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## Supply Chain Quality Management: Control it before it controls you

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**For general contractors, subcontractor performance is everything. And with tighter project schedules more common across the construction industry, procuring and fabricating materials globally the new norm, and the growing need to use materials that are sustainable and manufactured safely and to code, not managing your subcontractor's supply chain can cost you.**

In the push to deliver projects quicker, cheaper, faster, general contractors find themselves at an increased risk of default when making what seems like deals with the devil to deliver on such tight expectations. In fact, XL Catlin is seeing increased losses as it relates to construction supply chains.

Schedules are so tight, there is virtually no room for error. Add to that supply chains heavily taxed, particularly those producing core products in the construction industry – think commercial glass and PVC piping, for example. Chances are there are only a small, finite number of providers that can source/produce the materials you need, or that can step in adeptly at the last minute to get a project back on track quick when a component suffers a failure. Suffice it to say, rebounds to any errors, delays or defects in your orders can be lengthy and, therefore, expensive. And the time and headache of having to re-procure materials because of an issue that could have been avoided greatly impacts the project. It wastes materials, can sacrifice overall project quality, hurts the client and, ultimately, can be a hit to your reputation. So taking control and assuring quality at key checkpoints along the way with your subcontractor is critical.

### Trust but verify

Supply chain management isn't just about knowing where materials are being sourced or fabricated, how they're getting to your project site or when they will arrive. It's knowing these things within the context of your project specs and requirements that's the key for Risk Mitigation Planning (RMP), particularly when your subcontractor is smaller in size and/or if it's the first time you're working with them. Is the subcontractor using the right raw materials? Are products being manufactured to job specifications? Can you inspect a sample? Is what's being produced the same as what was ordered? Did the job ship? Can we see the P.O. confirmation? That's the depth you need to go to verify what you've been promised verbally is what's being done.

Continued

Managing all aspects of your supply chain means baking in quality controls and assurance checkpoints throughout the project to make sure subcontractors deliver on your – and your clients’ – expectations and avoids project delays, shoddy work and other compromising situations. It allows you to catch and correct issues right away, and ideally helps you anticipate and/or avoid issues altogether. It can also help you develop best practices and differentiate you in the market as a strong quality provider in the construction industry.

## Avoid costly kinks in your sub’s supply chain

How possible is it really to control and assure supply chain quality on your construction project? Projects vary so much from one to the other. They have so many moving parts and codes to adhere to. They require so many different skill sets, laborers, and materials. There can be several diverse and dispersed trade providers contributing to a subcontractor’s product who you may not know well if at all. Yes, supply chains can be long and involved to protect. But when there’s a quality fail, the impact to your productivity and profitability overall, to customer satisfaction and your reputation can go even longer. So it’s a business imperative to get the comfort you need. Consider these “no control” scenarios and how easily they could have been avoided.

### Crossing the wrong “finish” line

The contractor on a multi-family residential project was awaiting cabinetry from China. Samples were provided, shop drawings were approved and a mock-up and full fabrication was completed. Once the material was packed and shipped stateside and delivered, it was discovered that the finish/color for the entire order was incorrect. This resulted in valuable time lost to re-procure the work, and pushing out the project completion date. While it may be difficult and/or expensive for a project team member to verify material prior to overseas shipment, there are 3rd party consultants that provide inspection/verification services for foreign-sourced materials.

### Do these vertical lines make me look tall?

Curtain Wall extrusions procured for a commercial installation in the Northern US state nearing the winter months were fabricated and coated in a factory in South America. The coating had a linear grain finish. Submittal was provided and approved, but when the material arrived on-site for installation, it was discovered that the grain on the finish was running the wrong way, going vertical instead of horizontal. This would have been noticed easily had it been installed on a mock-up. Submittals in isolation may not tell the whole story on the quality of materials. So when fabricating long lead items, particularly of proprietary materials like curtainwall, take the necessary quality control and assurance steps to avoid mistakes can severely impact the project in schedule and budget.

### There’s a right and a wrong side to punch out.

Casework for an institutional fabrication project wound up needing post-shipment field modifications. Why? While samples were provided and shop drawings approved and the full mock-up and entire run of fabrication completed, after shipment, it was discovered that the pre-fabricated punch knock-outs were incorrectly located in the fabricated casework. Take the opportunity to verify that materials are compliant prior to shipment or during fabrication – color, size, details, etc. so that a whole order is not completed wrong. Course correcting in the field not only causes delays and can result in lesser quality finished product.

Think about areas of vulnerability in your subcontractor supply chain. How can you sidestep potential quality pitfalls, and be confident that you’ll hit your punch list on time and with accuracy?

## There are controls for this!

There are many Quality Control and Quality Assurance approaches that can help you effectively manage and safeguard your supply chain and your project’s outcome. They all begin with being proactive. While there are many detailed steps you can take depending on the kind of project and requirements, consider the following key activities as a core approach to build on and customize:

### Start with a plan

At the start, it’s important to draft a Project Specific Quality Plan (PSQP) that thoughtfully addresses how to apply quality best practices specific to each project’s needs. This is the best mechanism for ensuring that your project-specific quality risks are on the radar and the team will implement best practices to effectively manage them. The PQSP’s emphasis is really about identifying risks in the supply chain specific to your project and commuting to an intentional means of managing them.

### Dedicate a “Quality” resource

A dedicated Quality Control/Quality Assurance Director/Engineer that’s focused on all things quality for every project is key to driving the Long Lead Material Procurement Plan, managing shop drawing scheduling and submittal QC reviews, conducting the factory visits, monitoring and expediting and inspecting of materials, warehouse management, project completion documentation and other functions as determined.

### Carefully Review the Submittals and Shop Drawings

These procedures are designed to identify inconsistencies between project specifications and the final product. Diligent oversight of the submittal process should include confirmation of production commitments, product finish status information, storage conditions, correctness/adherence to specifications, test reports, quality notes, photo documentation prior to project arrival, verification of stored materials, adherence to a fabrication schedule etc.

**Show up**

Set forth a schedule to make factory visits, or arrange for 3rd Party visits to subcontractor/supplier manufacturing facilities. This will ensure progress is as reported and meets your QA/QC requirements.

**Preselect alternate subcontract/suppliers**

Make "worst case scenario" plans to engage alternate subs/suppliers in the event that a default occurs somewhere along the chain and the work cannot continue. Who does what? Who's on the short list? Just like an emergency response plan, if you never write it or think about it beforehand, it will cost you time. Even if circumstances change (and guaranteed they will) any time you spend identifying duties and plans in advance will be a major time save.

**Plan for worst case / unforeseens**

Uncontrollable factors (i.e hurricanes, natural disasters, uncommon foreign holidays, etc.) can dramatically affect contemplated lead times during the course of the project - it is key to build enough time around key materials into the schedule and have a plan for local storage/stockpile and continuously monitor for changes in lead time.

**For large project packages requiring significant fabrication, add to your plan:**

- Monthly scorecards to ensure that both they and the subcontractor are aware of their performance
- Continually:
  - Confirm that the subcontractor is current with their major vendors (ensure you have contractual cut through provisions to these vendors if needed)
  - Monitor field production. The labor force in the field will possibly only work to the amount of panels/units that are on site in the case of financial distress- trying to avoid layoffs.
  - Review bank lines and all long term debt of the firm (get letter of verification at start and regularly throughout project)
- Periodically send a member of the operations staff to verify that the product is being produced in sufficient quantities to ensure that they won't adversely impact the schedule. This should be done weeks or months in advance of the first shipment to the jobsite.
- Prior to delivery/mobilization in the field, visit the plant. Reviewing the production schedule is no substitute for being in the plant, physically verifying production and making sure there are sufficient materials to complete the production run.

**And if there is a default...?**

Act swiftly to immediately re-procure. Every day is critical. A few working days can mean the difference between the open spot in an alternative production line or a delay of months.

**Quality not just another brick in the wall**

It's not enough for you to just know your subcontractor's supply chain, you need to take it one step further and control and assure its quality all along the way. By owning the quality aspect and valuing its impact to your project goals, you will have comfort knowing that you can mitigate risk throughout the scope of the project under the most unforgiving of project parameters.

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