

# BOLLARD BASE



## SIMPLE AND FLEXIBLE BOLLARD INSTALLATION

You can easily and reliably install a bollard while producing a high-quality, finished appearance with the PNA bollard base. In demanding warehouse, retail and industrial environments bollards are installed for a reason – to protect key elements of the building from damage. Historical methods of installing a bollard transfer the damage-on-impact from the wall to the concrete flatwork, which is costly to reliably repair. PNA's bollard base simplifies bollard installation and replacement while ensuring minimal damage to the concrete flatwork.

### EFFICIENT CONSTRUCTABILITY

Eliminate the need for core drilling now and in the future by placing the PNA bollard base on the subgrade before concrete placement. It is inevitable that a fork truck will hit a bollard. With the PNA bollard base, the bollard or weld will fail and the concrete slab will stay intact. When you remove the damaged bollard, the exposed steel is ready to grind and install a new bollard. The PNA bollard base can be placed in a concrete slab for future use without compromising the slab integrity. The base will take repetitive loading from fork truck traffic without risk of damage.

### PRODUCT MATERIALS AND PROCESSES

PNA bollard bases are manufactured from steel certified to meet ASTM A36 to ensure quality and performance. Plates are sawn or plasma cut full-depth and deburred per industry guidelines to ensure plate edges are smooth to minimize restraint. Extracted, harvested or recovered - as well as manufactured - in the USA from recycled steel and eligible for LEED® credits.

# BOLLARD BASE

## BOLLARD SIZE

### Size of top steel plate

- ▶ 17-3/4" round (451 mm)
- ▶ 16" square (406 mm)
- ▶ 24" square (610 mm)

### Headed anchor length

(determined by slab depth)

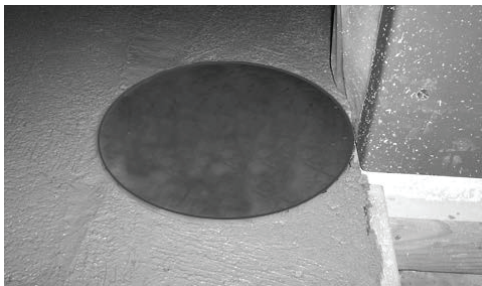
- ▶ 2 inch (51 mm)
- ▶ 3 inch (76 mm)
- ▶ 4 inch (102 mm)

## PERFORMANCE-BASED ENGINEERING

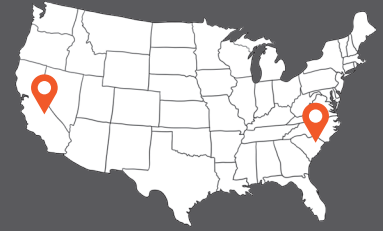
- ▶ Engineer the point of failure, bollard, weld or concrete, through the specification of the type and size of the weld; convert the dynamic load-on-impact to a static load at the point of impact as determined by the fork truck design.
- ▶ Delivers flexibility of facility layout – embed in slab for use now or in the future.
- ▶ Reduces the risk of concrete failure



PNA bollard base on level subgrade



Easy-to-finish to edge of plate



## MANUFACTURED IN THE U.S.A.

With a plant on both coasts (Charlotte, NC and Bakersfield, CA) PNA is a short distance to your next jobsite.

## THE PNA BOLLARD BASE HELPS YOU:

- Collect your retainage
- Reduce your callbacks and save labor
- Simplify installation and reduce maintenance costs
- Install bollards to exacting tolerances
- Deliver cost-effective concrete flatwork

For price **quotes**, email inquiries to [csr@pna-inc.com](mailto:csr@pna-inc.com).

To place an **order**, email your purchase order (PO) to [orderspna@pna-inc.com](mailto:orderspna@pna-inc.com).

To speak with a Customer Service Representative, call 1 (800) 542-0214.

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