

Managing the Risks of Curtain Walls

Take precautions when selecting subcontractors and suppliers for curtain wall projects to insulate your business from disruptions and implications.

Evaluating curtain wall risks has taken on a new level of importance for general contractors. The production process of these building envelopes has become increasingly complex and specialized, resulting in the potential for supply chain disruptions. Further, superior curtain wall subcontractors are difficult to find, as global economics and financial stress have greatly impacted this niche industry.



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In fact, three of the top-15 curtain wall firms have failed during the past two years, according to information compiled by the U.S. Glass Association.”

General contractors should be diligent about managing the risks associated with curtain walls — specifically, their evolving composition, because of advances in technology and international competition, as well as the validity of the subcontractors enlisted to complete the work. Not doing so may result in large losses.

Zurich’s claims experience from its subcontractor default insurance program demonstrates that curtain wall risk is pervasive across geography, general contractors and curtain wall subcontractors. However, the value of subcontractor default claims for curtain wall projects is three times the average value of similar claims for all other trades, according to Zurich’s Subguard database that tracks all defaults. That same data also indicates that nearly half of the 11-largest claims during recent years stemmed from default on glass or curtain wall projects.

Driving these claims, in part, has been the evolution of building design and the

changing role of curtain wall companies over the last 40 years. They have become more like small general contractors themselves, farming out the increasingly complex production process to specialized vendors to accommodate modern architecture’s departure from traditional building shapes, sizes and height.

The same advances in technology that have allowed for innovative building design have also allowed for improvements in curtain walls. New software allows project participants to visualize, coordinate and speed the delivery of curtain wall components. Advances in materials science have yielded composites and finishes offering greater strength and durability.

All of these advances can complicate risk assessment though. They necessitate cutting-edge manufacturing plants, sophisticated equipment and technical personnel, possibly creating hefty overhead costs for the industry’s



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specialized vendors or suppliers that are already financially strained because of the reduced construction volume during the recession.

Recession aside, many curtain wall subcontractors still struggle to profit. The smallest of the top 50 curtain wall firms have sales of \$5 million per year, and only one-third have annual sales in the \$10 million to \$20 million range, according to the National Glass Association’s “Top 50 Glaziers Survey” from 2013. In addition, sales volume for the most recent year is lower than it was prior to the 2007–2008 recession.

The survey also highlighted improving sales for the majority of firms, but increased profit margins for a select few. It also indicated that many firms are completing projects that were priced and sold during 2007–2008, further stressing their financial viability.

As a result, general contractors struggle to find viable curtain wall companies with access to quality vendors that have the appropriate technical skills and resources to complete their contracts. When a curtain wall contractor defaults on a large project, it can be very difficult to readily replace that contractor and all the related specialized vendors. Not only can it be difficult to find a financially viable curtain wall subcontractor with adequate resources, but also it might be almost impossible to find subcontractors with vendors that are all local to the project itself, as curtain wall production has become increasingly international in scope.

China, in particular, is a major supplier of curtain wall components. As the largest producer of float glass, China produces nearly one-third of the world’s major curtain wall components, including glass, aluminum extrusions and composite panels.¹ China has established subsidiaries in the U.S., which have operations that fabricate components in China, and may ship the components to Mexico for assembly, followed by delivery to the U.S. for installation.

Several risks must be evaluated when relying on foreign suppliers:

- Products that do not conform to U.S. or Canadian specifications
- Little or no quality testing of the actual product
- Nontransparency, which enables a domestic subcontractor to use foreign materials
- Limited possibility of financial recovery from a foreign corporation
- No warranty recourse

Should a curtain wall subcontractor run into one of these problems with an international vendor or supplier, it could find itself in a precarious situation — unable to fulfill a project and in default. Even if vendors or suppliers are not international, the multifaceted nature of curtain wall production helps to explain the expense behind these increasing subcontractor default claims, as previously discussed.

For example, compare a curtain wall subcontractor default on a large project with a structural concrete subcontractor default for that same project. The concrete subcontractor’s scope of work typically includes labor and materials that are readily available from multiple alternate sources within the project city and almost certainly the region, making default less severe.

Curtain wall subcontractors and vendors, on the other hand, may use proprietary systems or make project-specific components overseas.

Specialized products like triple-glazed bombproof glass units may come from a sole-source provider. The complex production of curtain walls is unavoidable, and engaging curtain wall subcontractors with international vendors isn’t entirely unnecessary. General contractors just need to carefully account for these risks and actively look for early warning signs of default, especially if the second-tier specialized entities are unknown.



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Subcontractor Pre-Qualification

In addition to the standard pre-qualification procedures for all subcontractors, additional actions are prudent when evaluating curtain wall subcontractors:

- Use “best value,” not price, to award work.
- Determine whether the subcontractor has recently expanded operations locally or elsewhere.
- Determine whether the subcontractor has purchased another struggling company or has been acquired by another company.
- Determine if the parent company has the necessary capacity and willingness to support a local qualified team who would manage the project.
- Evaluate staff, capacity, proximity, responsiveness, engineering and BIM capabilities, references and experience.
- Perform a complete examination of contract requirements, and visit both the factory and a completed project to address one-of-a-kind systems.
- Identify significant secondary or tertiary vendors or suppliers prior to starting the project, and evaluate their performance capabilities; update the evaluation as the project progresses.
- Determine the percentage of the subcontract to be manufactured or performed with the primary curtain wall subcontractor’s own forces.
- Obtain lien waivers for all second-tier entities.
- Include language in the contract to provide relief to the general contractor for tariffs, duties or other trade disputes impacting foreign-sourced materials.
- Determine where and how all materials will be sourced and fabricated.
- Account for increased property risk, such as damage to installed work or stored materials due to weather damage, theft, vandalism or other, arising from incomplete curtain wall installation.

If foreign entities are involved, additional precautions can include:

- Ensure the owner accepts foreign products as qualification to GMP.
- Make a formal substitution request to owner and architect replacing original specifications with replacement product if necessary.
- Obtain corporate guarantee from subcontractor’s parent company, irrevocable LOC, increase retention and/or delay early retention release.
- Include strict performance criteria and dates for submittals, mock-ups and delivery with Liquidated Damages.
- Perform on-site quality reviews of fabrication facility by owner and their consultant; a general contractor representative must attend and monitor progress and testing.
- Require the owner to hire a quality assurance monitor at the fabrication plant and provide regular reports.
- Require shipping and logistics plans from subcontractor, with weekly updates on status from customs broker, shipping and transit companies.
- Craft a contract allowance sufficient to monitor quality and production.

Taking such precautions when selecting subcontractors and their suppliers for curtain wall projects can help to insulate your business from the many possible supply chain disruptions and resulting financial and reputational implications stemming from this complex process.

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1 Usha Hale, "Through China's Looking Glass: Subsidies to China's Glass Industry from 2004-08", Economic Policy Institute, EPI Briefing Paper #242, October 8, 2009.

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