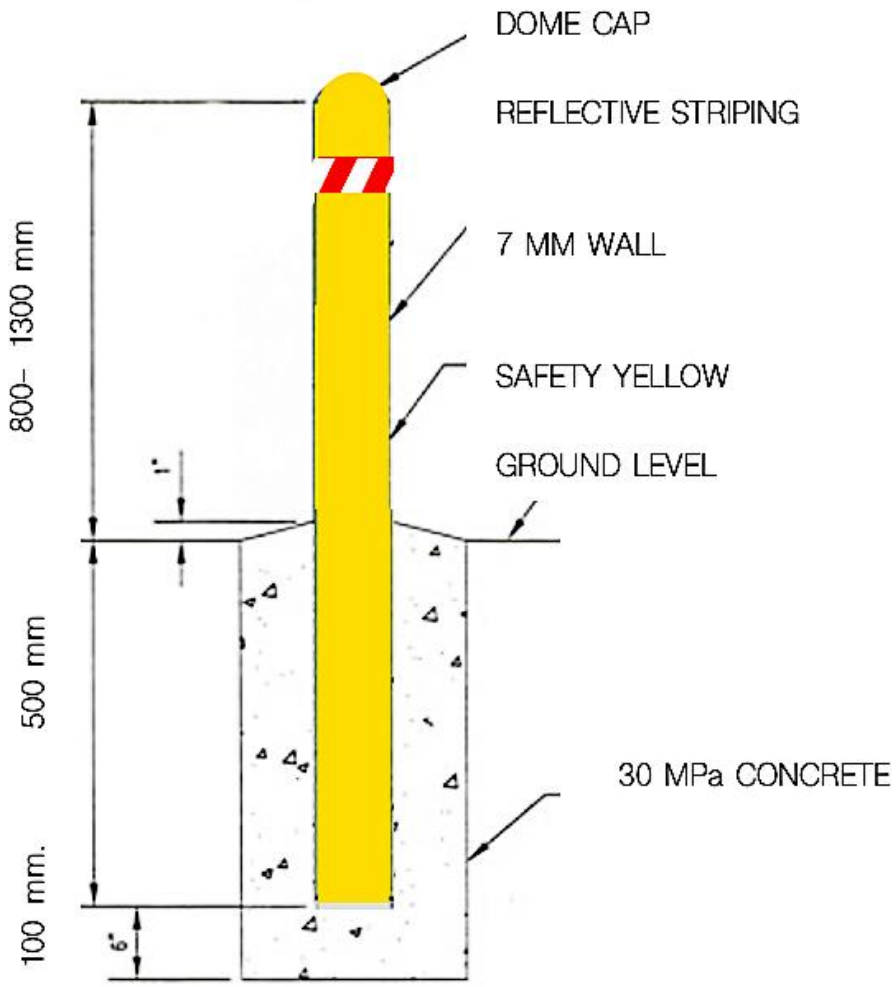
XHD Impact Recovery – In-ground 650 (Extra Heavy Duty)

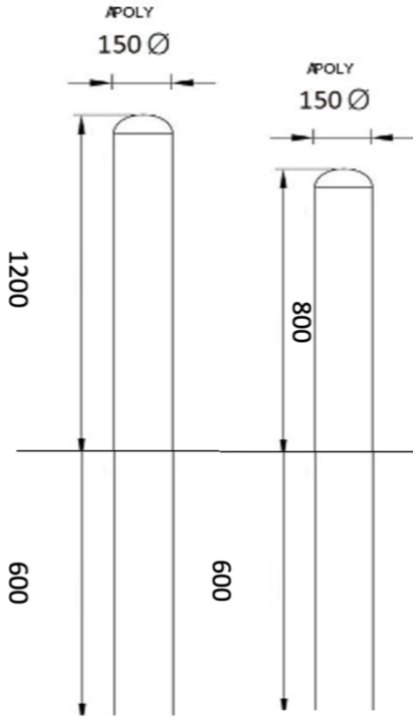
IMPACT RESISTANCE CHART

INSTALLATION METHOD	MAX IMPACT	OUTCOME FOLLOWING IMPACT
In-ground – Concrete Filled	**≈ 8 km/h**	Concrete filling increases stiffness but offers little practical improvement in impact tolerance. Because the bollard becomes less able to flex, higher loads are transferred into the footing, which may increase the risk of footing damage or dislodgement.
In-ground – Hollow	**≈ 10 km/h**	The hollow bollard can flex and recover from light impacts. Under more severe impact, permanent deformation may occur, and the bollard may not fully recover. Footing damage remains possible because there is no impact recovery mechanism below ground.
Impact Recovery – Surface Mount	**≈ 13 km/h**	Bollard deflects and self-recovers under low-speed impact and side glances. Under higher-speed impact, the resistance core can bend and require replacement. **Surrounding footing is not damaged.**
Impact Recovery – In-ground 350	**≈ 16 km/h**	Improved stability over surface mount. Bollard deflects and self-recovers under low-speed impact and side glances. Under higher-speed impact, the resistance core can bend and require replacement. **Surrounding footing is not damaged.**
Impact Recovery – In-ground 650	**≈ 19 km/h**	Greater embedment improves resistance to more serious low-speed impacts. Bollard deflects and self-recovers under low-speed impact and side glances. Under higher-speed impact, the resistance core can bend and require replacement. **Surrounding footing is not damaged.**
XHD Impact Recovery – In-ground 650 (Extra Heavy Duty)	**≈ 21 km/h**	Highest-duty option for severe low-speed impacts, including impacts from utility vehicles or trucks. Bollard deflects and self-recovers under low-speed impact and side glances. Under higher-speed impact, the resistance core can bend and require replacement. **Surrounding footing is not damaged.**

BOLLARD		INSTALLATION	BOLLARD REUSABLE	FOOTINGS REUSABLE
		**INGROUND CONCRETE FILLED - LOWEST RESISTANCE** Advanced Polymer 150 ∅ 1800 L. Installed directly inground (suggest min 600 mm Depth in solid concrete 30MPa) and concrete filled. High force transfer to bollard and footing under impact. May survive light impact (with possible damage to concrete at base and inside bollard) but with multiple impacts (or impact at medium speed) both the bollard and footings will need replacing		
		**INGROUND HOLLOW IMPACT TOLERANT** Advanced Polymer 150 ∅ 1800 L. Installed directly inground and left hollow, or concrete filled (to ground level providing reinforcement where needed). Flexible material- Bollard will withstand light impacts (such as carpark bumps and recover without need for maintenance. Upon medium to high impact, the bollard may bend but remain secured in concrete footing (providing a safety cushion between the vehicle and the electrical asset). Bollard and footings may need replacing.		
		**SURFACE MOUNT IMPACT RECOVERY LOW-MEDIUM RESISTANCE** Advanced Polymer 150 ∅ 1200L. Suitable for low speed zones such as carparks. Existing footing must be solid concrete or asphalt. Rather than “flexing” the bollard has a shock absorbing core that allows the bollard to deflect up to 20 degrees and slowly recover from low speed impacts and glances (no maintenance). Footings and bollard are also reusable following even severe impact.		

BOLLARD		INSTALLATION	BOLLARD REUSABLE	FOOTINGS REUSABLE
		**INGROUND 350 MM IMPACT RECOVERY MEDIUM RESISTANCE** Advanced Polymer 150 ∅ 1200L (350 mm depth) Suitable for low speed zones such as carparks. 350 mm footing suitable for areas with existing concrete footings to provide stability to concrete base and protect against dislodgement. Rather than "flexing" the bollard has a shock absorbing core that allows bollard to deflect up to 20 degrees and slowly recover from low to medium speed impacts and glances (no maintenance). Footings and bollard are reusable following even severe impact.	♻	♻
		**INGROUND 650 MM IMPACT RECOVERY HIGH RESISTANCE** Advanced Polymer 150 ∅ 1200L (650 mm depth) Suitable for low to medium speed zones such as carparks. 650 mm footing suitable for areas with no existing concrete footings (free standing footing). Rather than "flexing" the bollard has a shock absorbing core that allows bollard to deflect up to 20 degrees and slowly recover from low to medium speed impacts and glances (no maintenance). Footings, and bollard are reusable following more severe impacts and glances (such as utility vehicles)	♻	♻
		**INGROUND 650 MM XHD IMPACT RECOVERY MOST RESISTANT** Advanced Polymer 150 ∅ 1200L (650 mm depth Extra Heavy Duty Resistance Core provides 150% greater resistance to bending upon impact from a vehicle) Suitable for medium to high impact from large passenger vehicles and utility vehicles. Rather than "flexing" the bollard has a shock absorbing core that allows bollard to deflect up to 20 degrees and slowly recover from low to medium speed impacts and glances (no maintenance). Footings and bollard are reusable following severe impacts (such as utility vehicles).	♻	♻





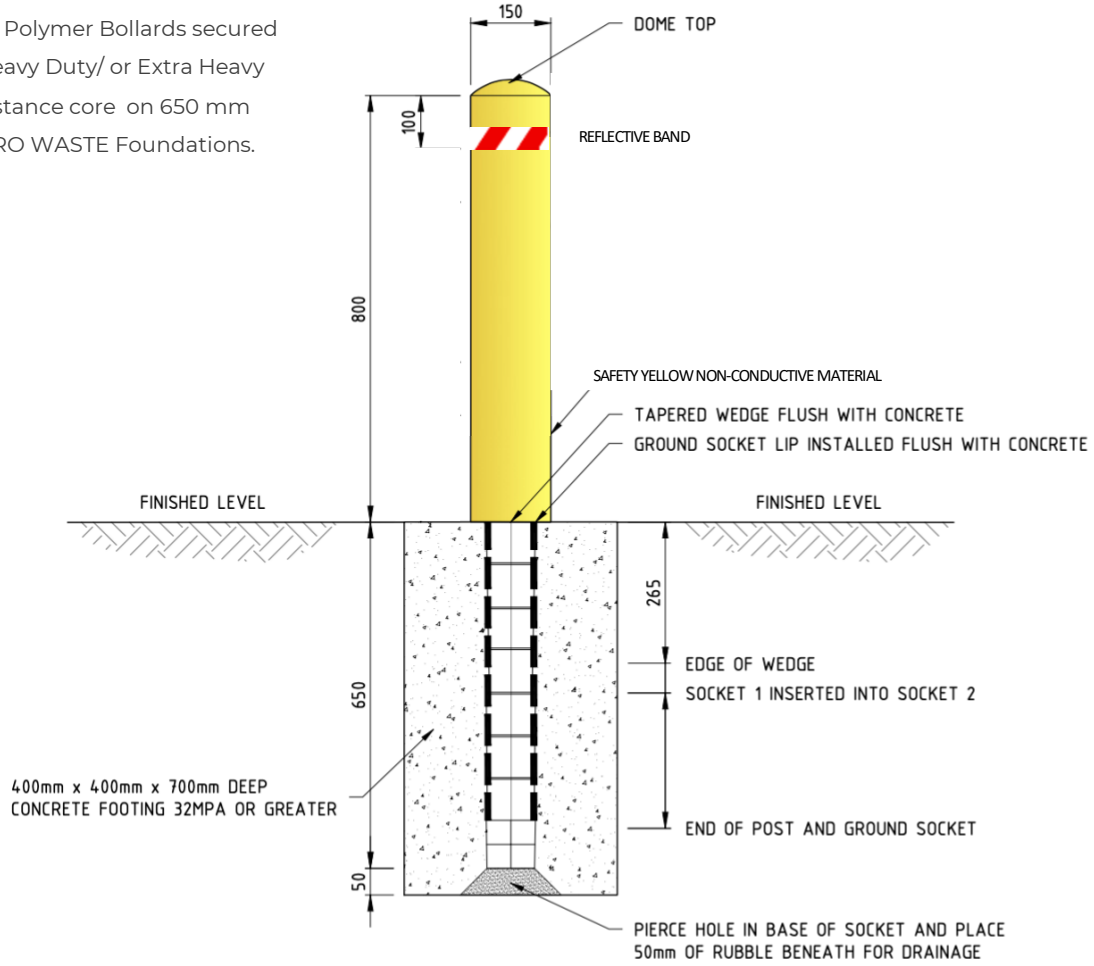
INGROUND BOLLARD NON CONDUCTIVE

Can be concrete filled to ground level to reinforce bollard in weakest spot (do not concrete fill)

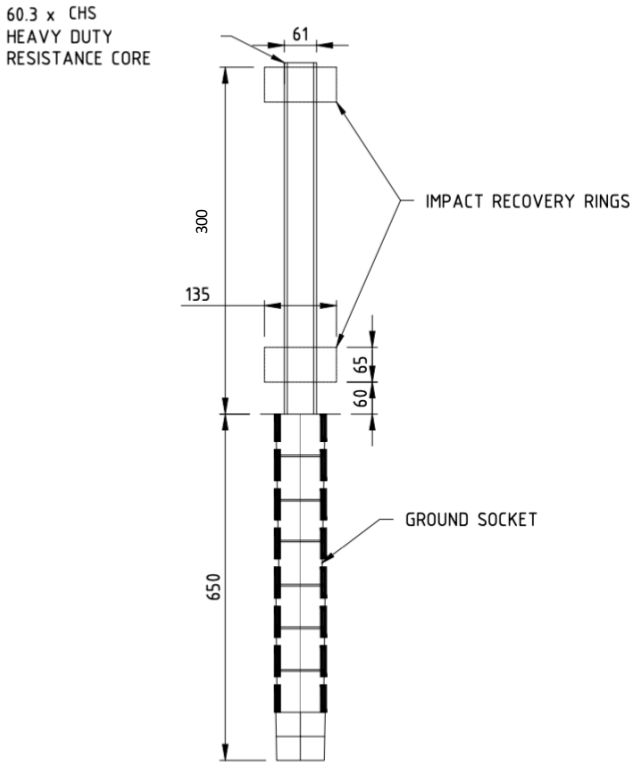
Base is removed. The bollard is filled with concrete and can be taped into position before installing bollard.

IMPACT RECOVERY
INGROUND

Advanced Polymer Bollards secured using a Heavy Duty/ or Extra Heavy Duty Resistance core on 650 mm Depth ZERO WASTE Foundations.



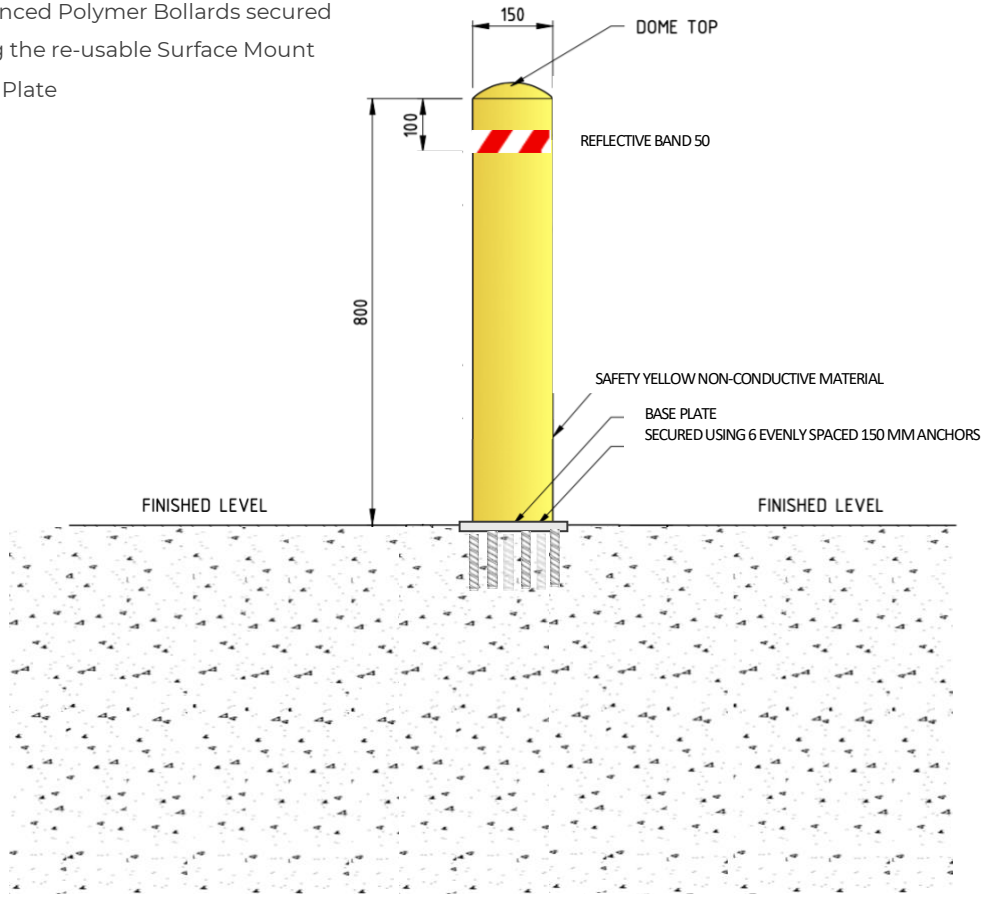
BOLLARD DETAIL
SCALE 1:10



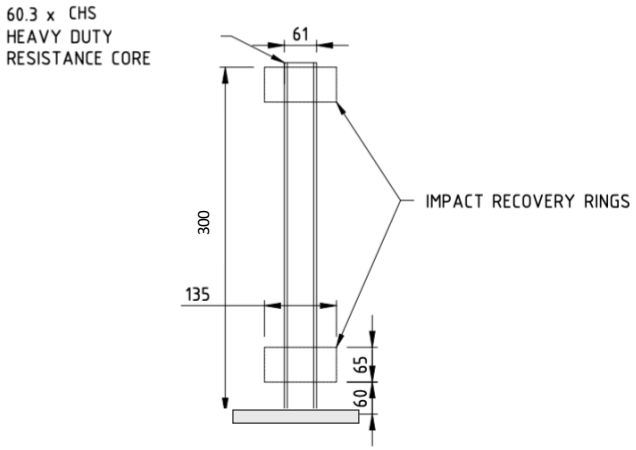
BOLLARD INTERNAL COMPONENT DETAIL
SCALE 1:10

IMPACT RECOVERY
SURFACE MOUNT

Advanced Polymer Bollards secured using the re-usable Surface Mount Base Plate



BOLLARD DETAIL
SCALE 1:10

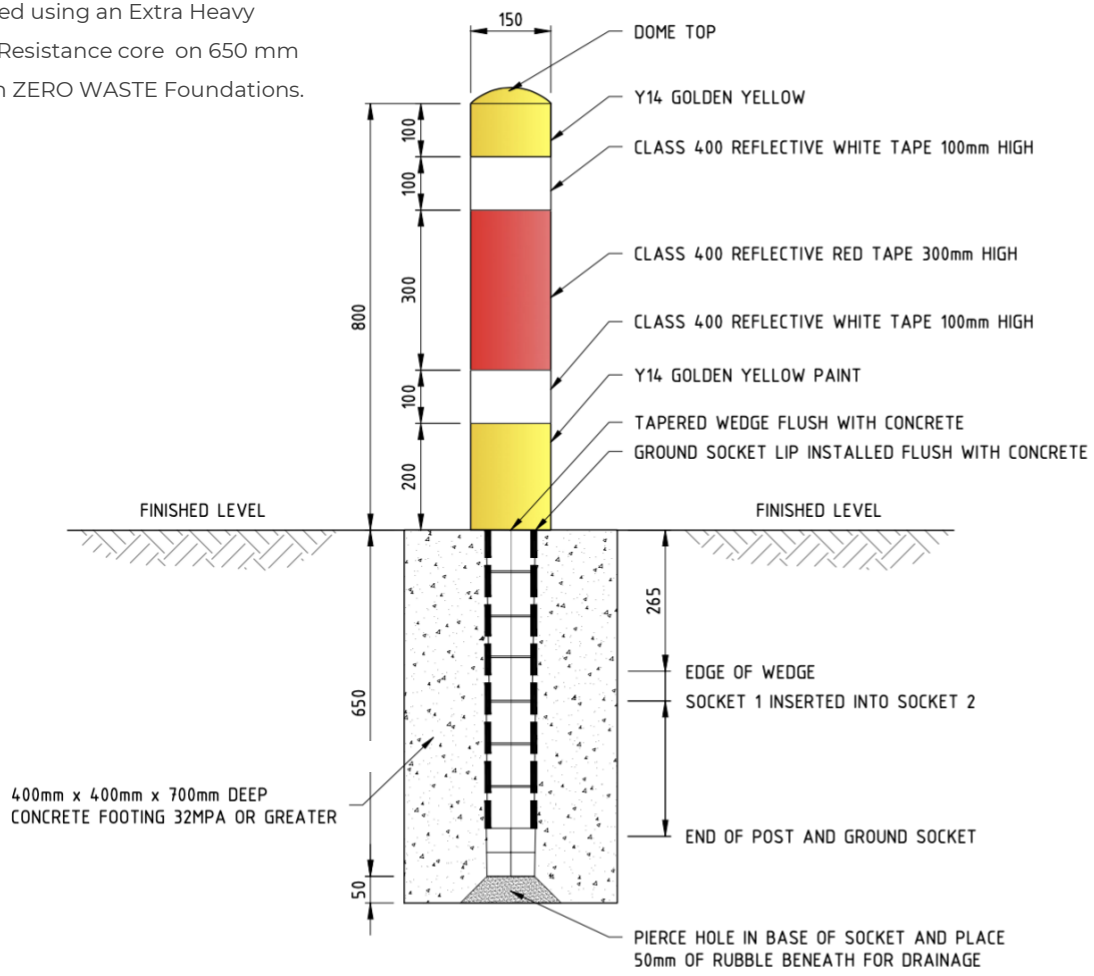


BOLLARD INTERNAL COMPONENT DETAIL
SCALE 1:10

PTA BOLLARD SPECS

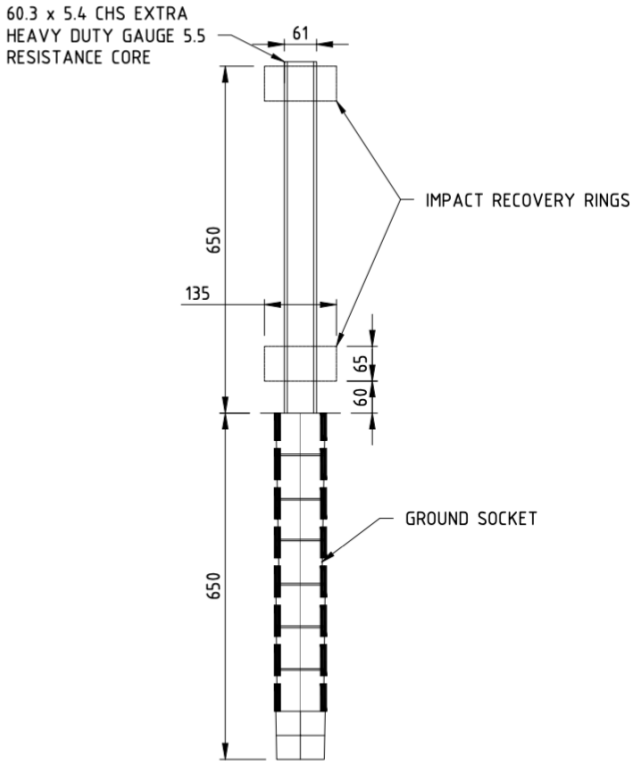
Advanced Polymer Bollards secured using an Extra Heavy Duty Resistance core on 650 mm Depth ZERO WASTE Foundations.

GAS	LOCAL GOVERNMENT REQUIREMENTS; FOR EXAM (GAS DISTRUBUTION NETWOR
SEWER + WATER	AS/NZS 3500.1



BOLLARD DETAIL

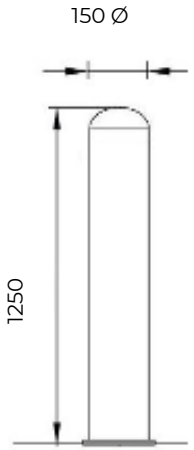
SCALE 1:10

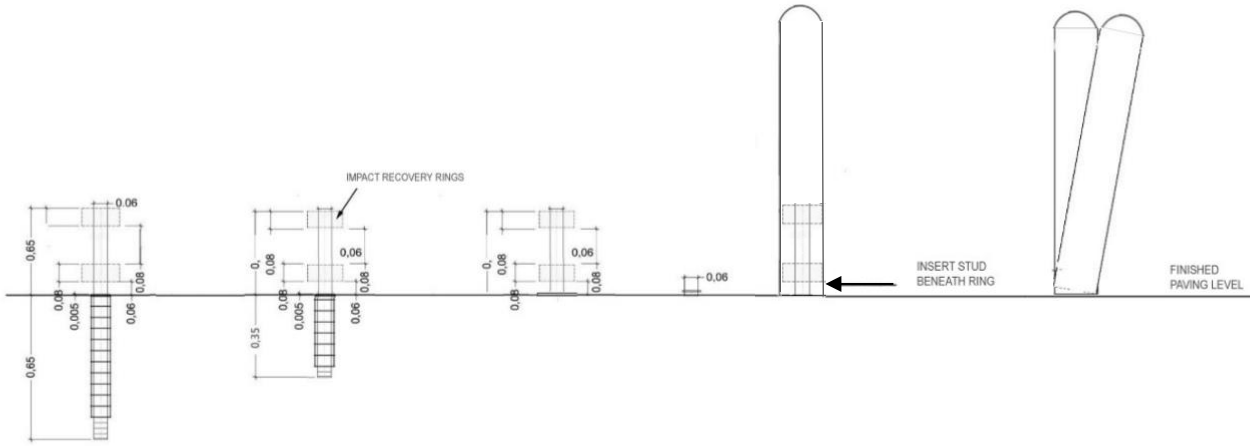


BOLLARD INTERNAL COMPONENT DETAIL

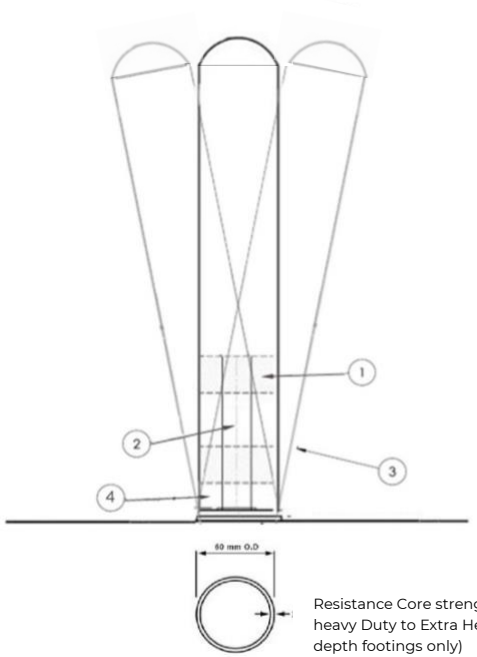
SCALE 1:10

IMPACT RECOVERY BOLLARDS





650 MM | 350 MM | SURFACE MOUNT | CAP | BOLLARD | IRS BOLLARD DEFLECTING



Resistance Core strength can be altered from heavy Duty to Extra Heavy Duty (650 mm depth footings only)

COMPONENTS

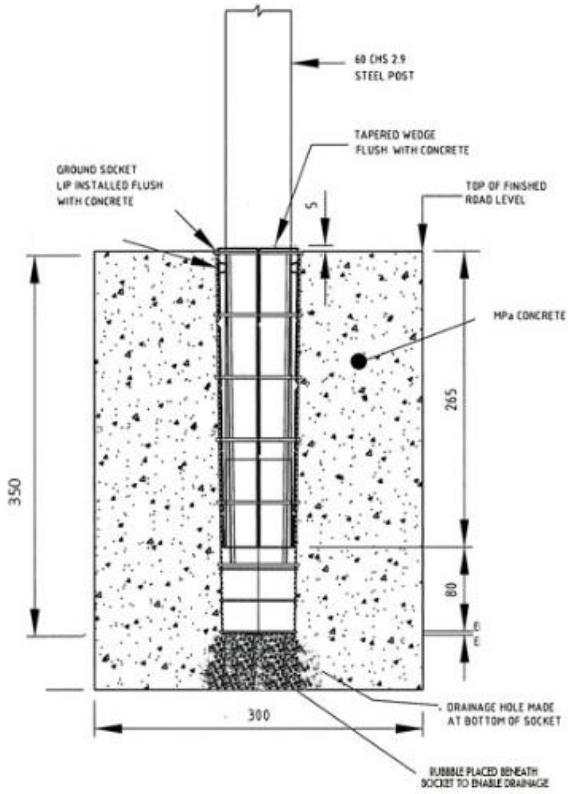
1. IMPACT RECOVERY RINGS
2. INTERNAL CORE 300 MM HIGH 3.6 WALL THICKESS
3. BOLLARD CASING - POLY/ STEEL OR STAINLESS
4. SECURING STUD (SECURITY STUD AVAILABLE)

Securing stud is inserted in hole at base of bollard and sits below the bottom Impact Recovery Ring

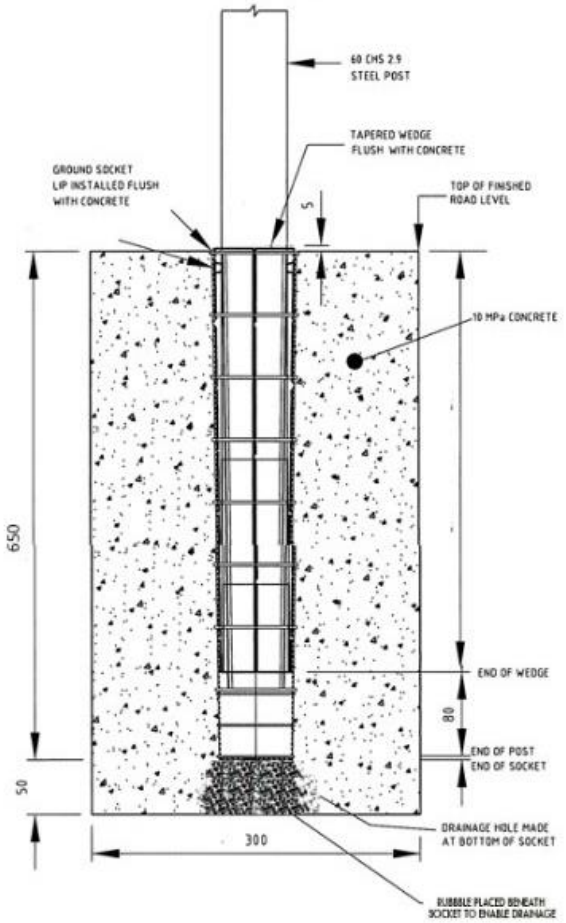
Best option to be determined based upon existing foundations and expected severity of potential impact

- Surface Mount
- 350 mm Footing
- 650 mm Footing
- XHD 650 mm footing

ZERO WASTE IN-GROUND FOUNDATIONS

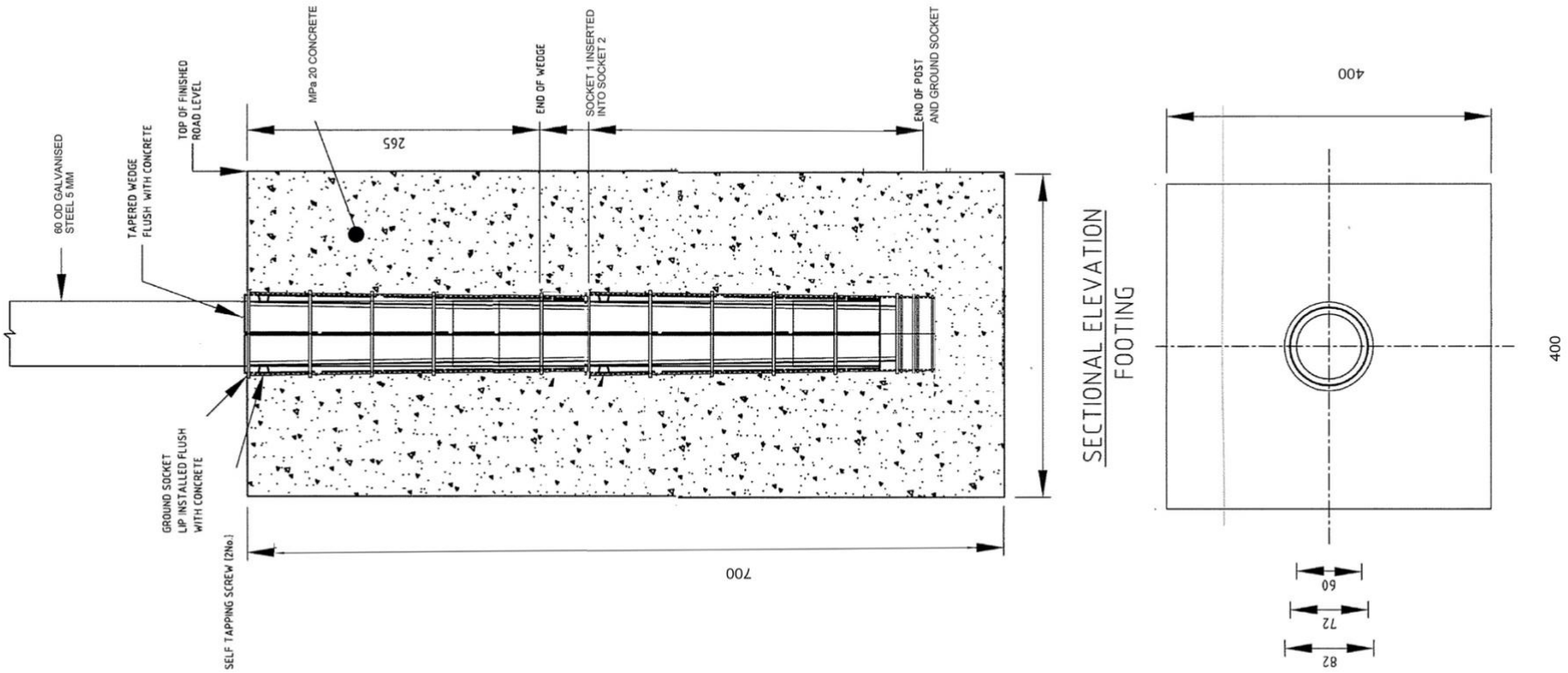


350 MM DEPTH

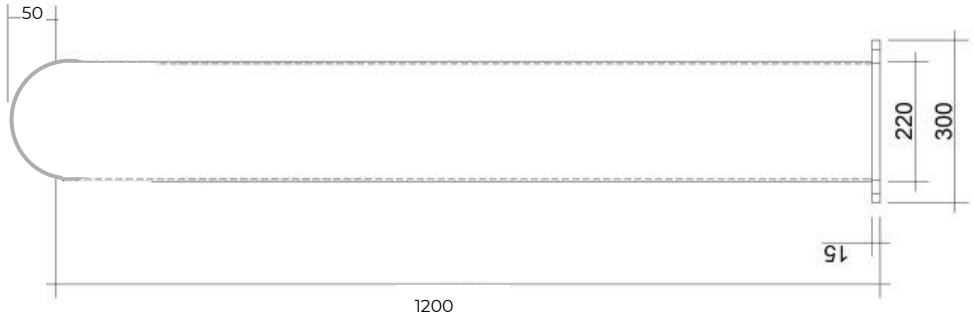


650 MM DEPTH

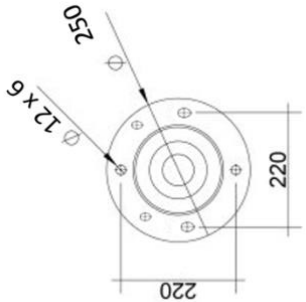
650 DEPTH ZERO WASTE FOUNDATIONS

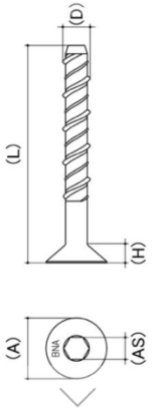


SURFACE MOUNT IMPACT RECOVERY SYSTEM



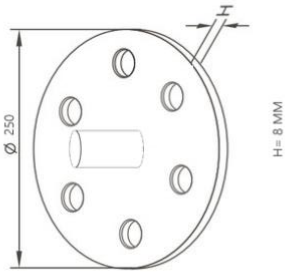
Surface Mount APB 150mm Ø





6 x Countersunk Screw Anchors

A: 27.65mm
L: 150 mm
D: M12: 12 mm
H: 10.20 - 10.40mm
AS: 10 mm



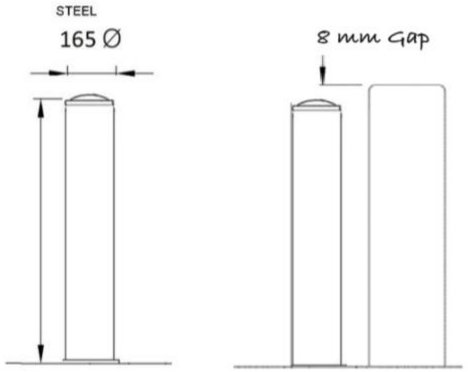
REPLACEMENT RESISTANCE CORE
Only replaceable component

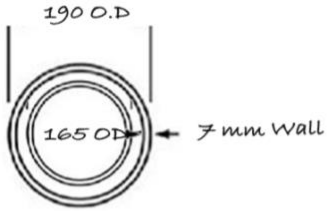
SURFACE MOUNT

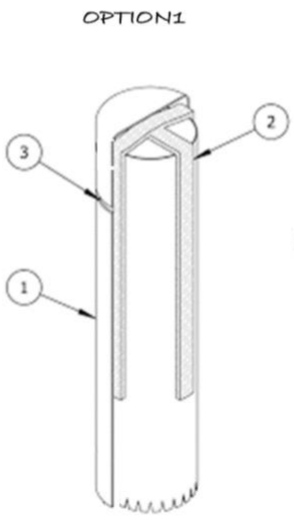
350 MM INGROUND

650 MM INGROUND

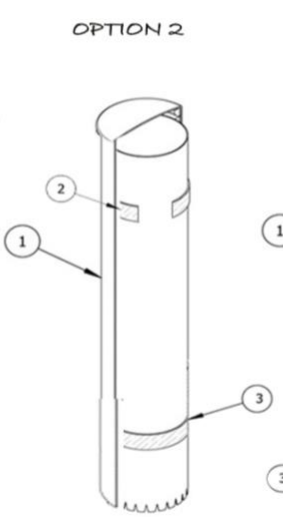
XHD 650 MM INGROUND



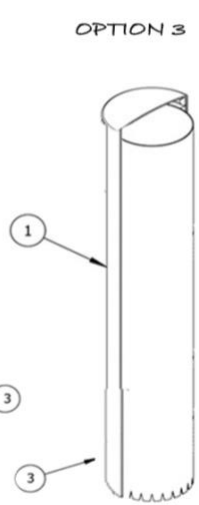




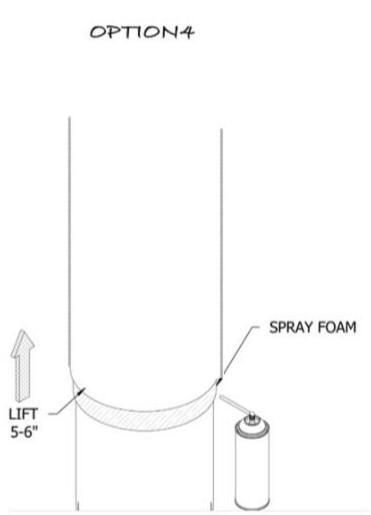
1.Cover
2. Padded tape
3. Padded tape



1.Cover
2. Padded tape
3. Padded tape



1.Cover
2. Screw

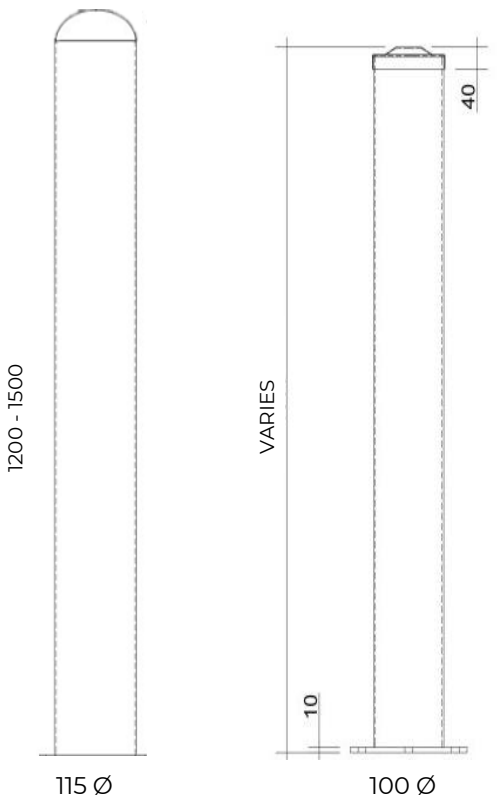


NOTES:
150 mm - Cover Bollards>136 mm Diameter
190 mm - Cover Bollards > 168 mm Bolalrds
Wall thickness 7 mm
Secured suing Padded tape/ Expaning foam or simple screw

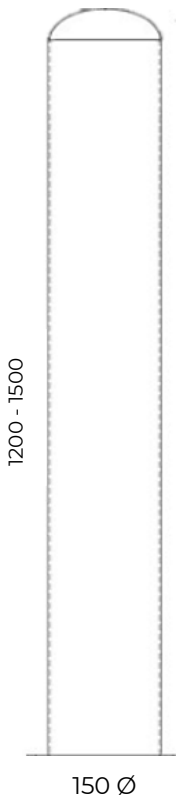
ADVANCED POLYMER BOLLARD COVER

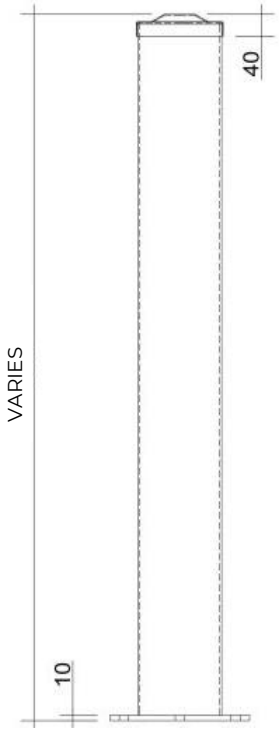
BOLLARD COVER DIMENSIONS

Available in a large range of colours- ask for colour chart

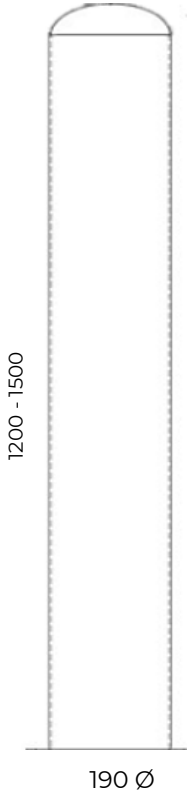


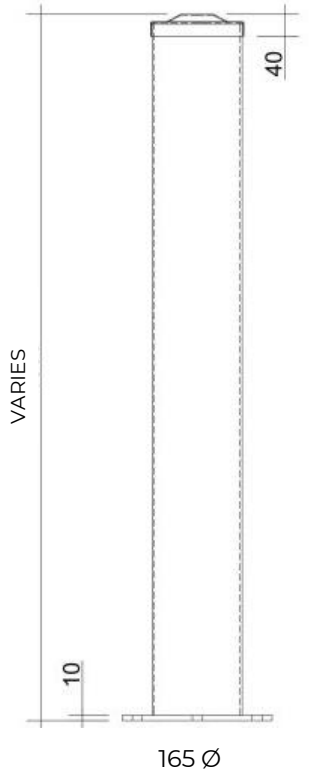
Fits 100 mm ∅ or less





Fits 130 mm ∅ or less





Fits Galv Steel Bollard 165 mm ∅

COLOUR CHART

05 WHITE

551 BLOOD RED

61 ORANGE

526 MAGENTA

539 PURPLE

18 YELLOW

257 LIME GREEN

209 LIGHT GREEN

329 TEAL

326 DARK BLUE

35 LIGHT BLUE

234 RIVER GUM

70 BLACK

89 SLATE GREY

206 MIST GREEN

2081 HERITAGE GREEN

890 ARMOUR GREY

930 WHEAT

392 MOUNTAIN BLUE

918 MERINO

916 BEIGE

947 SMOOTH CREAM

45 HERITAGE RED

Resilient Bollard casing

Unlike old fashioned plastics, our Advanced Polymer provides excellent impact resistance, energy absorption and high tensile strength. UV Stabilised to prevent fading and cracking, and is an efficient electrical insulator, making it great for applications where safety is paramount.

- Highly efficient Electrical Insulator
- High impact resistance
- Abrasion Resistant
- Scratch and marking resistant
- Chemical resistant
- Water and moisture resistant
- UV Resistant/ shatter resistant
- Long-wearing
- Corrosion resistant
- Strength tested to AS/NZS 4766:2006
- UV20 Protection to ASTM D2565
- Australian Made

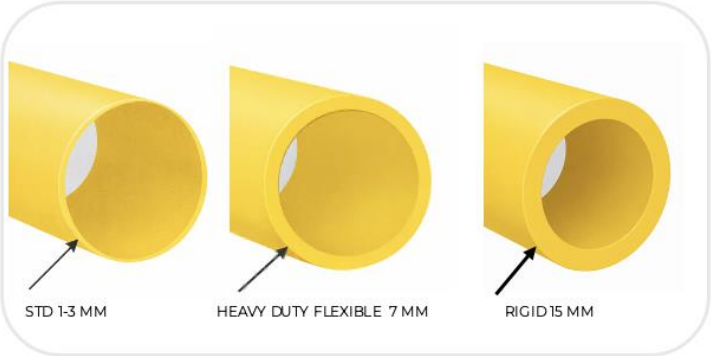
UV Resistant

We use a hexene copolymer based linear medium density polyethylene with a base resin VP319 polymer containing a long-term UV stabilisation package greater than UV8 to ensure bollards won't dry out and will not become brittle

SPECS

Tensile strength at 72°F: 1,400 psi
Tensile modulus: 57,000
Tensile elongation at break: 100%
Flexural modulus: 29,000 psi

50 YR LIFE EXPECTANCY (25 IN DIRECT SUNLIGHT)



Impact-Resistant

Unlike rigid materials, Advanced polymers absorb impact energy, allowing the bollard to “flex” and recover, reducing the force transferred into the footing and the subsequently reducing the risk of expensive footing damage.

Bollards are made from a solid piece of Advanced Polymer material, with **heavy duty 7 mm walls** which is robust enough to withstand impact and malleable enough to maintain the ability to absorb impact “flex” and recover.

Impact Recovery

The most resilient option of all. Using a shock-absorbing mechanism, the bollard is able to deflect under impact, self-recover from low-speed contact, and reduce force transfer into the surrounding footing.

This helps protect the foundation from damage and enables reusability of both the bollard and expensive concrete footings after impact.

In severe impact events, the resistance core may bend and require replacement, while both the **bollard and footing remain reusable**. The result is lower maintenance, faster replacement, and longer-lasting bollards

WEIGHTS AND DIMENSIONS

CODE	DETAILS	WEIGHT
APB-1200	Advanced Polymer Bollard 1200 L	3kg
APB-1500	Advanced Polymer Bollard 1500 L	4 kg
APB-1800	Advanced Polymer Bollard 1800 L	6 kg
IRR-150	Ring to fit 150 Poly Bollard	1 kg
SMBP	Surface Mount Base Plate	8 kg
IRR-165	Ring to fit 165 mm Galvanised Steel Bollard	1.25 kg
IRR-168	Ring to fit 168 mm Stainless steel Bollard	1.3 kg
ICORE-SM	3.6 CHS Post x 300 mm	1 kg
ICORE-350	3.6 CHS Post x 650 mm	2 kg
ICORE-650	3.6 CHS Post x 950 mm	3 kg