

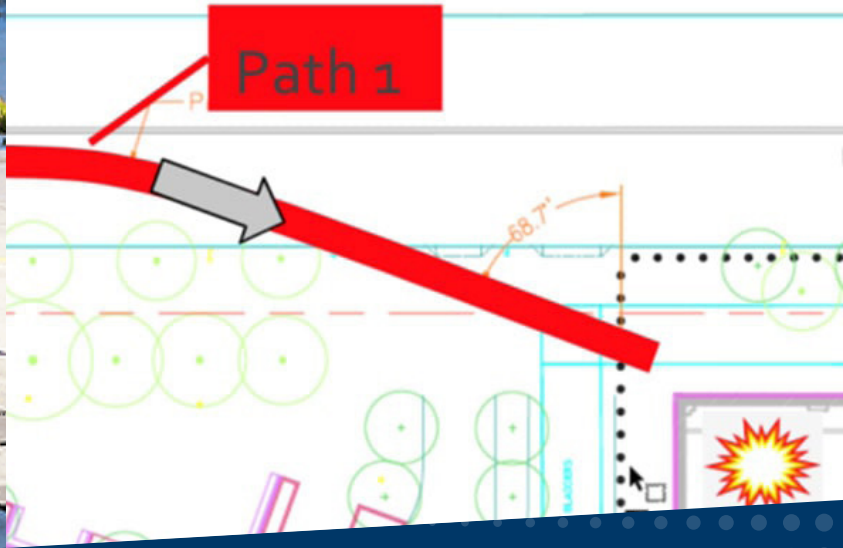


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WHITEPAPER

# How to Determine Bollard Spacing and Why it Matters.

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# How to Determine Bollard Spacing and Why it Matters.

Determining bollard spacing during the design phase is critical for security performance and safety. It depends on a variety of factors.



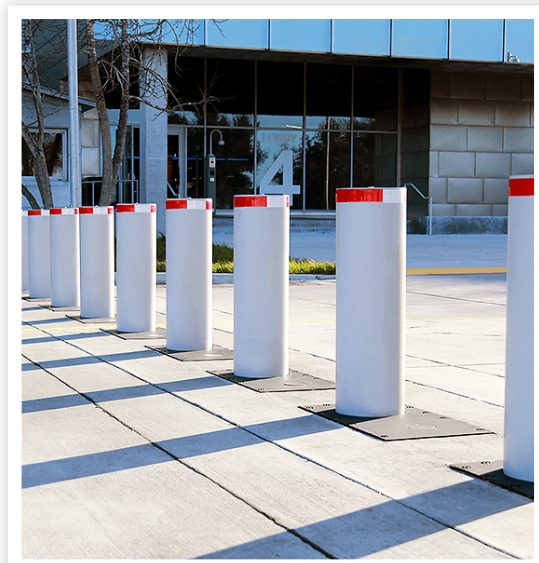
## Introduction

Making your perimeter truly secure is all about careful planning and employing intelligent design principles. The unfortunate reality is that bollards and some other high-security vehicle barriers are often installed incorrectly and are void of design best practices. Understanding the key factors to consider in the design phase, can be the difference between a barrier stopping a vehicle as it was intended and having a fatal injury on your hands that could have been avoided.

In this article, we'll cover 5 of the main factors that play a role in determining the correct bollard spacing.

## Manufacturer Recommendations

The manufacturer's recommendation for bollard spacing is crucial because it is directly related to the engineering and testing that went into the bollard design. Deviating from these recommendations has the possibility of weakening the effectiveness, safety, and reliability of fixed and retractable types of bollards. When installing bollards, particularly crash-rated bollards, it is advisable to review the manufacturer's documentation to ensure all installation specifications have been met.



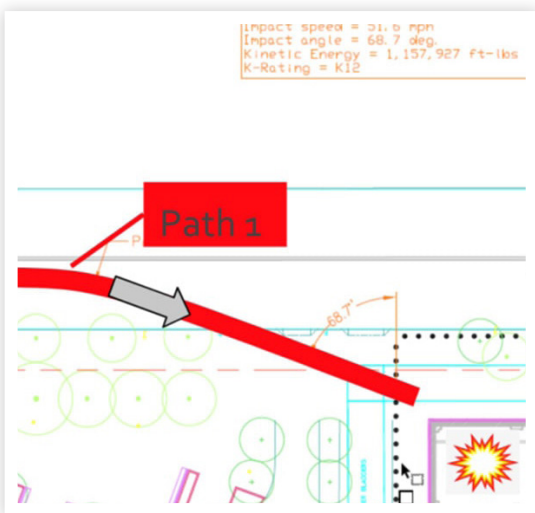


## Purpose and Functionality

Start by understanding the primary security purpose of the bollards. Are they for traffic control, pedestrian safety, perimeter security, or some other function? The purpose may have some influence on spacing requirements. While traffic control bollards might focus on efficient traffic flow, perimeter security bollards should prioritize crash threat protection. Pedestrian safety bollards aim to maintain clear pathways for pedestrians, while architects may select a bollard or layout with a focus on visual aesthetics. The determination of bollard spacing involves finding the right balance between functionality, security, and design.

## Type and Crash Rating

ASTM F2656 is a common testing standard that specifies the criteria for vehicle crash barriers. Bollards are classified into different ratings (e.g., M50, M30) based on their ability to resist vehicle impacts. Bollards may have varying spacing requirements in order to uphold the crash-rating standard. During ASTM crash testing, some bollards are tested as singular units while others are tested in multiples and the distances can vary depending on the model.



## Security Needs

Understanding your security needs should be the number one factor in determining where each bollard is placed and the spacing between each. Some security engineering teams, like Sloan Security Group, can perform a Threat Vehicle Vector Analysis to isolate potential angles and speed of attack to gain a better understanding of the type of bollard and its placement points.



One other thing to note is that if you are integrating with other vehicle barriers such as wedge barriers or drop arm gates it is highly advised to have a comprehensive site analysis performed to get the most out of your planned perimeter security installation. This could save you money by not protecting, and dramatically reduce the risk of a harmful threat.

## Get Advice from Professionals

Engaging with an experienced security consultant like Sloan Security Group is highly recommended. They can assist with making informed decisions about bollard placement and product selection.



## Conclusion

It cannot be understated the importance of adhering to standards, understanding crash ratings, and, most importantly, recognizing your unique security needs. Taking extra time during the design phase to evaluate manufacturer specifications in detail and review crash testing results is the best way to ensure you don't make a costly mistake.

If you need guidance, please contact us for a design assistance consultation from one of our security engineers.



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