

## ***What a Mockup Should and Should Not Be***

Mockups are sometimes used for structural concrete and are almost always used for architectural concrete. They are intended to serve as the reference against which the structural or architectural concrete will be compared for acceptance. Unfortunately, mockups are often used to adjust or change the specifications to satisfy the Owner's, Architect's or Engineer's expectations. Or to put it another way, mockups are often contractors' first realization that their bid will not cover the cost of satisfying someone's expectations.

### **A Mockup Should.....**

be a quality assurance provision in the specifications. A mockup is a sample provided by the contractor showing that the coordination of the materials, means, and methods meet the surface requirements set forth in the specifications. Once the mockup is approved, that is, satisfies the specification requirements, the mockup is used in quality control to set the standard for workmanship on the project.

The most important part of the quality assurance process is that the mockup is to be compared to the specified requirements and the specification requirements must be measurable. A mockup should always be constructed with the materials, methods, and workers to be used on that project and should incorporate all relevant features to be evaluated in the mockup.

### **Top Five Tips for Evaluating a Specification for a Mockup:**

1. Is the viewing distance specified? ACI 301-10 "Specifications for Structural Concrete" requires a viewing distance of 20 ft. for acceptance.
2. Are the physical requirements for the surface stated clearly?
3. Are the sampling plans and measurement methods for the physical requirements described?
4. Is the time for viewing the mockup for color differences stated? ACI 347.3R recommends a minimum time of at least 8 weeks before viewing.
5. Does the mockup include a repair evaluation?

### **A Mockup Should Not...**

be subjective. The most objectionable specification requirement is a statement that the mockup must produce a result that satisfies the Architect, Engineer, or Owner. This requirement is subjective, not measurable, and requires contractors to provide a speculative bid. This subjective acceptance criteria also makes it difficult for the Owner to obtain bids on an equal competitive basis because contractors will make different assumptions as to what might be required. When the surface requirements aren't stated implicitly in the specifications, and contractors finally understand what is expected based on the mockup, they may then submit a change order. The change order will seek alteration of the original contract amount or completion date to meet mockup requirements that were never stated in the specification. In this case, it's the Owner who suffers from a poor mockup specification by incurring an increased price for what was not a competitive bid.