



# QUALITY ASSURANCE AND CONTROL PRACTICES THAT EVERY CONSTRUCTION PROJECT NEEDS

BY DAVID MADISON AND CAMILLE EDWARDS

**This past fall, FMI's risk management team met with several large general contractors (GCs) to discuss their biggest risk management concerns. Just what were these concerns? Standard procedures and best practices for quality assurance and quality control (QA/QC), and the challenges associated with them.**

We then sat down with several of the leading subcontractor default insurance (SDI) carriers to discuss how best-in-class organizations are managing the challenges of quality assurance and quality control. What was clear from these conversations is that as projects become more complex and timelines continue to compress, problems are more likely to arise.

In short, having a strong QA/QC function and program is integral to successful projects. Here we outline several themes that will help you improve your internal QA/QC program and ensure that your efforts yield results.

## 1. CULTIVATE A CULTURE OF QUALITY

“A culture of quality management is paramount,” says Nathan Rosenker, an SDI risk engineer at Liberty Mutual Insurance. “Making sure that your staff is qualified, capable and systems oriented is crucial to success for quality management. We (as insurers) understand that having a dedicated quality resource on every project is not a likely scenario due to cost concerns; however, there can be a way for dedicated quality champions (assistant supers, project engineers, etc.) that are responsible to make

sure checklists are being followed, work is being inspected, etc.”

**Pro Tip:** Chris Heider, a risk engineer at Optio, has observed that some contractors find success by pulling a young professional who’s been impressive on a project and empowering them to lead quality initiatives. This can provide the person with a valuable opportunity to demonstrate ownership and leadership, which can foster growth within the organization.

## 2. ESTABLISH AND BENCHMARK QUALITY STANDARDS

Defining clear quality standards and benchmarks across the project ecosystem, particularly for complex projects, is paramount to project success. Metrics and key performance indicators (KPIs) enable you to consistently evaluate contractor and subcontractor performance.

### Required metrics and documentation

- Site-specific plans that take into account foundation/structural, envelope, mechanical and electrical work scopes
- Staffing plan (responsibility assignments) for quality of various scopes of trade work

- Open item closure rate and time to close
- Tracking the number of deficiencies, rework and inspections
- Data linking rework and safety
- Formalized documentation for:
  - Engaging third-party consultants
  - Documenting deficiencies
  - Reporting inspections and job-specific activities
  - Tracking shop drawings and submittal approval/acceptance
  - Outlining the material verification procedure and mock-up protocols
  - Explaining warranty/callback plan
  - Logging nonconformance
  - Covering QA/QC during preinstall, coordination and first work meetings
  - Recording the issue, location, corrective action and responsible party



To leverage the value of the data and metrics collected, it must be available up and down the organizational chart and across outside teams. Technology makes it easy for support staff and site-based crews to “assess what the issue is, where it was found, how it can be corrected and who the responsible person is for closing out the deficiency,” Rosenker says.

**Pro Tip:** Augment off-the-shelf software to provide data that delivers a company-wide view. “The best systems we have seen are those designed by internal IT groups that extract data from each project management platform and roll it into simple dashboards for executive management to view monthly,” explains Stephen Villarreal, director, SDI risk engineer, at Arch Insurance.

It’s also crucial that your QA/QC standards reflect new regulations or industry changes. Beyond keeping current with updates to your project management platform, Heider recommends a continuous process of monitoring and revising.

“Leverage internal teams, external stakeholders, industry groups, regulatory bodies and peer confer-

ences to gather insights and share information,” he says. “Then institute internal audits and procedural documentation reviews to assess adherence to current standards, identify areas needing updates and inform regular training for employees.” The process should include a feedback mechanism for employees to offer suggestions or share concerns that an item is not addressed or out of date.

### 3. COLLABORATE WITH SUBCONTRACTORS ON QA/QC STANDARDS

Since subcontractors play a pivotal role in QA/QC initiatives, they should be included in and informed of all quality aspects of a project. Heider says these strategies improve collaboration and engender a sense of shared responsibility:

- Discuss QA/QC during prequalification.
- Write clear contract requirements outlining expectations, standards and responsibilities.
- Share performance metrics and hold subcontractors responsible for meeting them.



- Convey QA/QC expectations explicitly during kickoff meetings.
- Perform regular documentation reviews.
- Communicate regularly.
- Establish and enforce inspection protocols.
- Institute a feedback mechanism for subcontractors to voice concerns and suggestions.
- Offer incentives for consistent meeting or exceeding of quality standards.
- Track and communicate warranty issues to ensure closure.

**Pro Tip:** “Include QA/QC language in the subcontract. This can be a broad-brush approach for all trades or a more selective approach focusing on scopes of work that historically have defect or nonconformance issues, marginally qualified subcontractors or unexplained low bids,” says Jamie Curcio, SDI/construction risk manager for Hudson Insurance Group.

## 4. IDENTIFY AND RESOLVE DEFECTS QUICKLY

The sooner you detect and correct errors and defects, the quicker you can get back to work. Proactive strategies should be deployed at every stage.

- **Buyout:** Communicate quality expectations and documentation processes clearly.
- **Preconstruction and premobilization:** Convene installers and other subcontractors to coordinate and account for installation means, methods, standards, etc.
- **Throughout construction:** Empower employees to stop work to keep deficient work from being overlooked or ignored.

These practices are especially important when using less experienced or under-supervised subcontractors. “They’re most likely to produce nonconforming work from lack of supervision or experience,” Curcio says. “When these marginally qualified subcontractors must be used, understand their QC procedures and supplement them as necessary with verified inspection of materials, means and methods review, documented verification of work, etc.”



## TACTICS THAT PROMOTE SWIFT RESOLUTION

- Communicate regularly about open defect items, deficiency reports, meeting minutes and other issues.
- Establish a defect resolution team of site managers and project managers.
- Create contingency plans for critical aspects of the project.
- Monitor and document continuously.
- Establish specific timelines for resolving defects and hold team members accountable for meeting the deadlines.
- Conduct post-resolution reviews to capture lessons learned, which can improve future defect management processes.
- Link completion of QA/QC — detailed work, inspections and punch work — to pay, perhaps as an inspection line item on the schedule of values (SOV) or as an activity in the critical path method (CPM).

**Pro Tip:** Working with subcontractor partners who share your commitment to quality is imperative in meeting and maintaining QA and QC goals — yet many construction firms wait too long to end a relationship, exacerbating the negative impact, Curcio says. “We always hear, ‘I wish we would have parted ways sooner.’”

“Quality of work claims accounts for 5% of the quantity of the claims but ends up [causing] 20% of the total losses,” Rosenker notes. “And quality of work [as a cause of] of default is approximately 50% of the scope. Another way to think about it is that while schedule performance issues often result in default, after default a portion of work is also found to be deficient from a quality standpoint. This means that not only was the subcontractor not performing in accordance with the schedule, but that additional rework will also be necessary.”



## HOW TO MAINTAIN QUALITY WITH ACCELERATED TIMELINES AND COMPLEX PROJECTS

Accelerated projects can be difficult from a quality, safety and schedule perspective, and often contractors don't have the capacity to focus on more than two items due to:

- Inadequate planning
- Poor communication
- Overlapping phases of work
- Insufficient documentation
- Rushed inspections
- Installation without fully approved submittals
- High volume of change orders
- Fragmented or insufficient QC

Because of the accelerated timelines, quality issues may not be identified until another contractor's work has been completed after the initial subcontractor's work, creating even more nonconforming work. "We see folks miss critical information and steps in fast-track projects, especially when the project falls behind schedule," says Villarreal. "Trade folks are excellent at their work, but if the site-specific requirements aren't communicated to them, they will install their materials and equipment according to industry standards."

Maintaining quality with fast-track projects requires a dedicated quality manager or quality champions, particularly in regulated environments and when it comes to projects with high rework histories. The quality lead can request peer reviews, constructability checks and automated testing, especially in specialty trades like roofing or curtain walls. "Another best practice is enforcing more schedule update meetings with subcontractors to help ensure they are staying on track with the pace of the job and tying in more installation coordination meetings," notes Villarreal.

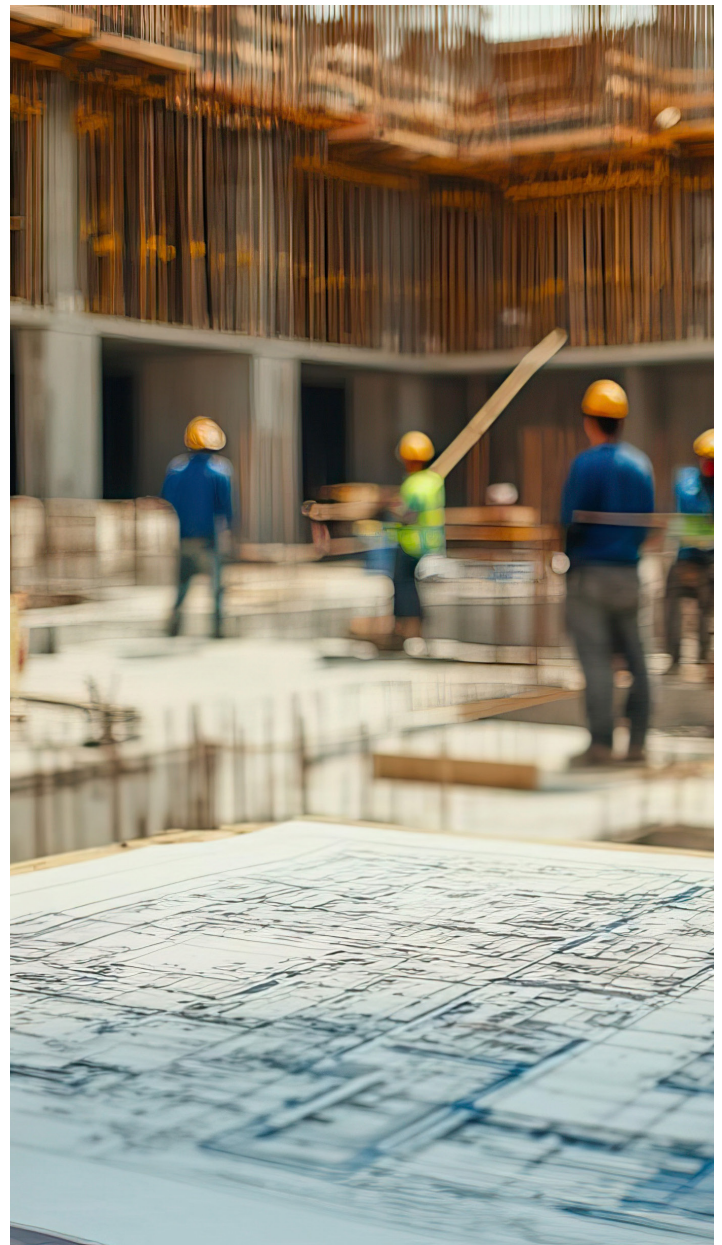


## THE BOTTOM LINE

Quality is more than a cosmetic concern or surface issue — it directly impacts your employees and sub-contractor partners, your reputation within the marketplace and the bottom line of a project, particularly when rework is required. Given the potential impact a company's QA/QC program can have on the success (or failure) of a project, more and more organizations are focused on building out strong internal systems to track quality deficiencies, establishing consistent standards across the entire organization and identifying key quality champions by project or even hiring a dedicated QA/QC manager.

In the construction industry, where precision and reliability are nonnegotiable, quality assurance and quality control are more than operational necessities — they are strategic imperatives. A strong QA/QC program safeguards not only the structural integrity of projects but also the reputation and financial health of your organization. Building this foundation requires more than tools and checklists; it demands a cultural commitment to quality that permeates every level of the organization.

By identifying internal quality champions, fostering accountability and establishing consistent, organization-wide standards, contractors can move beyond reactive fixes to a culture of accountability. In the end, a commitment to quality isn't just about managing today's risks — it's about securing long-term success.



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