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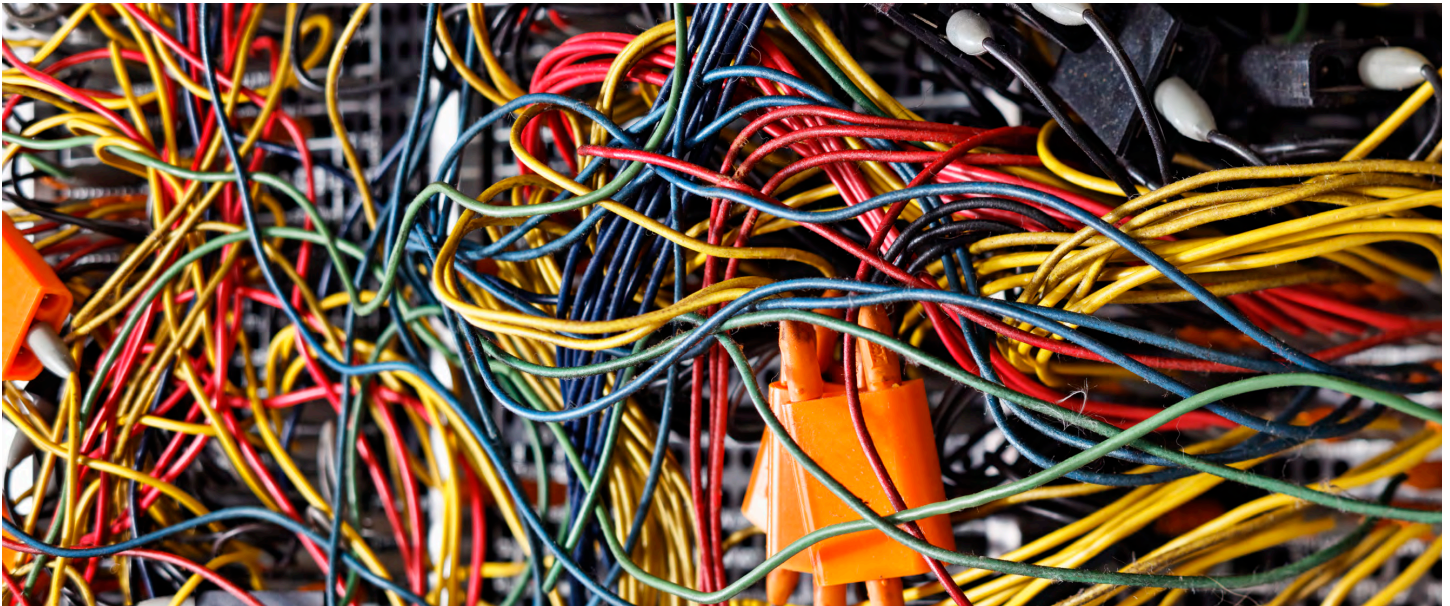
# The continued evolution of construction defect

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STRATEGIES FOR CONTRACTORS TO STAY ON TOP OF EVOLVING ISSUES  
HELPING COMPANIES MANAGE RISK

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# Construction defect claims: An old problem with new twists



Building projects large and small depend on a team of skilled professionals and laborers. Our years of experience serving the construction industry show that construction defect claims can happen on any project and impact contractors of all types and sizes. And, in today's evolving construction and litigation environment, in all likelihood, construction defect claims will only continue to grow in frequency.

The costs and challenges associated with construction defect claims are significant, making it essential for contractors to proactively manage the potential for financial and reputational risk associated with these types of claims.

In this white paper, Travelers covers a number of areas to be aware of, including:

- The impact of new technologies on construction risk
- New twists on familiar construction defect issues
- The importance of being proactive to avoid potential construction defects
- How leveraging the resources provided by insurers can make a difference

At Travelers, we know that the best defense against construction defect claims begins long before an issue arises – and we stand ready to help you with effective prevention and mitigation strategies that you can implement to better manage construction defect exposures.

*Rick Keegan*  
*President, Travelers Construction*

# Construction defect: A moving target

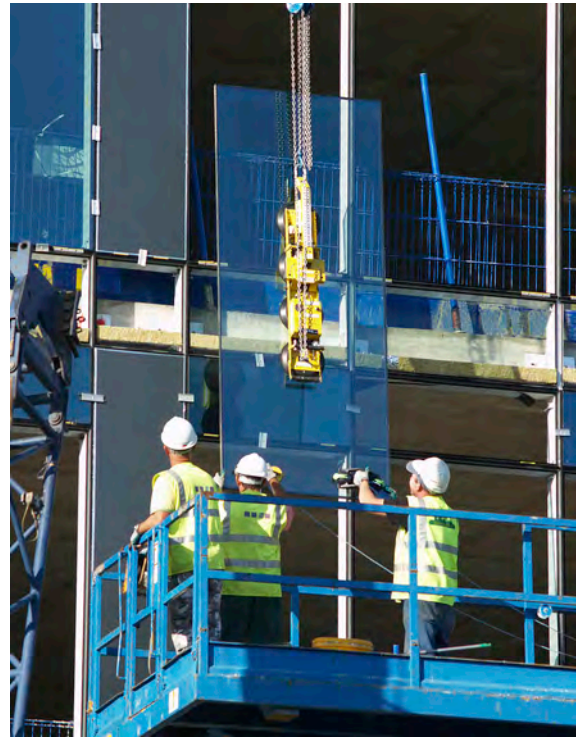
Your phone rings and it's a call you were really not anticipating. The caller is the owner of a 55-story building for which you were the general contractor approximately three years ago. He's calling to let you know that the sprinkler system failed and there are issues with water intrusion. You have officially been put on notice and your company is being sued for damages and repairs.

In general, construction defects can result from deficiencies in how something is designed, built, operated or maintained. While some defects result in damages that are immediately known such as a burst water pipe, other defects such as a slowly shifting foundation from soil movement take time to appear. These deficiencies can result in the structure failing to perform in a manner the owner might reasonably expect. Since people define reasonableness at different levels, construction defect claims sometimes push the envelope in terms of what is the contractor's responsibility and what is normal variance.

While the cause of a deficiency can be difficult to determine, the general appearance of a deficiency may point to the probable reason for the failure. However, rigorous investigation and testing can sometimes lead to unexpected conclusions about the actual reason a construction defect has occurred. (See the case study on the following page.)

Another concern for contractors stems from where the work is performed. Contractors primarily working on local projects are likely to be familiar with the laws and requirements in place to deal with construction defects in their area. However, for contractors who build projects regionally or nationally, the legal environment may be less familiar. Each state has its own requirements and building codes. In addition, some states provide contractors with the opportunity to repair a defect and potentially alter the as-built conditions before a contractor can be sued.

Faced with such a varied patchwork of requirements and evolving standards about what constitutes a defect, contractors need to pay attention to industry standards and work closely with their insurance and legal advisors to help reduce their risk of construction defect liability.



## Four types of construction defects

Over time, the legal process to address construction defect claims has settled on four general categories of deficiencies – design, material, construction, and the way the building or structure is operated and maintained.

### 1. Design deficiencies

Architects and engineers may design buildings and systems that do not work as intended or as expected by an owner. A roof design that allows water intrusion, for example, could be attributed to a design deficiency.

### 2. Material deficiencies

Building materials may be defective or damaged, leading to failure despite proper design and construction. For example, window frames that are installed despite being bent during transit may not allow for proper installation, leading to water intrusion. Or, inferior or imported products may not function or last as long as intended.

### 3. Construction deficiencies

Poor quality workmanship can result in a range of damages, including plumbing leaks that potentially promote mold growth or damage finishes, electrical or mechanical problems, and cracks in foundations or walls.

### 4. Operation and maintenance

Once construction is complete and a project is turned over to its owner, it is imperative that the construction be maintained effectively. Exterior sealants may only last five years depending on the outside environment, and without proper maintenance, failed sealants can potentially cause water intrusion issues. Interior environments can be changed when an owner is not operating the HVAC system as designed, potentially leading to frozen pipes or uncomfortable spaces.



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## CASE STUDY

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# Understanding what happened and why it happened can make all the difference

In one construction defect loss, a contractor who installed a sprinkler system was accused of a construction defect when the fire protection system leaked. Allegedly, it caused the foundation of the structure to settle, which led to damage throughout the building.

However, investigators at the Travelers Forensic Engineering Laboratory were able to determine that the actual issue was due to the soil being compacted incorrectly at the beginning of the construction project. This caused the building to settle, which in turn impacted the sprinkler system, resulting in a leak.

By understanding *what* happened and *why* it happened, Travelers was able to save the customer both the repair expense and the cost of litigation.

## New technologies, new issues

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The changes occurring in construction today are different from what many contractors experienced in the past. New building materials and techniques are constantly being introduced to address sustainability of resources, energy and water efficiency in building operations, and ease of maintenance. These innovations satisfy consumer demand for eco-sensitive construction practices – but they can also expose contractors to liability for unintended consequences.

When new approaches to construction emerge faster than codes can be updated, or when new products are introduced to the field without the benefit of a testing period, an unknowing contractor can be unprepared for the challenge of doing the right thing. Here are three examples of new standards a contractor may have failed to note:

- **Sprinkler systems** – The National Fire Protection Association (NFPA) recently updated safety recommendations involving the failure of residential sprinkler systems, including recommendations pertaining to the proper mixture of water and antifreeze. Since the mixture and type of antifreeze used can be critical to how the system performs, not adhering to building codes and/or manufacturer guidelines can subject installers to allegations of construction defect.
- **Southern pine lumber** – The structural design values for southern pine lumber have been modified. The new values reflect that “new growth” timber – more prevalent today in construction than “old growth” wood – has less inherent strength. The American Wood Council, the organization that updated the standards, said it was making the change to avoid liability issues arising from the previously established values that could potentially lead to the failure of wood framing.
- **Solar panel systems** – Design wind loads for solar panel systems installed on commercial roofs are not directly addressed in the 2006 International Building Code, which many municipalities currently use. The code directs the designer to standards that currently provide little guidance for determining appropriate wind loads for roof securement.

Contractors can no longer rely solely on their years of experience and hard-won knowledge about what works in the field. In today’s environment of innovation, contractors must be aware of continuously evolving techniques and standards, as well as new materials.

# Some things never change

Although new materials and techniques can be challenging, many of the most common construction defects have been around for decades. A review of Travelers construction defect claims found that the following factors were the underlying cause of the resulting property damage:

- Water intrusion through building envelope (leaks in roofs, around windows, and through exterior siding, balconies, patios and garages)
- Improper soil condition (inadequate preparation of the soil to prevent movement)
- Defective manufacturing, premature corrosion or deterioration of pipes, plumbing and other building materials
- Improper or inadequate design of structures and their component integration or compatibility

Although these factors are common, each individual case can be quite different – and the details can point to the underlying cause. For example, a contractor hired to build a retaining wall installed geotextile reinforcement in the reinforced soil zone.

Five years later when the wall began to move, the contractor was blamed for inadequate work. However, upon investigation, it was determined that after the wall construction was complete, a different contractor installed water and sewer lines behind the wall, disturbing the reinforced soil and cutting the geotextile. The wall contractor was not at fault.

Another example involved water intrusion in a brick building due to the lack of slope in the building's concrete balconies. An investigation showed that the design plans did not address proper flashing or sloping, and the appropriate specifications for a masonry building were not included. The balconies were built according to the design, but the contractor should have pushed back and asked to clarify details before proceeding.

When a construction defect allegation is made – even a common one that may seem routine – it is important for a contractor to alert their insurance agent and carrier as soon as possible. By bringing in the right expertise early in the process, a contractor can tap into resources to help build the best defense.



## CASE STUDY

### Right expertise is critical for determining the right remedy

When the owners of a hotel found mold behind the wall coverings in the guest rooms, they planned to demolish the walls and rebuild the rooms. The owner's investigation alleged water intrusion from and around exterior windows and air-conditioning units. The owners relied on window professionals in their investigation, and as such, overlooked other possible causes of mold. A broader investigation was overseen by the Travelers Forensic Engineering Laboratory that revealed other, more relevant issues – the HVAC system was not designed or maintained properly.

Based on these findings, it was not necessary to demolish all of the walls between the rooms. In fact, the condition would have occurred again after the walls were rebuilt had the contractors not addressed the pressurization issue.

This example demonstrates how you can help avoid costly repairs and unwarranted claims by selecting an insurance carrier with the right expertise to understand what happened and why.

# A growing problem

Most contractors recognize many of the construction defect issues outlined in this paper. Given that these types of claims have been part of the industry for so long, some may even feel that construction defects are unavoidable. However, many experts see the problem growing as experienced employees become harder to find.

At Travelers, we are already seeing growth in claims in states such as California and Texas, where construction is on the upswing. The increase in construction projects creates a larger pool of potential construction defects. It also puts pressure on contractors to find adequate numbers of employees with the proper skills and capabilities. As construction work increases, it becomes more difficult to find experienced employees.

In fact, a national survey by the Associated General Contractors of America (AGCA) recently found that 74 percent of firms are having trouble finding qualified trade workers, including carpenters, equipment operators and laborers. In addition, 53 percent report that professional positions – project supervisors, estimators and engineers – are difficult to fill.

As the pace of construction picks up again in the post-recession recovery and less-experienced workers are used to support increased demand, construction defect claims could potentially grow to higher levels. Contractors need effective strategies to help avoid the disruptions and costs associated with construction defect liability.



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# Managing construction defect risks

From a contractor perspective, you can do everything right and still end up the target of a construction defect allegation. The steps you take both before and after receiving a notice of an allegation can make a significant difference in the outcome.

## First, be proactive about avoiding construction defects.

This includes:

- **Keeping up with current codes and standards** – Be aware of not just building codes, but also industry advisories and best practices.
- **Understanding the products you use** – Follow manufacturer guidelines to ensure proper product performance; study product warranties and know the limitations of innovative materials and systems, as well as compatibility issues.
- **Being rigorous about your selection of subcontractors** – Pre-qualify those you hire so you can be sure they have the proper credentials, experience and skills to deliver the kind of work you can stand behind.
- **Taking advantage of risk transfer opportunities** – Rely on legal counsel to ensure your contracts protect you against errors by others and limit your obligations to those operations that are controlled by you.
- **Documenting every step in the construction process** – Build a solid record that can be used in court to help defend against claims of shoddy practices; make sure project documentation is available when construction defect allegations arise, sometimes many years after a project is completed.
- **Having a robust Quality Assurance/Quality Control (QA/QC) program** – Develop a systematic approach to ensure that a project is built correctly and performs as designed. The complexity of the program is related to the complexity of the job and it is important to have a plan for each unique project.

## Second, select an insurance carrier who has the expertise to give you effective tools before a claim is made and who can provide strong representation on your behalf after a claim is filed.

At Travelers, we provide a number of resources to help you avoid or mitigate construction defect liability, including technical bulletins, checklists and forms, and webinars and training opportunities.

Additionally, Travelers has a team of construction professionals that are experienced when it comes to handling construction defect claims. These construction specialists will see your claim through from start to finish. We also have a specialized construction engineering forensic unit that can do extensive research to determine the actual cause of a defect, and our construction defect attorneys have a thorough understanding of legal strategies and nuances as they pertain to the industry.

Our insurance industry team approach – using construction professionals and claim, risk control and legal – has helped mitigate costs for our customers. For example, our comprehensive and strategic claim handling has resulted in documented savings for our customers through lower attorney fees, lower expert costs and reduced payouts on claims. In addition, because of our national reach, Travelers has broad experience with construction defect claims and is able to quickly analyze data to identify trends and evolving issues.



## In conclusion ...

As a contractor, you want to focus on completing your projects on time and within budget – not on the potential litigation that may surface when something goes wrong with the project. However, rapidly changing industry practices and often-litigious buyers give contractors little choice but to approach construction projects with effective, proactive strategies to manage risk. By staying on top of evolving standards and engaging the right insurer, you can help avoid construction defect pitfalls and better position your business for success.

# About the authors

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## **Rick Keegan, President Travelers Construction**

Rick leads the Construction Business Unit at Travelers, which provides high-quality insurance products and services to contractors across all major segments of the construction industry. Rick has 25+ years of diverse experience working in the construction insurance industry and has served in a number of leadership positions at Travelers. Prior to joining Travelers in 1995, Rick worked in risk management for a large global contractor based in New York.

## **Bob Kreuzer, 2nd Vice President, Risk Control Travelers Construction**

Bob is responsible for nationwide construction risk control services delivered by a team of more than 100 construction risk control consultants. Bob has 15 years of experience working in the construction insurance industry and has served in a number of leadership positions at Travelers. Prior to joining Travelers in 2000, Bob spent seven years working within the construction industry, overseeing various corporate and project-specific risk management programs.

## **Mike Koppang, Director, Risk Control Travelers Construction**

Mike leads a group of 10 construction engineers, architects and forensic specialists located throughout the country. Mike and his team assist construction claim professionals and defense attorneys, and use on-site investigations, product failure analyses and design validation to understand complex aspects of construction defect claims. Prior to joining Travelers, Mike spent eight years working for a high-profile construction management firm, coordinating construction activities of high-rise buildings, laboratories, hospitals and schools. He also worked in the design service center for a national engineering consulting firm.



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