DISTRIBUTION CENTER
INSTALLED COST CASE STUDY

BACKGROUND: A distribution center received OSHA citations for fork lift damaged rack. The rack was unprotected against accidental collision and had received damage over the years, compromising its load ratings. The maintenance manager determined that single bollards were needed at four problem locations to prevent any new damage once the storage racks were replaced.

OPTIONS: At other locations in the past, the plant had installed embedded bollards to protect equipment, however over time some of those bollards had received damage and even cracked the cement. The maintenance manager considered using 4" SlowStop® Bollards instead.

ANALYSIS: Understanding the performance benefits of SlowStop® Bollards, the manager was still initially hesitant due to higher purchase price of the rebounding bollards. A total installed cost analysis was performed.

CORE EMBEDDED BOLLARDS

Steel Pipe	4	$90	$360
Core Machine Rental	1	$175	$175
Diamond Core Bit	1	$200	$200
Cement Bags	12	$5	$60
Paint	1	$20	$20
Labor Hours (2 men)	16	$90	$1,440
TOTAL COST:			**$2,255**

Notes:

Installation would need to occur on overtime due to coring
Estimated time was one full day plus curing time.
Core machine rental required

SLOWSTOP® BOLLARDS

SlowStop Bollard Kits	4	$299	$1,196
New Hammerdrill Bit	1	$15	$15
Labor Hours (1 man)	3	$60	$180
TOTAL COST:			**$1,391**

Notes:

Installation with plant maintenance on straight time
Time to install was less than ½ day with no curing or painting and minimal mess
Hammerdrill tool owned by plant

COST COMPARISON

SlowStop® Bollards were estimated to cost $864 less to install, or approximately 40% less.

RESULTS: The maintenance manager decided to install the SlowStop® Bollards. He was able to complete the job very rapidly without interference to operations. To date the bollards have performed as expected, protecting the rack without any damage to the foundation.