

AACE
INTERNATIONAL
RECOMMENDED
PRACTICE

88R-15

**TRACKING THE PROCUREMENT
PROCESS USING A CPM
SCHEDULE - AS APPLIED IN
CONSTRUCTION**

SAMPLE

AACE
INTERNATIONAL

AAACE International Recommended Practice No. 88R-15

TRACKING THE PROCUREMENT PROCESS USING A CPM
SCHEDULE – AS APPLIED IN CONSTRUCTION

TCM Framework: 7.1 – Procurement Planning

Rev. December 28, 2016

Note: As AAACE International Recommended Practices evolve over time, please refer to www.aacei.org for the latest revisions.

Contributors:

Disclaimer: The opinions expressed by the authors and contributors to this recommended practice are their own and do not necessarily reflect those of their employers, unless otherwise stated.

Delbert E. Bearden, PSP (Author)
Rumi Ansari
Abhimanyu Basu, PE
Stephen M. Beck, CCP
Robert B. Brown, PE
David H. Doughty, PSP
Victor Onos Esiemokhai, PSP

Boris Konrad, CCP PSP
John P. Orr, PSP
Richard C. Plumery, EVP
Hannah E. Schumacher, PSP
Peter W. van der Schans, CCP PSP
Ronald M. Winter, PSP

TRACKING THE PROCUREMENT PROCESS USING A CPM SCHEDULE – AS APPLIED IN CONSTRUCTION

TCM Framework: 7.7 – Procurement Planning



December 28, 2016

INTRODUCTION

This recommended practice (RP) is intended to provide procurement tracking guidance for any project that requires the planning, submitting for approval, and final delivery of material and/or equipment, prior to installation, in order to complete that project. This RP excludes development of the procurement strategy.

This document is intended to provide a guideline, not a standard. This RP provides the following recommendations:

- Defines the stages within the procurement process.
- Recommends a priority system to be used during the procurement process.
- Recommends a process for submittal review and approval.
- Recommends a process for handling submittal rejections and resubmittals.
- Recommends a processes to track the procurement process within the project.

While this recommended practice is written with the construction industry in mind, it may be adapted for use in other industries requiring a similar approval process prior to final delivery of material and/or equipment. The processes described in this RP assume the use of a CPM network schedule; however these principles can be applied to other types of schedules.

Many contract specifications require the project schedule to include the procurement and delivery of major equipment. These deliveries have the potential to affect the schedule's critical or near-critical paths. For this reason, it is essential that this process be defined, monitored, and managed correctly to prevent this process from delaying the scheduled project completion.

RECOMMENDED PRACTICE

The Procurement Process

Many projects that involve the creation of a plant or building from a completed set of plans, specifications, and/or other contract documents must present material and equipment to the project owner or their representative for approval prior to installation of the material and/or equipment within the project. In most cases, the material and/or equipment cannot be ordered, purchased, or fabricated prior to the owner's representative granting approval that the material and/or equipment conforms to the contract documents.

The type of contracts depend on the procurement strategy adopted by the owner. At project initiation, the project owner must choose a project delivery method such as design-bid-construct, design-build, integrated project delivery etc. The CPM scheduler does not participate in any of these decisions but must be aware of and factor in the decisions in the procurement tracking process.

The focus of this RP is on procurement tracking to support the construction phase. The procurement steps in the construction phase comprise a number of basic steps. These steps may differ slightly based on the type of contract.

The procurement process can be broken down to the following elements:

1. The specification process:
 - a. Identify need.
 - b. Research and identification of equipment and/or material.
 - c. Specify equipment and/or material (manufacturer, vendor or equivalent information).

December 28, 2016

2. The ordering process:
 - a. Place contractual obligation for purchase of fabrication, material, or equipment.
3. The submittal process:
 - a. Submittal preparation by the contracted party and submission for approval.
 - b. Buyer review and approval of submittals.
 - c. Resubmittals if required.
 - d. Deferred approval by the permitting agency.
4. Fabrication of material or equipment:
 - a. Fabrication.
 - b. Factory acceptance testing (FAT) or other specified testing requirements.
5. Shipping & delivery:
 - a. Packaging.
 - b. Shipping (air, sea, land).
 - c. Storage for future installation.
 - i. Documentation of stored location.
 - d. Delivery to project site.
6. Quality assurance & control:
 - a. Quality assurance & quality control may be required during the fabrication, delivery, and installation phases, during and after the procurement process to ensure that what was designed, submitted, and approved is what is being installed.
 - b. Manufacturer's representative for installation oversight, testing, commissioning, and training.

SUBMITTALS

Submittals is the process where the contracted party provides detailed information to the owner or their representative (i.e. architect, engineer, construction manager, or designer) as to required material and/or equipment to be installed as part of a project. Such detailed information is presented in order to obtain approval that the information meets the requirements of the contract documents and such approval must be obtained prior to installation of the material and/or equipment, and in most cases before the material and/or equipment can be ordered, fabricated, and delivered.

The general flow of the procurement process requiring submittals is shown in Figure 1.

December 28, 2016

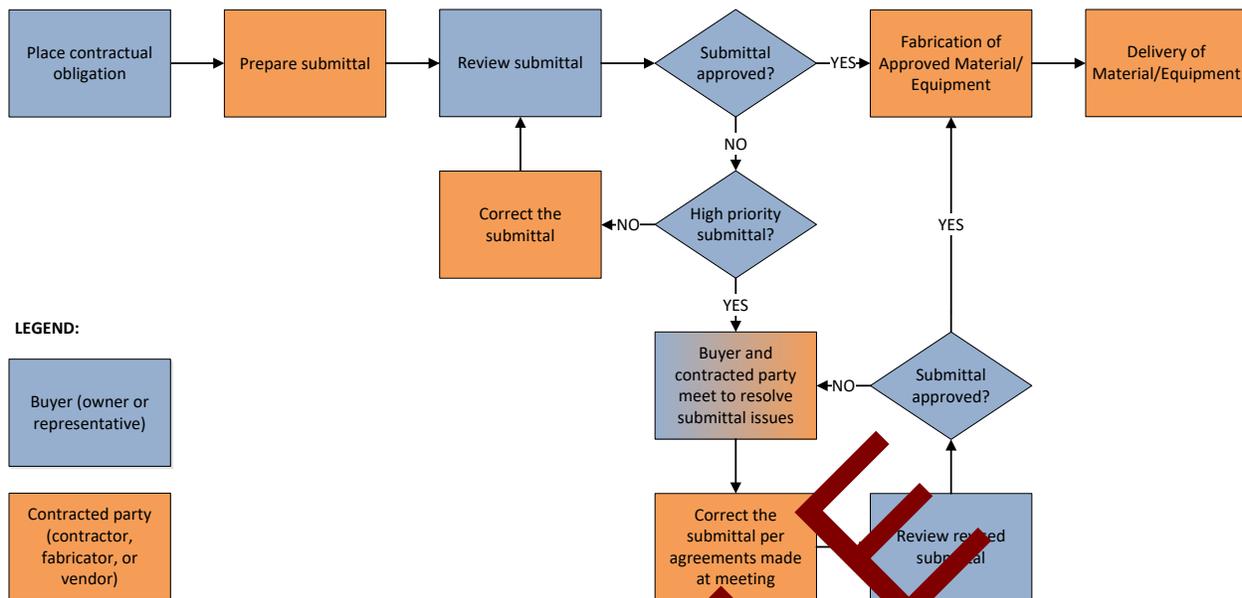


Figure 1 – General Procurement Process Requiring Submittals

The submittal process ensures that the procurement of materials and/or equipment meet the specifications required by the contract documents. Delays that could result from the procurement and installation of off-spec materials can thus be avoided at the time of comprehensive submittal review.

All submittal requirements should be identified in the contract documents, typically within the specification section. A comprehensive list of all required submittals should be prepared.

A priority system for the submittal process should be developed to ensure those submittals where late delivery may delay the project are addressed in the appropriate order. The ability to determine critical or high priority therefore requires an initial CPM schedule has been developed. During the development of the schedule this priority for submittals is considered. The required installation dates for procured material (and the associated CPM float calculations) are essential to this effort.

It is important to establish and define the priorities at the beginning of the project and ensure that all members of the project team are informed. The priorities may be designated numerically (1, 2, 3, etc.), alphabetically (a, b, c...x, y, z) or a combination of both. For this RP, the priorities are defined as high, medium, and low.

- **High:** High priority submittals include procurement items with zero or little total float, making the delivery and installation a critical or near-critical activity. Other high priority submittals may be for procurement items needed within the early stages of the project's execution (e.g. the first 90 days of the construction phase). Additional high priority items may include procurement items with extremely long lead times for fabrication and delivery that may affect the critical path.
- **Medium:** Medium priority submittals include submittals for procurement items to be installed after the initial start of the project's execution, but not as late as the final (finishes) stage of the project. Procurement items that have a moderate to long lead time for fabrication and delivery, but are not considered to be critical or near-critical activities, may be designated as medium.
- **Low:** Low priority submittals include procurement items with their delivery activity having a high total float value, short lead times for fabrication and delivery, or that may not be required until the final stages of the project.