



THE ADVANTAGES OF PRECAST PARKING STRUCTURES VERSUS CAST-IN-PLACE

Precast/prestressed is the dominant and growing structure type on garage after garage in city after city all over this country. This includes government, private and institutional owners, the vast majority of whom bear the costs of maintaining their own garages. When considering the use of a prestressed garage, owners routinely perform detailed cost-benefit analyses and conclude that the modern solution, prestressed concrete, is superior. These analyses consider both the initial cost of design and construction as well as the costs of ongoing maintenance.

More parking garages are built using prestressed concrete than any other method including cast-in-place, post-tensioned or steel. There are a variety of reasons for this, both at the project site and in the manufacturing plant. All of which benefit you, the owner.

Using prestressed concrete is faster and allows for minimal site disruption during construction. Because prestressed components are fabricated and stored in the plant until the site is cleared, graded and prepped, large staging areas for equipment and materials are not needed. This means less land to secure for construction, less traffic, and less disturbance to the surrounding neighbors, pedestrians and environment. This also means you will have a cleaner site with less dust and less construction debris and garbage. You will also reduce the potential for destructive theft or vandalism. Surface lots that are required for staging cast-in-place materials such as forms and equipment are not needed. They can continue to be used for parking cars during construction. Since the fabrication of the prestressed structural components coincides with site preparation work and because pouring prestressed concrete in our factory environment is faster than casting-in-place, your project arrives at the completion date much sooner, usually months sooner. There are no snow days, no rain days, no wind days at the prestressed plant. For garages constructed in winter climates this makes a big difference.

Prestressed concrete is safer. Prestressed components are fabricated in a safe plant environment under the supervision of our certified safety inspectors who are constantly evaluating the layout of our facilities with an eye on eliminating risks. This means no workers up on scaffolding exposed to the risks of moving cranes, trucks, weather, electrical cables, falls, trips, and slips. This also means that our structural products arrive at the site fully cured and at full strength. There is no pouring of structural concrete at the site and therefore no risk of a forming or shoring collapse. In fact, there is very little risk of any injury when building a prestressed garage. There is also no risk of a strike or a labor shortage. This helps our costs and gives the owner peace of mind. Once the garage is erected, prestressing technology allows for longer spans with more open bays and less columns. This means less columns for cars to back into, more usable parking spaces than a cast-in-place alternate and less columns to conceal undesirables. Combined with modern metal-halide lighting, a garage with less columns is a safer garage.

Our product is higher quality. Our plants are certified by the Prestressed/Precast Concrete Institute and our products are manufactured under the watchful eye of independent quality control technicians who document every pour ensuring that a specification is never violated. In the unlikely event that a mistake is made, the individual component can be quickly remanufactured with no effect on schedule. In the past four years, at 8 plants, Prestress Services experienced ZERO fabrication mistakes that resulted in a delay at the site. On a cast-in-place project, if a mistake is made the only remedy is to delay the project until an engineering solutions can be agreed upon or tear out the bad work and rebuild. This assumes that you, the owner, are 100% aware of all mistakes. Anyone familiar in dealing with general contractors knows that this is unlikely.

Prestressed concrete is more durable. Prestress Services typically achieves concrete with compressive strength of 10,000 psi, far in excess of what is routinely found in cast-in-place. It has taken the industry years of development to achieve this technology which is not proprietary and is enjoyed by all prestressed concrete producers regionally and nationwide. A typical cast-in-place contractor, if they were lucky, would achieve 4,000 psi under perfect conditions. It doesn't take an engineering degree to understand that 10,000 psi concrete, produced in a climate-controlled quality-assured environment is far more impervious to road salt and corrosion, and will provide far greater longevity than 4,000 psi concrete poured by laborers and cured in open elements under variable temperatures.

Our cast-in-place competitors love to talk about caulk. While it is true that a prestressed garage does have a lot of caulk joints, if they are prepared and installed correctly there will be no issues. Furthermore, because our components are so strong, if there is a problem in a prestressed garage it is typically due to a leaky caulk joint which is relatively inexpensive and quick to repair. This is unlike a cast-in-place garage where leaking and cracking problems are structural in nature and very expensive to even identify yet alone repair.

Many years ago, precast garage builders used third party caulking contractors who were not under the direct supervision of the precast manufacturer. Oftentimes, the caulking contract was retained and performed by the general contractor with no involvement or oversight from the precaster. What a bad mistake that was on the part of the prestressed industry. Under that former arrangement, the contractor would cut corners to do the job as cheaply as possible and OUR reputation would suffer. Adding to the problem, in order to cut costs contractors always used cheaper urethane-based caulk which is sensitive to solar ultra-violet radiation and which over time would begin to break down and compromise the watertight seal. These days, the prestresser is in charge of the caulking and we only use effective (and, yes, more expensive) silicone-based specialty caulk which is not effected by sunlight and are designed solely for the purpose of sealing prestressed components. There are garages all over this country with joints sealed using silicone caulk that haven't been touched in fifteen years with no problems. The maintenance myth is just that: A failing myth created by our competitors using embellished horror stories from years past propagated to scare you about caulk.

With the aforementioned reasons considered in a cost-benefit analysis, owners should probably buy precast/prestressed garages even if they were MORE expensive. But they are not. They are less expensive. For the same reasons that make us more valuable also make us less expensive: the factory production, the speed, the safety, and the predictable and inexpensive maintenance.