Precast Concrete
QUALITY VALUE PERMANENCE
Transportation Products

Transportation Products

Precast Concrete Highway Barriers

Precast concrete highway barriers serve as more than just barricades against unwanted vehicular traffic - they also serve as safety devices. When installed parallel to roadways, precast concrete barriers have the unique ability to not only realign stray vehicles, but also reduce their speed. Upon impact, precast concrete barriers partially lift the stray vehicle off of the pavement, which decreases the lateral resistance force between tires and pavement. Once this force is minimized, the barriers can effectively realign and slow the stray vehicle. Precast barriers can be utilized in permanent or temporary applications.

There are three primary barrier shapes used by the states - Jersey, F-shape, and K-Rails. These designs have slightly different performance characteristics for small to medium vehicles and larger vehicles like trucks and busses. State barrier standards require various heights (34" to 52"), lengths (10' to 24') and connection systems (pin & loop, socket & key, plates, and numerous proprietary systems). Recently, the Federal Highway Administration (FHWA) mandated that temporary barriers must have a positive connection between sections.

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Precast concrete is non-toxic, environmentally safe, and made from all natural materials, making it an ideal material for highway use. Even when buried, concrete has proven no ill affects on groundwater and surface water quality. ASTM Specification 825, Standard Specification for Precast Concrete Barriers, exists to help promote quality, durable precast concrete barriers, as it specifies design and manufacturing requirements for precast concrete traffic barrier.

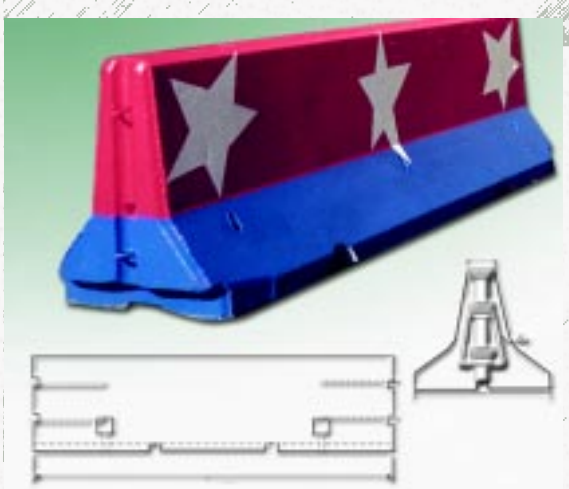
Precast concrete barriers are desirable for highway applications for several reasons:

Durability

Precast concrete remains durable over time and does not deteriorate when exposed to UV light or harsh environments as some other materials do. Therefore, precast can offer an extended service life over other products.

Impact Resistance

Reinforced precast concrete is a solid structure. Hollow barriers, such as plastic filled with sand or liquids, can spill their contents during a collision. Maintenance and/or replacement of a damaged hollow barrier can cause traffic and protection delays, adding to overall project costs.



For more information on precast concrete transportation barriers, please contact:

Economy

Lower long-term costs when compared to other materials.

Crash Resistance

Temporary Precast Concrete Traffic Barriers have been officially tested and passed the crash test requirements set forth in NCHRP (National Cooperative Highway Research Program) Report 350. This report requires positive end-to-end connection between barriers utilizing one of the many available connection systems. The connection must demonstrate the ability to maintain barrier continuity in the event of a crash. Crash test methods are also spelled out in the NCHRP 350, which specifies vehicle weight, angle of impact with the barrier and impact speed for six specific levels of compliance.

Security

Precast concrete barriers, which are normally used in highway applications, are being used more frequently as protection against unwanted vehicular traffic and terrorist activities around government buildings, utility facilities, historical landmarks and airports. Their imposing appearance and mass provide excellent protection properties. In many areas, the barriers adorn their surroundings with a decorative coat of paint.

Ease of Installation

Precast concrete barriers can be ordered, delivered and placed within hours, using only a truck-mounted crane or a forklift. Additionally, if vehicular impact damages a precast barrier, it can be removed and replaced within minutes, with minimal clean-up. With hundreds of precast concrete producers across the U.S. and Canada, barriers are readily available in a short time.

Precast concrete is the material of choice for temporary and permanent highway barriers. Precast concrete barriers are effective, environmentally friendly, readily available and easy to install, less vulnerable than many competing products to damage due to vehicle collision and will not deteriorate when exposed to UV light.

NPCA

National Precast Concrete Association

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www.precast.org