

The Value of Cast-in-Place Concrete

Reinforced cast-in-place concrete is used on almost all construction sites around the world in today's industries. In relation to other building components such as wood, reinforced concrete is a much more valuable product to use. Since concrete is naturally fire resistant, cast-in-place concrete structures usually receive a reduced rate on fire insurance, benefitting both the contractor and future owner. Concrete will also provide a structure with more durability and strength than that of a wooden building. Concrete is also known to have low maintenance needs throughout its life span, as opposed to the much needed fixing and replacements that wood requires. With a contractor using cast-in-place concrete instead of wood, the owner will receive a structure that is more fire resistant, durable, have higher strength, and will require less maintenance, resulting in an overall better value for that owner.

A building component that is constantly in demand in today's construction industry is structural steel. Many buildings being built today contain a skeleton of steel columns and beams. If that skeleton was replaced with cast-in-place concrete, that owner would have a structure that was built in a shorter period of time, has more marketing space, and savings in energy costs over time. Since no fabrication is necessary for concrete, the projects start time is much shorter than that of steel. Once the notice to proceed is issued, contractors can count on just-in-time delivery from a local concrete supplier, as opposed to waiting months for a steel fabricator produce all the steel components, and waiting on delivery to install those components. Once construction begins, concrete work is completed much faster than that of erecting steel. Just under 15% fewer delays

have been reported during the framing process when concrete is used in place of steel.

Admixtures in concrete can now allow a poured portion of a structure to cure and gain strength much quicker, allowing the next floor to be poured in a shorter amount of time. Concrete structures on average take up less space than that of steel. With a 2' smaller floor-to-floor height, concrete buildings provide the owner with more marketing space. During construction, the concrete process has a much smaller footprint than that of steel, allowing contractors to build in confined spaces, while other parts of the site can be used for other needs. Studies have shown that concrete buildings have lower heating and cooling expenses, saving the owner in energy costs throughout the life of the building.

Masonry is similar to cast-in-place concrete but will not provide the same value. Masonry not only takes more time to install, but masonry units need to be fabricated, delivered, and stored on site, leading to an overall extended period of time that cast-in-place concrete would not require. Cast-in-place concrete can also be spread over larger areas much quicker for structures such as slabs. With admixtures and special forms, cast-in-place concrete can cure into a structure that looks like a masonry product but, for a much lower price and shorter construction time.