Mitigating Risk of Product Failures,

How the Construction Industry is Navigating Climate Change

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As climate change intensifies, contractors and builders are facing a growing risk of responsibility for construction products and materials that fail to withstand extreme temperatures and weather events. This is because climate change is leading to more frequent and severe heat waves, droughts, and other extreme weather conditions that can damage or degrade construction materials, potentially leading to project delays, cost overruns, and safety hazards.

Contractors face liability risks after a project's completion—increased temperatures and weather conditions from climate change create uncertainty about their long-term performance. Contractors also take on the risk for means and methods—and if those are being driven by the specifications of a building or a material, that gets complicated. Construction is generally a low-margin, high-risk business. It's hard to allocate the resources and become experts about a new building material or method.

Builders now must consider the financial consequences of creating structures that have materials or components that may fail to perform under excessive temperatures and climate conditions. This is changing the risk profile for contractors. By doing that, it's driving different contractual or risk transfer behavior. Contractors need to understand what risk they are taking and whether and to what extent they can mitigate, transfer or insure the risk."

Businesses and organizations have a duty of care. When they sell a product or provide a service, it is expected that it will perform as intended and not cause harm or damage. The industry is entering a period of affirming causal linkage between climate change and product liability.

Construction projects involve a great deal of products in the form of materials, equipment and other components cropped into the finish. Those products may be part of a lien claim, at issue in a breach of contract or warranty claim, or an element of damages. Those products may also throw construction companies into the unfamiliar world of product liability, tort law and related specialized statutes involving the complexity and challenges of tort-based products liability claims, breach of contract, breach of express warranty, negligence and product liability claims. Contractors may also face the risk of having to contend with manufacturers who dissolved or sought bankruptcy protection.

Some jurisdictions hold manufacturers strictly liable for defects in their products, regardless of fault, if the product causes harm. Product liability claims can extend to the entire chain of distribution, including manufacturers, distributors, retailers, and even contractors. Climate change is increasingly leading to litigation, including lawsuits against companies that fail to consider climate risks in their products or services. In summary, both product manufacturers and contractors can be held liable for failures in building products caused by climate change. Manufacturers can

be held liable for defects in their products or for failing to consider climate risks in their design, while contractors can be held liable for negligence in the design and construction process or for failing to meet their contractual obligations.

Key Points

- Extreme heatwaves are pushing materials and equipment beyond their temperature thresholds.
- The urgency of this shift cannot be overstated. The years from 2015 to 2021 were the warmest on record. In the years ahead, heatwaves are expected to worsen in most places, but especially over Africa, Central and South America, and Southeast Asia.
- Manufactured products are under increasing stress as heatwaves push materials and equipment beyond their temperature thresholds. Many products and adhesives, when exposed to extreme heat, go through chemical changes that affect the mechanical properties – causing them to become dry, brittle, buckle, break down and ultimately fail.
- In the context of climate change causing failures in building products, both the product manufacturer and the contractor can be held responsible, depending on the specific circumstances and the nature of the failure.
- Construction contracts hold contractors responsible to owners for product performance. A construction defect occurs whenever finished or partially completed construction fails to perform as required by applicable contract documents or accepted standards – which may include a defect in a product.

    - Defects may be latent defect—one that exists at the time of construction but is undetected until after (sometimes years after) construction is completed and the structure and its systems are in use. An example would be a structural beam that meets the specified size, color and grade requirements, but is understrength. Latent defects also can be progressive; that is, over time the defect gradually becomes worse as the structure, or its systems are subject to wear and tear or natural forces. Examples include concrete that progressively deteriorates over several freeze-thaw periods, pavement that gives way due to gradual loss of supporting subgrade and leaking roofs that over time cause damage to building components and mold growth.
    - Construction defects can affect completed projects in ways ranging from poor aesthetics to catastrophic collapse with tragic human toll. When a defect, failure or collapse occurs, the contractors, designers and owner each may be exposed to liability, depending upon how each one carried out its responsibilities during the construction process.

- Statutes of repose keep contractors at risk of litigation for buildings for at least 10 years in Texas.

- Contractors may seek to hold manufacturers responsible for the inability of their products to perform in the condition and location in which the products were sold. At risk for products liability and warranty claims.
- Businesses can adopt a blended response that focuses on adaptation, resilience, and mitigation to counter this threat.

Panel discussion including (a) legal input on potential legal risks and claims and recommendations for mitigation those risks; (b) building expert input on types of product failures that impact building products in the construction industry; (c) insurance products and coverage available to mitigate the risk.

Product Liability

If the failure is due to a defect in the product itself (e.g., materials not designed to withstand extreme weather), the manufacturer can be held liable for product liability. Manufacturers can be held liable for defects in products or for failing to account for climate impacts in their design. This growing risk is compounded by the potential for product liability claims across the entire supply chain, from manufacturer to contractor.

Extreme heat or cold can precipitate product failures (sealants cracking, pipes bursting, etc.), but from a liability perspective, the question is whether the product was defective or misused. Manufacturers defend these cases by arguing that the product was used outside its intended temperature range. If the temperatures were reasonably foreseeable for the location and use, plaintiffs will argue the product was defectively designed for not accommodating those conditions or at least not warning about them. As climate extremes become more common, juries may be sympathetic that a product should withstand what are no longer uncommon conditions.

Negligence

If the manufacturer knew or should have known about the potential risks of climate change impacts on their product and failed to take reasonable steps to mitigate them, they may be held liable for negligence. Contractors may also face negligence claims if they fail to consider climate risks during construction. For instance, owners or third-parties may sue contractors for negligence when a product fails. These cases often allege the contractor was negligent in selection, installation, or inspection of the product. For instance, using an inappropriate material for the climate, or installing a product contrary to instructions, can be framed as a breach of the contractor's duty of care. Generally, contractors owe a duty of care to ensure that the building is safe for its intended use, including in the face of climate change impacts.

Manufacturers can be liable for negligence in design or failure to warn, separate from strict liability. In a construction context, an owner or contractor might sue a manufacturer for negligent design, testing, or manufacturing of a product that causes damage. Negligence requires proving the manufacturer fell below the standard of reasonable care in designing or making the product. Many product liability cases plead both strict liability and negligence in the alternative. An example of manufacturer negligence claim surviving is where a defective product causes a safety hazard, such as a space heater that catches fire due to negligent design could support a negligence claim by a building owner for fire damage.

Design Defects

If the product's design is flawed and contributes to failures in extreme weather conditions, the manufacturer may be held liable for design defects. Typically, a design defect claim asserts the product's design is unsafe (*e.g.,* a roofing material that cannot withstand foreseeably high temperatures, resulting in product failures). An issue in construction product litigation is whether a contractor (or subcontractor) can be held strictly liable as a seller of the product. Most states, following Comment e to Restatement (Third) of Torts: Prod. Liab. §19, do not treat contractors who merely incorporate a product into real property as sellers of a product.

For example, the Texas Supreme Court, in *Centerpoint Builders GP, LLC v. Trussway, Ltd.*, 496 S.W.3d 33 (Tex. 2016), reaffirmed that a general contractor who purchases materials for a job is not automatically a "seller" under the product liability indemnity statute or strict liability law, given that the contractor's primary business is providing construction services and the product sale is part of that service. But the product must be incidental to selling services.

On the other hand, if a company's role is supplying a product, such as a vendor or subcontractor, even if installation is included, it may be deemed a seller. In *Fresh Coat, Inc. v. K-2, Inc.*, 318 S.W.3d 893 (Tex. 2010), a subcontractor that furnished and installed a synthetic stucco system was held to be a product seller for purposes of indemnity. The subcontractor purchased the components, sold the product for profit, and installed the product on homes. The court looked to the contractor's role as a seller of the product in ruling that Fresh Coat was entitled to indemnity from the manufacturer for the homeowners' claims.

If sued for a product defect, contractors should determine if they can be characterized as a seller to shift liability upstream via indemnity. But be aware that courts may reject seller status if a contractor's primary business is providing construction services. Contractors who do supply distinct products should be prepared to be treated as product suppliers.

Contractual Obligations

Contractors have a responsibility to ensure the building complies with relevant building codes and standards, including those related to climate resilience. Contractors and clients need to carefully review and revise contractual agreements to address the risks associated with climate change. This includes specifying responsibilities for material selection, performance standards, and liability for climate-related failures. Contractors' responsibility to deliver buildings that meet specifications, and relevant codes may now extend to the long-term performance of materials used in construction. Failure to account for the impacts of climate change on material durability can result in breach of contract claims, latent defects, or design flaws, exposing contractors to significant liability, including lawsuits from owners, manufacturers, and third-party stakeholders.

For example, in *Bartush v. Cimco*, 2017 WL 1534053 (Tex. 2017), Bartush, the owner of a food manufacturing plant, hired Cimco as contractor to install a new refrigeration system. The refrigeration system failed to maintain require temperatures, and the owner refused to pay the contract balance. The contractor sued for the contract balance. Surprisingly, the Texas Supreme Court held the contractor liable for breach. The court reasoned that the contractor breached first by failing to deliver a working product and repairing the same.

In *HTRF Ventures LLC v. Permasteelisa N. Am. Corp.*, 190 A.D.3d 615 (N.Y. App. Div. 2021), a contractor installed a curtain wall with silicone sealant that was specified to have a 10-year seal warranty. The contractor provided the owner with the manufacturer's 10-year warranty, believing that satisfied its contractual requirements. The New York appellate court instead held that merely assigning the manufacturer's warranty was not enough. The contractor itself was obligated to ensure a 10-year seal performance, effectively making the contractor a guarantor of the product.

Material Failures

Contractors and builders are increasingly likely to face liability for material failures caused by extreme heat or other climate-related impacts. This includes situations where materials degrade, become brittle, or fail to perform as expected in high temperatures. When a contractor purchases a product from a supplier or manufacturer, the Uniform Commercial Code (UCC) implies a warranty of merchantability (that the product is fit for ordinary purposes) and, if the seller knows the buyer's particular purpose and reliance, an implied warranty of fitness for that purpose.

If a construction product fails under normal conditions, an implied warranty of merchantability claim may lie against the supplier/manufacturer. For instance, if a type of pipe is sold as suitable for outdoor use but becomes brittle in the cold, that could breach the implied merchantability warranty. Implied warranties can be disclaimed in many commercial sales, so contractors and their attorneys should express disclaim them where possible. In practice, these UCC warranty claims often accompany breach of contract claims in product failure cases.

Project Delays, Cost Overruns, and Safety Concerns

Extreme weather events can disrupt construction schedules, leading to delays and increased project costs. Contractors may be held responsible for meeting project deadlines, even if delays are caused by climate-related factors. Exposure to extreme heat can also pose health risks for construction workers, potentially leading to heat stroke, dehydration, and other health issues. Contractors have a legal and ethical obligation to ensure the safety of their workers, and they may face liability for injuries or illnesses related to extreme heat.

Despite increasingly volatile weather, courts still expect contractors to prove the delay was excusable. For example, in *Marine Industrial Constr., LLC v. United States*, 2022 WL 497186 (Fed. Cl. Feb. 17, 2022), a contractor performing dredging work for the Corps of Engineers asserted excusable delay based on storms, high flows, and debris conditions it characterized as severe weather and differing site conditions. The government terminated for default, and the contractor argued weather-driven conditions made timely completion impossible. The court held that unusually severe weather is an excusable delay and that the contractor bears the burden to prove: (1) unusual severity compared to historical weather data for the local; and, (2) impact on performance. Here, the contractor was unable to offer comparative long-term weather data and failed to tie the weather data to specific activities that prevented it from continuing the project.

In terms of safety, the legal bar for a general duty related to extreme heat or cold is quite high. For example, in *Secretary of Labor v. A.H. Sturgill Roofing, Inc.*, OSHRC Docket No. 13-0224, 27 OSHC 1737 (2019), a 60-year-old worker with pre-existing conditions collapsed and later died while working on a commercial roof in summer temperatures in Ohio. OSHA cited the employer under the general duty clause for exposing employees to the hazard of "excessive heat from working on a commercial roof in the direct sun." However, the OSHRC found that OSHA had not proven a cognizable heat hazard under the general duty clause, stating that the record did not show a sufficiently significant risk of harm. Still, contractors need to be aware that excessive heat is a recognized workplace hazard and protect their workers accordingly. Notably, California has had a specific heat illness prevention statute since 2006 that includes additional high-heat procedures once temperatures reach 95 degrees Fahrenheit.

Warranty Claims

As materials fail to perform as expected due to climate-related factors, there may be increased warranty claims against contractors and builders. This can lead to financial losses and reputational damage. Many construction product disputes involve express warranties, either from the manufacturer or made by the contractor to the owner. If a product fails to perform as warranted,

the warrantor is liable for breach. Manufacturers' express warranties can be enforced by the end-user or contractor depending on privity and any assignment of the warranty.

Implied warranties of course fill gaps where no express warranty applies. States generally vary on whether implied warranties are implicitly warranted. In Texas and many other states, for example, a contractor in a construction contract implicitly warrants that the work will be performed in a good and workmanlike manner and that materials will be of good quality, unless properly disclaimed. Some states allow contractual disclaimers of the implied warranty of workmanship if the contract provides for the manner, performance, or quality of the services, but refuse to allow contractors to waive the implied warranty of habitability.

For example, in *Zambrano v. M&RC II LLC*, 517 P.3d 1168 (2022), the Arizona Supreme Court held that builders cannot waive the implied warranty of habitability in a purchase agreement with a homebuyer. The Court reasoned that the builder could not escape liability by including a waiver of the warranty because the public policy of protecting homebuyers from defective homes outweighed the builder's interest in being able to limit its liability.

Risk Assessment, Mitigation, Adoption Strategies

Thorough risk assessments are crucial to identify potential climate-related risks and implement mitigation strategies to minimize their impact. This includes considering the potential for extreme heat, drought, flooding, and other climate-related events. Contractors need to carefully consider the suitability of materials for use in specific climates and weather conditions. They should select materials that are durable, resistant to extreme temperatures, and able to withstand expected weather events.

Contractors should also adopt sustainable construction methods and incorporate climate-conscious design principles. The construction industry must take a proactive stance to mitigate climate-related risks through comprehensive risk assessments, better material selection, and the adoption of climate-resilient building techniques. Contractors need to carefully evaluate their contractual obligations, ensure compliance with building codes, and explore risk transfer mechanisms like insurance coverage tailored to climate risks.

Texas provides a statutory indemnity for "innocent sellers" in product liability actions. This is a powerful tool for contractors or material suppliers brought into a lawsuit over a product defect. If the contractor qualifies as a seller under the broad definition (engaged in distributing the product commercially), the manufacturer must indemnify them for defense costs and any losses, unless the seller contractor misused or modified the product or was independently negligent

Insurance Coverage

Contractors should ensure they have adequate insurance coverage to protect against losses arising from climate-related events, including property damage, business interruption, and liability claims. This session will feature a panel discussion on the legal ramifications of climate-induced construction product failures, including recommendations for mitigating legal exposure through updated contracts, warranties, and insurance coverage. Insurance providers will discuss the growing importance of climate-related coverage for contractors, emphasizing the need for policies that address the risks associated with extreme weather events.

Often, insurers will lean on your product/your work and related exclusions. Some property and general liability policies even exclude damage caused by extreme changes in temperature. For example, in *Old Town Canoe Co. v. Continental Casualty Co.*, 2005 WL 2674902 (D. Me. 2005), the policy excluded damage caused by "dampness or dryness of atmosphere, extremes of temperature [and] changes of temperature." The court held that the extreme temperature and changes of temperature language was ambiguous and ruled against the insurer. Contractors should challenge attempts to use temperature exclusions to avoid paying for heat or cold related failures.

Contractors and their attorneys should also draft project specifications that make clear products are intended to operate under the manufacturer specified temperatures. In the event of a product failure due to extreme temperatures, the loss should be framed as either damage to other property or loss of use of the broader facility/project.

Climate Change Mitigation & Conclusion

The construction industry will need to take a more proactive role in mitigating climate change through the adoption of sustainable construction practices and the use of low-carbon building materials. In conclusion, contractors and builders are facing a growing risk of responsibility for construction products and materials that fail to withstand extreme temperatures and other climate-related impacts. This is leading to increased liability, cost overruns, project delays, and safety concerns. To address these challenges, contractors need to adopt a proactive approach that includes careful material selection, risk assessment, adaptation strategies, and collaboration with clients, insurance providers, and other stakeholders.