



The History (and Future) of Dock Bumpers

**Protecting the Loading Dock
and Dock Equipment**

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A brief review of shipping history reveals that it was once trains that dominated North American distribution with loading areas situated on station platforms. In trucking – and its predecessor, wagon delivery – crude ramps were fashioned, which workers would walk along to move goods on or off.

In the mid-20th century, the **loading dock platform** was devised to create an at-level connection for loading or unloading trucks or freight trains. Innovation in the 1930s – 1950s saw the development of the **2-faced pallet**, the **hydraulic hand pallet lift truck** (now called a forklift), and the **counterbalanced dock leveler** that creates a hinged bridge between loading dock and trailer to safely facilitate traffic in and out. The loading dock has subsequently evolved over the decades to improve efficiency and safety.

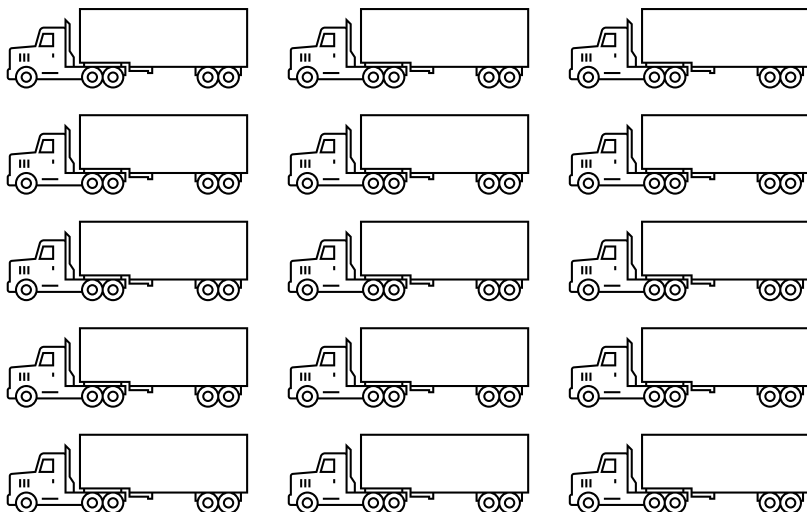
After World War II, with the adoption of the turbo-charged diesel engine and a robust highway network that developed as a result of the advancing auto industry, trucking took over from rail as the primary mover of goods across the continent and mass shipping distribution became a reality.

Change in Number of Trucks on the Road: 1910 - 2020

10,000 trucks in 1910



15,000,000 trucks in 2020



In 1910 there were only 10,000 trucks in the entire United States. By 2020, more than 15,000,000 trucks were taking to the road daily. 70% of all goods are delivered by truck and pass in and out of warehouses and stores via the loading dock.

As shipping grew, so did the adoption and *evolution* of the loading dock, an efficient and labor-saving means of loading and unloading goods.

Dock Protection. Taking a Hit for the Team.



With up to 80,000-lb. trucks backing (and banging) into loading docks, the need for protection against repeated impact inspired the adoption of the dock bumper. In the 1950s, bumpers were fashioned from blocks of hardwood or molded rubber. However, as dock traffic increased, these materials proved to be inadequate as they required far too frequent replacement.

In addition to absorbing impact, a dock bumper is subject to cheese-grater like abrasion as the trailer pressed against the bumper scrapes up and down due to the weight of the loaded forklift entering and exiting. This abrasion is a significantly lifespan-shortening reality for dock bumpers.

The 1960's saw the development of a laminated rubber bumper made from reclaimed truck tire material. The extremely tough, wear-resistant bias ply tire material is cut into strips and squeezed between metal angles to create a bumper that stands up well to both impact and abrasion.

This simple, effective (and eco-friendly) innovation continues to be the most common type of dock bumper installed today and is used in all manner of docks including warehouses and retail centers and is even used for marine fendering and tugboats!

Today, with many shippers/receivers operating 24-7, and the evolution of the loading dock towards safer and more efficient solutions, there are more docks *and* more valuable dock equipment to be protected. Costly to replace dock levelers, dock seals, traffic lights, vehicle restraints and more are commonly found on modern loading docks and are at significant risk of damage from reversing trailers if dock bumpers are not employed and maintained.



And the Impact Goes Straight to the Bottom Line.

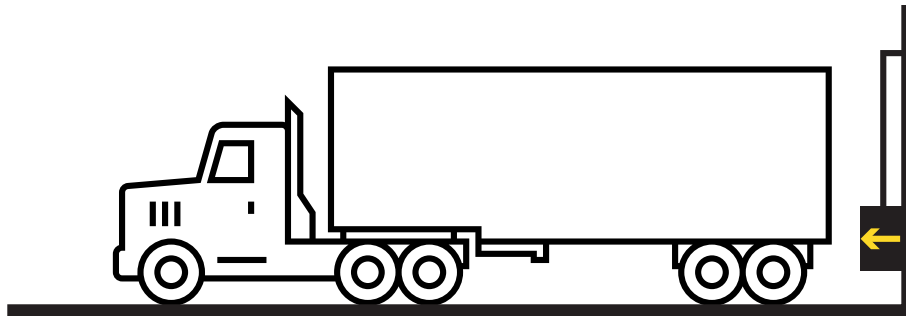
With schedules and timely shipping and receiving such a big part of business today, loading dock damage can extend far beyond the cost of equipment. Shutting down a dock to effect repairs can put a serious dent in workflow, order timing, customer relations and profits.



It has been estimated that an out of commission loading dock can ring in at a cost of about \$1700 per hour.

Dock position closures are most commonly caused when docking trailers impact the dock leveler lips causing hinges or hydraulics to fail. Similarly, an impact to the vehicle restraint system can render this safety feature inoperable forcing a dock closure.

Fitting a dock with the correct **dock bumper** helps reduce these unplanned occurrences and extends the life of all dock equipment including the dock seal or dock shelters. An argument can be made that timely dock bumper replacement alone could reduce the need for scheduled preventative maintenance services by as much as 50%, saving many thousands of dollars per year.



It's important to note that choosing and properly installing the appropriate bumper with the correct projection is critical to smooth dock operation. If the projection is too small, damage from impact is likely. And, if the bumper projection is too large, the vehicle restraint system may not safely capture incoming trailers and the dock leveler may not gain "lip purchase", either of these outcomes are immediate safety hazards.

Making efforts, through **properly equipping and maintaining** dock bumpers in every dock position, is a cost-effective measure to help reduce downtime and maintain a steady workflow while ensuring a safe work environment.

A Bumper is a Bumper? Not so Fast.

While merely creating a barrier between truck and wall sounds simple enough, many factors, from angle of impact to dock type to expected traffic, can affect bumper choices. Today, there are many types of dock bumpers created for many different dock environments. In order of durability, dock bumper types include:

MOLDED BUMPERS – A low-cost option, the quality of rubber used and the process under which it is molded can dramatically affect the bumper's performance and longevity. Often poor quality, molded bumpers are not considered a durable solution for a harsh dock environment.

COMPOSITE BUMPERS – Relatively attractive – and expensive – composite bumpers, typically with a yellow finish, are known to crack and fail in cold weather, and their low abrasion resistance will lead to a short lifespan in heavy-traffic docks.

LAMINATED RUBBER BELTING BUMPERS – Fashioned from reclaimed conveyor belt, these bumpers are low cost but typically require frequent replacement. Similar in look to Bias Ply Tire Rubber Laminated Bumpers but with a much lower life-expectancy due to the quality of rubber and inconsistent fabric reinforcement.

LAMINATED BIAS PLY TIRE BUMPERS – Low cost and high quality, bumpers made from reclaimed truck tires offer a toughness unparalleled by other rubber bumper options. Delivering superior durability, laminated truck tires offer excellent ability to absorb impact and good resistance to abrasion. Laminated Bias Ply Tire Bumpers are widely accepted in the industry as the best low-cost bumper option.

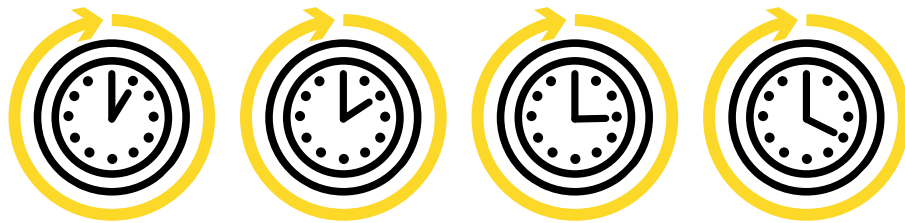
STEEL-FACED BUMPERS – Steel-Faced (or fully steel-encapsulated) dock bumpers begin with a laminated rubber core that is fitted with a floating solid steel face. Impact absorption and abrasion resistance are significantly greater than for any static all rubber bumper option. Steel-Faced Bumpers are an excellent mid-price option.

TRUCK-ACTUATED SLIDING BUMPERS – The sliding bumper design has developed to eliminate the cheese-grater-like abrasion that shortens the life of every other bumper style on the list. Sliding bumpers also come in varieties and have evolved over time.

The Half Slide – An early sliding entry employs a polyurethane bumper that sits in a bracket. When the truck strikes and scrapes down, abrasion occurs once. The trailer has then acquired the bumper and it slides up/down with the trailer for the remainder of the dock visit. Unfortunately, polyurethane does not stand up well to weather and is known to age, chip and crack unrelated to either impact or abrasion.

The Molded Slide – Next to market was a molded bumper option that travels up and down on spring mechanism. Though abrasion is successfully limited, molded rubber still lacks the toughness for most loading dock environments and the pad will wear.

The Laminated Slide – The Laminated Bias Ply Tire Bumper is the newest entry in the market and it avoids the material weaknesses of the other. The recycled tire pad sits in a permanent wall bracket and is free to travel up and down on a sliding spring mechanism. The bumper’s design helps eliminate dock downtime as the laminated rubber pad, if/when it (eventually) requires replacement, can be easily swapped out in seconds by maintenance staff. Overall, this option delivers the lowest lifetime cost of ownership and lowest dock downtime of all bumpers.



Replacing any of the traditional bumpers noted above requires complex reinstallation into the dock concrete resulting in several hours of dock closure. Labor costs, damage repairs, and dock downtime can add up to many thousands of dollars.

Tilting Bracket – A customization available for laminated sliding bumpers is a tilting wall bracket that can be permanently angled to adjust for declined (ramped) dock approaches. The Tilting Bracket helps the sliding bumper eliminate abrasion by providing a flush impact area for trailers.

ELIMINATE DOCK DOWNTIME – The simplest of asset protection measures, the dock bumper is the now not-so-secret weapon in eliminating dock downtime and expensive repairs to dock equipment. Understanding the best long-term dock bumper solution for your dock can save time and money while avoiding costly dock closures.

For more information on dock bumpers and loading dock safety go to [idealwarehouse.com](https://www.idealwarehouse.com).