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Will Steel Barrier Systems Change the Industry Landscape for Roadways and Bridges in the United States?

Steel Barrier Systems promises to offer the road construction industry a revolutionary temporary or permanent barrier solution as an alternative solution to traditional concrete barrier, providing superior protection, is environmentally friendly, cost-effective and offers long-term sustainability exceeding a life-span of 50+ years. In addition, steel barriers contribute to better road safety by reducing the severity impact level to occupants during impact. By absorbing impact energy through innovative barrier and rail design sets new presidents for the future of our transit system infrastructure bringing safer roads to our future generations and by taking advantage of the importance of recycling.

Europe has always been a leader in utilizing environmentally friendly pedestrian and road safety products. For decades, steel barrier systems have been used on European roadways and highways. In fact, portable concrete barrier usage has declined to the point that now approximately 80% of all portable barrier used is steel barrier. In many European countries concrete is not sanctioned therefore, they have first-hand experience of the long-term benefits of steel barrier versus concrete.

Concrete barriers are often referred to as “dead weight”. The vehicles we drive are designed around “Crashworthiness” and must meet a minimum crash acceptance level. Concrete barriers are merciless to motorists and only designed to redirect vehicles under impact into the direction of travel. Alternatively, steel barriers absorb and redirect vehicles reducing vehicle damage while contributing to a safer outcome if and when a unforeseen incident occurs.

Another serious issue that plagues the road industry is our nations deteriorating bridges that become even more structurally inadequate over time. *“According to a recent issue of Roads & Bridges, quoting a report by The American Road & Transportation Builders Association (ARTBA), nearly 59,000 U.S. bridges are still structurally deficient.”* A major initiative is in affect addressing bridge reconstruction and rebuilding and it will prove a proactive measure to use steel barriers going forward. Steel barrier tests meet the new MASH-08 Federal Highway Administration (FHWA) Standards for crash impact containment levels while also offering a cost effective solution for relocating steel barrier during construction phases. Concrete barrier generally is deployed at 100 feet per hour versus steel at 600 feet per hour resulting in a 6 to 1 ratio improvement in transportation and deployment speed. Another benefit is the lighter weight of steel that averages approximately 65 lbs per foot compared to 400 plus lbs per foot of concrete. Considering that the issue is deteriorating and distressed bridges, the concrete “dead weight” factor needs to be seriously considered going forward. The steel barrier solution provides substantial financial savings to contractors and State Departments that can no longer be ignored.

Though the use of steel barrier systems is starting to populate our roads and bridges in America, leaders in pedestrian and road safety have a long way to go to help educate the industry as well as the state and country’s traffic highway agencies, department of transportations, and municipalities. It makes sense that America should use the safety and usage statistics from our European counterparts to substantiate utilization of innovative road safety systems like steel barrier and aluminum bridge railing, as an alternative to standard products used today such as concrete. Steel barrier systems offer the highway

and road construction industry products that meet and exceed safety standards, protect road workers and drivers, are environmentally friendly and ultimately cost effective.

As part of the education process, there still is a need to harmonize the way the products are tested across the continent. Adopting testing standards for steel barriers is slowly moving forward. Progress for establishing standards across the states needs to be more uniformed between work zones, permanent standards improvement, and highways as industry leaders are confronted with challenges complying with bureaucratic requirements and budgets.

Back to the Future

The question for the pedestrian and road safety industry is as follows; What is the future for road and bridge barrier design? For those who make the decision of which solution better suits our roadways and bridges, in 20 or 40 years from now can we say, "it was the best for our environment; we saved substantial money based on the benefits of steel and aluminum; and most importantly, did our choice reduce injuries and save lives due to vehicle impact?"

Steel Barrier as an alternative to current concrete solutions

Benefits

- Environmentally friendly-50+ year life cycle-and recyclable, (with normal usage)
- Reduce "dead load" weight on bridge decks. "*According to a recent issue of Roads & Bridges, Nearly 59,000 U.S. bridges still structurally deficient, ARTBA report finds."* A natural and proactive solution to prevent more structural issues from "dead load" weight caused by concrete is steel barriers.
- Transitions to concrete, guardrail and all industry standard end treatments
- Available in TL3, TL4 and TL5 MDS (Minimal Deflection Systems) impact protection.
- Lightweight TL5 weighs only 88 lbs while the TL4 weighs only 64 lbs per foot and requires no through deck anchoring.
- Cost Effective-Allows on average 750 Linear Foot (LF) to be hauled on one truck and up to 1500 LF to be installed in one hour

Permanent or Temporary Installation

- Bridges
- Work Zones
- Highway Medians
- Edge of Roadway

Christina Andrianopoulos, MBA Bio

A Strategic Marketing and Business Development Specialist deriving her experience both from serving as a Senior level marketing and communication executive in Manhattan, and as a consultant implementing marketing and business development opportunities for 100+ businesses-from Fortune 500, to start-ups, and non-profits-serving B2B and B2C industries. Christina serves as eNdotoCorp's Strategic Marketing & Business Development Consultant