Standard of Care – *What Is Your Risk?*

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ABSTRACT

Picture yourself as the designer of record for a roof removal and replacement project. Your client (the owner) occupies the building, and a written agreement outlines your limited scope of work. The owner-contractor agreement uses IIBEC's standard contract.

Responding to the owner's needs, you design a single-ply TPO roof system. The project conditions prevent you from using mechanical fasteners, and ballast is prohibited by code, so you specify adhered attachment. The contractor selects a suite of solvent-based adhesives from a widely known, commonly used manufacturer.

You provide part-time quality assurance inspections of the contractor's work. Toward the end of the project, several of the owner's employees complain of headaches and respiratory problems, alleging the cause to be adhesives you specified.

Six employees file multimillion-dollar lawsuits against you and the contractor, alleging you violated the standard of care required to protect public welfare, and exposed them to toxic fumes. You endure an 18-month court battle, ultimately settling right before trial.

This scenario actually occurred to the designer and the standard-of-care expert—both members of IIBEC who are also Registered Roof Consultants and professional engineers. In this paper, they and their defense will share their experiences and offer suggestions to help minimize the chance of this happening to you.

INTRODUCTION

On Friday, May 14, 2010, at 3:30 PM, Steve Hentz was finalizing paperwork for the week and getting ready to enjoy the weekend when he received a call from his corporate attorney. The attorney informed Steve that he had received, on behalf of Hentz Engineering, Inc. (then Steve's firm) five personal injury lawsuits regarding a roof replacement project Hentz Engineering had designed approximately two years prior. The attorney informed Steve that Hentz Engineering was named as one of several defendants in the cases, which were seeking compensatory damages of $21,000,000, plus unspecified punitive damages and costs. He had placed a copy of the lawsuits in the mail for Steve to review. After a sleepless night, Steve returned to his office to find 87 shocking pages of documents that had been filed with the court, which Steve read from cover to cover. The items that stood out the most to him were allegations he had "breached his duty" to the plaintiffs of the lawsuits—five people Steve had never met. The lawsuits claimed Steve and Hentz Engineering had breached their duties to the plaintiffs by:

- Failing to ensure "toxic" roofing products were used in a safe manner
- Failing to warn the plaintiffs about the dangerous and adverse effects of exposure to toxic chemicals
- Failing to develop a plan to protect the plaintiffs and their fellow employees
- Failing to provide air monitoring in the building where the plaintiffs worked

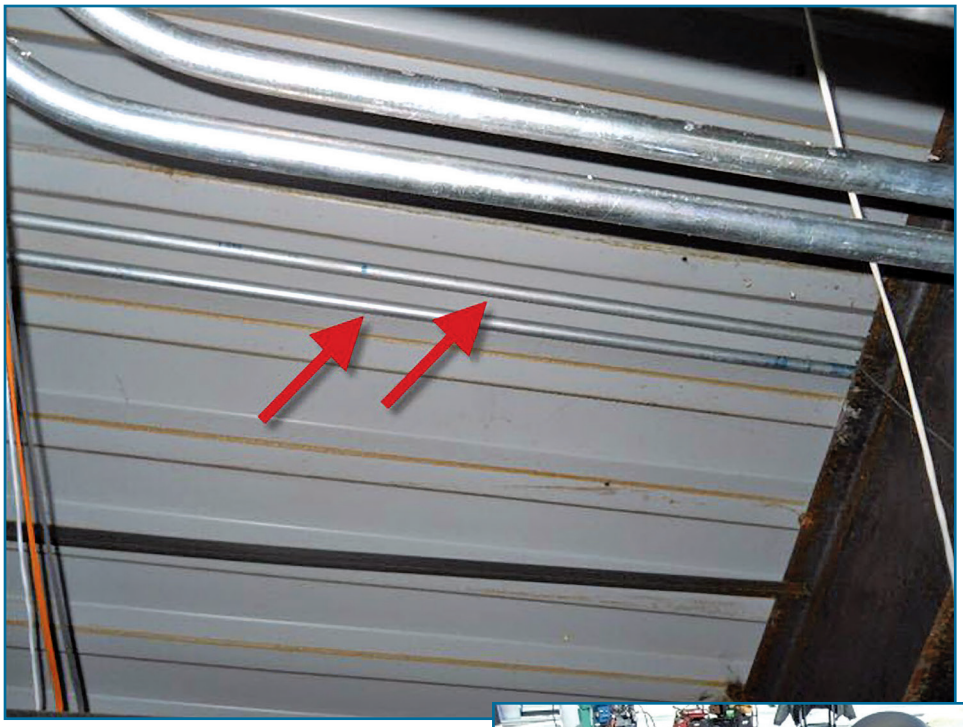


Figure 1 – Arrows show fiber-optic cable and electrical conduit in flutes just below roof deck.

Figure 2 – Old roof system on left; new roof system on right.

- Failing to provide for ongoing health screening of the plaintiffs
- Failing to properly prepare an employee evacuation plan for the building where the plaintiffs worked
- Failing to properly test the HVAC equipment in the building where the plaintiffs worked
- Failing to design alternative ventilation for the building where the plaintiffs worked

The plaintiffs claimed they suffered from symptoms and losses including:

- Sore throat
- Tingling and numbness of the hands
- Shooting pain and weakness in the legs
- Toxic encephalopathy (brain disease)
- Peripheral and bilateral neuropathy
- Exacerbation of pre-existing asthma
- Chronic respiratory illness such as hoarseness
- Risk and fear of contracting cancer
- Mental anguish
- Reduced capacity to earn wages
- Pain and suffering

Steve wondered how all of these symptoms had resulted from a roof replacement project. What he had not yet learned was that the attorney who represented the five plaintiffs also represented a sixth person, and filed suit against Hentz Engineering on her behalf the following July. The sixth lawsuit, related to the same project, demanded $5,350,000, included similar allegations against Hentz Engineering as the other five lawsuits had, and claimed additional physical symptoms such as rash, weight loss, nausea, dizziness, irregular heartbeat, onset of Graves disease, anemia, and infertility. Steve could not understand how six people had become so ill during this project, especially without him knowing about it.

PROJECT BACKGROUND

In 2006, Hentz Engineering was retained by a building owner to design and perform quality assurance observations for the replacement of the membrane roof on a three-story office building and call center occupied by the owner's employees, located in Virginia Beach, VA. Hentz Engineering had worked for this owner before, including on other portions of the same building.

Hentz Engineering's work on the project was divided into the following four phases:

1. Prepare plans and specifications for the roof replacement.
2. Assist the owner with the procurement of bids.
3. Provide the following construction administration services:

a. Review and approve shop drawings.
b. Attend a preconstruction meeting.
c. Perform a final inspection of the roof system upon completion.

4. Provide part-time (semiweekly) quality assurance monitoring during construction, and prepare field reports to include:
   a. Contractor crew size
   b. Weather conditions
   c. Storage conditions of roofing materials
   d. Identification of building areas where work observed was being performed
   e. Installed quantities of roof components
   f. Noncompliant work

It is important to note that Hentz was not on site full-time during construction; it was required only to make sporadic, semiweekly site visits to observe whether the contractor was installing the roof in accordance with the design.

The building's existing roof was actually two membrane roofs with a total area of approximately 68,000 sq. ft. Because the Virginia Uniform Building Code prohibits layering more than two roof systems on a building, Hentz Engineering's design for the new roof required removal of the existing membranes. Hentz Engineering was limited in its options for selecting a new roof—the roof configuration required a membrane roof, and the owner wanted the roof to be white and to meet the available budget, so a single-ply membrane was the only viable option. Hentz Engineering was even more limited in its options for roof attachment; ballast attachment did not meet building code requirements due to the fact that the building is located in a hurricane-prone region, and mechanical attachment was impossible because of fiber-optic cable and electrical conduit running in the flutes above the bar joists just below the roof deck, which would be punctured by screws or other mechanical fasteners. See *Figure 1*. Therefore, Hentz Engineering's specification of a fully adhered single-ply roof system was inevitable. In its specifications, Hentz Engineering named three acceptable fully adhered roof system manufacturers.

In addition to being limited in its choice of membrane type and attachment, Hentz Engineering also had no role in determining whether the building would be occupied during the work, as the owner was not willing to relocate its workers during the project.

The owner awarded the project to the lowest bidder,[1] who selected one of the three specified roof systems and began work in late 2006. Other than minor issues with overnight water leaks, as far as Hentz Engineering was aware, work on the roof progressed without any issue. See *Figure 2*. Membrane installation was completed by mid-August 2007, and after that point, the contractor was working only on sheet metal and membrane flashing details. See *Figures 3* and *4*.

Figure 3 – Roofer performing perimeter flashing detail work.

Figure 4 – Roofer performing flashing detail work around skylight.

Plaintiff's Attorney Publicly Reprimanded

Following the settlement of the case, a complaint was filed with the Virginia State Bar against the plaintiff's attorney regarding his behavior during this case. The improper behavior included withholding providing notice of a filed lawsuit against the consultant and roofer until after depositions of the officers and key personnel were obtained for the worker's compensation case, asking questions in the depositions in preparation for the yet undisclosed case, and falsely stating during depositions that the roofer and consultant were not a party to litigation. In November 2012, the plaintiff's attorney was cited with violations of the Rules of Professional Conduct. The nature of his alleged misconduct was as follows:

Rule 4.1: Truthfulness In Statements to Others

In the course of representing a client, a lawyer shall not knowingly:

(a) Make a false statement of fact or law.

Rule 4.3: Dealing With Unrepresented Persons

(a) In dealing on behalf of a client with a person who is not represented by counsel, a lawyer shall not state or imply that the lawyer is disinterested. When the lawyer knows or reasonably should know that the unrepresented person misunderstands the lawyer's role in the matter, the lawyer shall make reasonable efforts to correct the misunderstanding.

(b) A lawyer shall not give advice to a person who is not represented by a lawyer, other than the advice to secure counsel, if the interests of such person are or have reasonable possibility of being in conflict with the interests of the client.

After being found guilty of the above violations by a panel of three judges, the attorney received a Public Reprimand for his misconduct.

At 1:59 PM on August 31, 2007, Hentz Engineering was notified for the first time of a complaint by an employee working on the third floor of the building below the roof deck. The owner's representative, with whom Hentz Engineering regularly dealt, reported to Hentz Engineering's vice president, Culbert Carolino, that one of the owner's workers had complained of breathing difficulty and had been taken to the hospital (even though the contractor had stopped using adhesives by 11:00 AM that day). The work area where the affected employee had been working was a 24-hour call center housing several hundred employees.

Hentz Engineering later learned from the owner's representative that the call center employees were notorious for complaining about smells, even unrelated to the project. In the past, complaints had been so out of control that the owner posted signs throughout the call center prohibiting the use of fragrances of any kind. Worse, with so many people working in such close quarters, the psychological effect of one person's sneeze, headache, or sore throat often resulted in a wave of similar complaints throughout the call center. Unbeknownst to Hentz Engineering, call center employees allegedly had been complaining to the owner for some time prior to August 31 about dizziness, lightheadedness, respiratory distress, and fainting, which they attributed to the adhesives being used on the roof.

Within less than an hour of Hentz Engineering learning of the complaint, Carolino responded to the owner, offering assistance, including a suggestion that the owner ask the contractor to work on weekends and take other additional precautions. The owner chose to deal with the complaint itself, and Hentz Engineering heard nothing more about it.

Hentz Engineering later learned that the owner had received complaints from its employees as early as May 2007, but it never shared those complaints with Hentz Engineering. The owner had undertaken to perform air quality monitoring and testing in the building, never sharing the fact or results of those efforts with Hentz Engineering. One week prior to the August 31 complaint, the owner even received a notice of complaint from the Commonwealth of Virginia Department of Labor/Virginia Occupational Safety and Health, citing "overexposure to hazardous vapors emanating from the roof repair project." It never told Hentz Engineering about this complaint and undertook to respond to the complaint without any input from Hentz Engineering.

THE LITIGATION

Almost two years after Hentz Engineering learned of a single complaint on this project, Steve Hentz received notice of the lawsuits against his firm. The six plaintiffs—all former employees of the owner—sued Hentz Engineering, the contractor, the roof system manufacturer, and several other chemical companies affiliated with accessory products for personal injuries, seeking a combined total of $35 million, plus punitive damages. Notably absent from the list of defendants was the owner, who was immune from suit because of Virginia's workers' compensation laws.[2] Soon after filing, the plaintiffs inexplicably withdrew their claims against the roof system manufacturer and chemical companies. Hentz Engineering never learned the reason for the plaintiffs' abandonment of their claims against the roof system manufacturer and chemical companies. Hentz Engineering and the contractor were left to shoulder the

burden of the lawsuits.

In their lawsuits, the plaintiffs alleged Hentz Engineering had been negligent in failing "to exercise reasonable care to prevent injury to [them]." They claimed Hentz Engineering owed them the following duties:

- To provide and ensure that the building and the roof above their work area where "toxic" chemicals in the roofing products were being used were properly ventilated and to design alternative ventilation if necessary
- To provide and ensure that the "toxic" chemicals in the roofing products were being used in a manner that did not endanger the plaintiffs or the owner's other employees, by ensuring that proper precautions were taken against such dangers and by ensuring that there was proper monitoring of the air quality of the area where the plaintiffs were working
- To warn the plaintiffs and owner's other employees of any injuries or adverse effects of exposure to and/or inhalation of the "toxic" chemicals in the roofing products used by the contractor
- To ensure the posting of written or symbolic warning signs, and to provide oral warnings regarding the "toxic" chemicals in the roofing products, or other such preventive measures to the plaintiffs to prevent them from suffering the injuries and conditions from which they suffered
- To take precautions to prepare or ensure that there was a proper environmental and employee protection plan in place in the building, and to include at a minimum:
  - Measures to postpone or terminate work and to provide for adequate employee evacuation procedures which would have limited the plaintiffs' exposure to "toxic" chemicals in the roofing products
  - Measures to limit or prevent the use of the "toxic" chemicals in the roofing products within certain parameters until all individuals were properly removed from the building
  - Measures to ensure that none of the "toxic" chemicals in the roofing products would be used until such time as the building's HVAC system had been properly tested and that proper air circulation and sufficient ventilation were provided to protect the plaintiffs and owner's other employees from exposure to "toxic" chemicals in the roofing products

The plaintiffs characterized Hentz Engineering as the "paid consultant and monitor of the project" and claimed it "failed to properly monitor the project to prevent injury to [them]." They claimed Hentz Engineering breached its duties to them by:

- Failing to provide and ensure that the interior area and the roof where the "toxic" chemicals in the roofing products were used were properly ventilated, and/or to design alternative ventilation

Figure 5 – Damaged section of roof deck.

Figure 6 – Repaired section of damaged roof deck (performed prior to contractor's use of any roofing products on the project).

- Failing to provide and ensure that "toxic" chemicals in the roofing products were not used in a manner that endangered the plaintiffs
- Failing to prepare an evacuation plan and require that the building remain unattended for the period of time when "toxic" chemicals in the roofing products were being used, or to implement other precautions including but not limited to continued monitoring of the air quality where the plaintiffs worked or the continued conducting of environmental assessments to ensure that no toxic fumes were circulating in the air which the plaintiffs breathed
- Failing to warn the plaintiffs of the dangerous and adverse effects of exposure and/or inhalation of the "toxic" chemicals in the roofing products; specifically failing to provide any clear written or oral warnings of the possible adverse effects of the products being used, and failing to provide any protective equipment or implement any safety measures for the protection of the plaintiffs from injury
- Failing to provide for an ongoing health screening program for the plaintiffs and owner's other employees exposed to "toxic" chemicals in the roofing products
- Failing to ensure that the contractor's work area was adequately cleaned up each day
- Failing to apply the "toxic" chemicals in the roofing products in a proper and safe manner

A central theme of the plaintiffs' allegations of negligence against Hentz Engineering was that it permitted the contractor to use on the project certain roofing products containing allegedly "toxic" chemicals. The plaintiffs focused on the terms of the material safety data sheets ("MSDS") for the bonding adhesive and the two-part low-rise foam (collectively the "roofing products"), and tailored their claimed physical ailments to the symptoms described in the MSDS. Despite the fact that the owner's requirements for the roof and the existing site conditions mandated use of a fully adhered roof system, and that the roofing products were approved for use in the United States and appropriate for use on the project,[3] the plaintiffs faulted Hentz Engineering for allowing the contractor to use what the plaintiffs considered to be "toxic" chemicals. They claimed that by affixing its "approval" stamp on the product data sheets submitted by the contractor to the owner, Hentz Engineering became the insurer of the safety of the contractor's use of the roofing products on the project.

The plaintiffs also claimed Hentz

Engineering's design of the roof replacement caused their exposure to "toxic" chemicals. From its inception, the plaintiffs' theory was flawed in that it completely ignored the impossibility of their exposure to concentrations of such chemicals sufficient to cause toxic effects. Over the course of the litigation, the plaintiffs adopted different theories as to how the alleged "toxic" chemicals traveled from the roof surface into their work area:

1. **Through Openings in the Roof Deck.** The plaintiffs' first theory as to how they were exposed to "toxic" chemicals from the project was that the chemicals infiltrated the building through large openings in the roof deck, created by sections of roof deck that were removed and replaced (as part of the project, rusted or otherwise damaged sections of roof deck were removed and replaced). See *Figures 5* and *6*. The plaintiffs claimed that the removal and replacement of damaged roof deck resulted in gaping openings in the roof deck, which permitted chemicals used on adjacent areas of the roof to travel down into their work area. The plaintiffs later abandoned this theory when they learned that all of the damaged decking was replaced (closing all such openings in the roof deck) prior to the contractor's use of any roofing products on the project.
2. **Through the HVAC System.** The plaintiffs' next theory as to how they were exposed to "toxic" chemicals from the project was that the configuration of the roof (with a parapet wall around its perimeter) permitted "toxic" chemicals to accumulate in high concentrations on the roof surface and then infiltrate the intake louvers for the HVAC system, also located on the roof. This theory was flawed for several reasons. First, it overlooked the fact that the surface area of the roof deck was as large as a football field, and any chemicals on the roof deck would have been dispersed by even light wind, which was nearly constant at the project site due to the proximity of the coastline. Second, before using roofing products in the area of the HVAC intakes, the contractor covered the units with tarps to minimize the odors entering the HVAC system, and Hentz Engineering had no ability to control the contractor's ways, means, and methods. Third, the plaintiffs' theory also ignored that Hentz Engineering had no control over the owner's HVAC system, which was a very sophisticated, state-of-the-art system operated entirely from a computer control station accessible only to the owner's facilities department personnel. Hentz Engineering had no access to these controls, nor did it have knowledge of how the system worked or how to operate it. Despite all of the inaccuracies in this theory, only when it later became apparent that the air feeding the plaintiffs' work area came from intakes located on the exterior of the building (rather than on the roof surface) did plaintiffs abandon this theory of their exposure.
3. **Through Screw Holes in the Roof Deck.** The plaintiffs' third theory as to how "toxic" chemicals from the project entered their work area was that the chemicals infiltrated holes left in the roof deck after removal of the original membrane and insulation, which had been mechanically attached.[4] They claimed that after penetrating the roof deck, the "toxic" chemicals entered the building's plenum space, were drawn into the HVAC system, and were pumped directly into their work area. They claimed Hentz Engineering was negligent in failing to require the contractor to plug each and every screw hole prior to using the roofing products.[5] This theory ignored the fact that the total surface area of all of the screw holes across the entire roof deck was less than 8 sq. ft. (0.012% of the total 68,000 sq. ft. of roof deck), and that the owner kept the building under positive pressure, which acted to repel air through the holes, preventing infiltration of chemicals from outside. Also, within approximately twelve minutes of application of the low-rise foam (which was applied prior to the bonding adhesive), the holes would have been plugged, preventing further chemicals from infiltrating the roof deck. Most importantly, the plaintiffs' third theory ignored the fact that the building plenum was ducted, and that if chemicals had infiltrated the plenum space as the plaintiffs alleged, such chemicals also would have had to penetrate the aluminum ducts carrying air for the HVAC system before they could have invaded the building's air supply.

BATTLE OF THE STANDARD-OF-CARE EXPERTS

As is the case in most negligence lawsuits against engineers and other professionals, the litigation hinged on the opinions of the experts who testified regarding Hentz Engineering's standard of care.

Plaintiffs' Standard-of-Care Expert

As their standard-of-care expert, the plaintiffs hired a mechanical engineer licensed in 49 states and two U.S. territories. The plaintiffs' expert was neither a civil engineer nor an RRC, had no relevant roofing experience, and had not sealed any documents as a professional engineer in approximately 30 years.

Plaintiffs' Misplaced Reliance on the Virginia Administrative Code

The plaintiffs' expert opined that Hentz Engineering, as the engineer of record, had a "duty to protect the health, safety, and welfare of the public, and that it violated this duty by subjecting the plaintiffs to harmful emissions from the roofing products." The plaintiffs' expert presumably assumed or inferred the existence of such a duty from the Virginia Standard of Practice and Conduct issued by the Virginia Engineering Licensure Board, entitled "Responsibility to the Public," which provides:

> The primary obligation of the professional is to the public. The professional shall recognize that the health, safety, and welfare of the general public are dependent upon professional judgments, decisions, and practices. If the professional judgment of the professional is overruled under circumstances when the health, safety, and welfare, or any combination thereof, of the public are endangered, the professional shall inform the employer or client of the possible consequences and notify appropriate authorities.
>
> *18 Virginia Administrative Code ("VAC") § 10-20-69*

The absolute best way to protect yourself is to ensure you have sufficient insurance coverage in the event you are sued. It is critical not only to have insurance, but also to have high enough coverage limits to provide for your defense and to pay any resulting judgments or settlements.

As discussed below, the plaintiffs' expert's reliance on 18 VAC § 10-20-69 was misplaced.

Among the plaintiffs' expert's allegations of wrongdoing against Hentz Engineering were that it failed to adequately ensure that fumes from the roofing products would not be drawn into the building through the HVAC intake louvers or through the holes in the roof decking, failed to provide for safe application of the roofing products, and failed to ensure that the roofing products were being used in a manner that did not endanger the plaintiffs' health. He opined that Hentz Engineering should have permitted the contractor to apply the roofing products only when the building was unoccupied (despite the owner's express desire otherwise), required the contractor to prepare an evacuation plan for building occupants, implemented air monitoring and environmental assessments, and required the contractor to provide an ongoing health screening program for the plaintiffs (despite Hentz Engineering's inability to control the contractor's ways, means, and methods).

Plaintiffs' Misplaced Reliance on Carvalho v. Toll Brothers & Developers

Plaintiffs' case against Hentz Engineering also was likely based on their expert's erroneous interpretation of a notorious decision by the New Jersey Supreme Court: *Carvalho v. Toll Brothers & Developers*, 675 A.2d 209, 143 N.J. 565 (1996). In *Carvalho*, an engineer was held accountable for wrongful death when a trench collapsed on a jobsite, killing a subcontractor. Since it was decided, *Carvalho* has been relied upon by plaintiffs around the country in their attempts to hold design professionals accountable for injuries to third parties.

In *Carvalho*, as in this case, the contractor was, by contract, solely responsible for its means and methods. However, the factors cited by the New Jersey Supreme Court in finding against the engineer were not present with regard to Hentz Engineering:

- The engineer in *Carvalho* had the right to stop the work, which the court transformed into a duty to stop the work, if circumstances merited. Hentz Engineering had no right to stop the work on the project.
- In *Carvalho*, the engineer had full-time site observation responsibilities. Hentz Engineering was required to perform only sporadic, part-time quality assurance observations.
- In *Carvalho*, the engineer was aware of a nearly identical trench collapse in the days leading up the fatal collapse. Hentz Engineering had no notice or understanding of any complaint in the building until late August.
- In *Carvalho*, the engineer knew about and had observed the dangerous work in progress leading to the ultimately fatal trench collapse. Not only did Hentz Engineering not know about or itself experience the presence of fumes in the building at any time, but it was unaware of this type of problem occurring on any project.

Hentz Engineering's Standard-of-Care Expert

Hentz Engineering retained Richard P. Canon as its standard-of-care expert. Not only is Mr. Canon a registered professional engineer in structural engineering, but he also is a Registered Roof Consultant (RRC) and one of the founding members of IIBEC. In addition to his hands-on involvement in the roofing industry since 1973, he has authored numerous articles and papers and given many technical presentations related to roofing and the roofing industry.

Hentz Engineering's Relationship With the Owner

Mr. Canon opined that Hentz Engineering's role was defined by its contract with the owner, which required it to perform part-time quality assurance monitoring. Because the nature of Hentz's site visits meant that it was on site for only a fraction of the total construction process, it was not tasked to observe activities that did or did not occur when it was not on site. The purpose of Hentz's visits was to become familiar with the progress and quality of the work completed and to determine if the work was being performed in a manner indicating that the work, when completed, would be in accordance with the contract documents.

Mr. Canon opined that other than communicating with the owner's designated representative or point of contact, Hentz had no responsibility to interact with the owner's employees. Hentz had no duties toward or control over the owner's employees and owed no duty to the plaintiffs to warn them or the owner's other employees of any injuries or adverse effects of exposure to and/or inhalation of the roofing products, to post written or symbolic warning signs, to provide oral warnings, or to provide any other preventive measures.

Hentz Engineering's Relationship With the Contractor

Other than assuring the quality of the roof installation, Hentz had no control over the contractor or the work procedures or hours agreed to between the owner and the

contractor. It would have been improper and inconsistent with industry practice and the applicable standard of care for Hentz Engineering to involve itself with or otherwise prescribe the ways, means, and methods of the contractor's work. Mr. Canon opined that Hentz Engineering's role was to focus on whether the work was being constructed such that it would result in the specified outcome, rather than involving itself in the details of how the work was being performed. He opined that because Hentz Engineering did not have control of the project site, it was not and should not have been responsible for the safety of the construction workers, the owner, or others on the site. This delineation of responsibility is supported by construction industry practice.

Safety of the Roofing Products

Hentz had no knowledge of a risk of injury or adverse effects posed by the roofing products to persons other than those at the point of application on the roof, which affected the contractor's, not the owner's employees. The manufacturer's literature applicable to the roofing products recommended respiratory protection only for persons at the point of application on the roof. Hentz was aware of no injuries or adverse effects of exposure to and/or inhalation of the roofing products under proper usage.

Mr. Canon opined that under the applicable standard of care, Hentz Engineering had no responsibility or duty to provide or ensure that the roofing products were used in a manner that did not endanger the plaintiffs or owner's other employees. It was the contractor's responsibility to make sure it was using the roofing products correctly to protect its employees; and it was the owner's responsibility, as the building owner, to ensure the safety of the plaintiffs and its other employees, including by conducting air quality monitoring in the plaintiffs' work area if it believed such monitoring to be necessary.

Hentz Engineering's Duty to Protect the Health, Safety, and Welfare of the Public

Mr. Canon also opined that plaintiffs' expert misinterpreted Hentz Engineering's "duty to protect the health, safety, and welfare of the public," imposed by 18 VAC § 10-20-69. Mr. Canon opined that Hentz Engineering's duty was to ensure the safety of the "final product" (i.e., the roof), not the safety of the process of achieving the final product (which was the dominion of the contractor). Because Hentz Engineering was not the party using the roofing products, or the party with control over the occupants of the building, Hentz Engineering did not have a "duty to protect the health, safety, and welfare of the public" with regard to the use of the roofing products. Unless expressly dictated in its contract, it is not within the engineer's duty, responsibility, or standard of care to ascertain or protect against potential health risks created by the contractor's ways, means, and methods.

THE END OF HENTZ ENGINEERING'S ORDEAL

Approximately one week before trial was to begin, the plaintiffs and Hentz Engineering entered into a confidential settlement. Although settlement ended the ordeal, resolution for Hentz Engineering came more than 1½ years after Steve Hentz received notice of the lawsuits. During that time, Hentz Engineering experienced significant financial cost, increased insurance premiums, and countless hours of lost time

spent in depositions and assisting with its defense, in addition to the emotional turmoil of enduring six multimillion-dollar lawsuits.

Hentz Engineering did everything it should have done on the project, yet it still fell victim to frivolous litigation. In retrospect, Hentz Engineering might have benefited from adding the following provisions to its contract with the owner.

1. **Contractual Provision Regarding Responsibility for Safety and Ways, Means, and Methods.** Although industry practice required the contractor to assume responsibility for project safety and ways, means, and methods, it would have been helpful to Hentz Engineering to expressly provide by contract for such a division of responsibility. Because Hentz Engineering and the contractor were separately retained by the owner, Hentz Engineering had little or no input regarding the terms of the contract agreed to between the owner and the contractor. However, Hentz Engineering could have required the inclusion of a term in its own contract expressly absolving itself of responsibility for project safety or the ways, means, and methods of construction.
2. **Owner's Acknowledgement if Building Is to Be Occupied.** Hentz Engineering could have given itself additional protection by requiring a provision in its contract stating that it was solely the owner's decision to keep the building occupied, that it did so at its own risk, and that it assumed all responsibility for any resulting hazards.
3. **Contractual Provision Regarding Owner's Responsibilities Toward Its Employees.** Hentz Engineering could have inserted a provision in its contract with the owner expressly stating that Hentz Engineering was not responsible for giving advice to the owner regarding how to deal with and/or protect its employees, and that Hentz Engineering assumed no responsibilities or duties whatsoever with regard to the owner's employees.
4. **Owner's Indemnification of Consultant.** In conjunction with the preceding provision, Hentz Engineering could have added a provision in its contract with the owner requiring that the owner indemnify, defend, and hold Hentz Engineering harmless from and against claims and lawsuits brought by the owner's employees related to the project. If Hentz Engineering's contract had contained such a provision, it could have required the owner to assume the costs of its defense. Alternatively, Hentz Engineering could have required the owner to simply indemnify it for claims and lawsuits brought by the owner's employees related to the project, which would have permitted Hentz Engineering to recover from the owner the costs of its defense (but still would have required Hentz Engineering to expend funds up front for its defense).

RECOMMENDATIONS

- When negotiating a contract with the owner, be aware of the possibility of lawsuits by the owner's employees or other third parties, and include appropriate terms in the contract to insulate you from such risks and/or transfer such risks to other parties, where appropriate. However, be aware that in some states, you cannot by contract limit your liability for your own negligence.
- Have the owner, in writing, acknowledge that you are not responsible and have not undertaken to advise it regarding its own employees.
- If the owner wishes to keep the building occupied during construction, have it acknowledged in writing that it has considered the potential risks and, on its own, decided that the building will remain occupied during construction. Further, have the owner acknowledge in writing that you assume no responsibility whatsoever for any results of this decision, which was solely the owner's decision.
- Do not by contract assume responsibility for project safety or for the contractor's ways, means, and methods. If possible, in your agreement with the owner, specifically state that you are not responsible for these items.
- Specify in your contract the nature of your site observations, including exactly what you will be looking at, and where possible, what you will not be looking at during your site visits.
- Recommend that the owner, contractor, and any other consultants attend a preconstruction meeting. At such a meeting, be sure to cover each party's role on the project and emphasize in front of all parties that you are not responsible for project safety.
- Instead of "approving" Material Safety Data Sheets (MSDSs) or Product Data Sheets, limit your review to acknowledging receipt and transmitting to the owner.
- Request that the owner confirm in writing that it has received copies of the MSDSs.

Although the above measures may help you in the event that you are sued, the only way that frivolous lawsuits—such as the ones described above—will end is through reform of the tort laws throughout the U.S., which must be accomplished on a state-by-state basis. If the medical profession is any indicator, effective tort reform for engineering- and construction-related professional negligence claims is unlikely, and the frequency of these types of lawsuits will increase in the future. The absolute best way to protect yourself is to ensure that you have sufficient insurance coverage in the event you are sued. It is critical not only to have insurance, but also to have high enough coverage limits to provide for your defense and to pay any resulting judgments or settlements.

The applicable rules regarding contract interpretation, contract construction, limitation of liability, and indemnification differ from state to state. The foregoing is meant to bring awareness to the topics discussed, and is not intended to be legal advice. Before incorporating any of these suggestions into your contract, consult with a licensed attorney in your state and your commercial insurance provider. IIBEC

REFERENCES

1. The contract between the owner and the contractor was an IIBEC (then RCI) form contract.
2. In Virginia, if an employee is injured at work, the employee's sole recourse against its employer is under the Virginia Workers' Compensation Act, which operates separately from Virginia's civil court

system. In exchange for its participation in Virginia's workers' compensation system, an employer is immune from civil suit by an injured employee. The plaintiffs could not sue the owner in court for their injuries; they could only bring workers' compensation claims against the owner—which they did. Because the plaintiffs were barred from bringing the owner into the litigation, neither Hentz Engineering nor the contractor were able to bring the owner into the litigation either.

3. In addition, the roofing products in question also were being used throughout the U.S. and the world—even on projects such as occupied hospitals, where exposure to chemicals is of particular concern.
4. The existing roof was constructed prior to the owner's installation of fiber-optic cable and electrical conduit in the flutes above the bar joists below the roof deck. Therefore, the existing roof was attached using mechanical fasteners.
5. This ignored the fact that such a practice would have interfered with the bond between the new membrane and the roof deck, thus limiting or possibly voiding the warranty on the new roof.

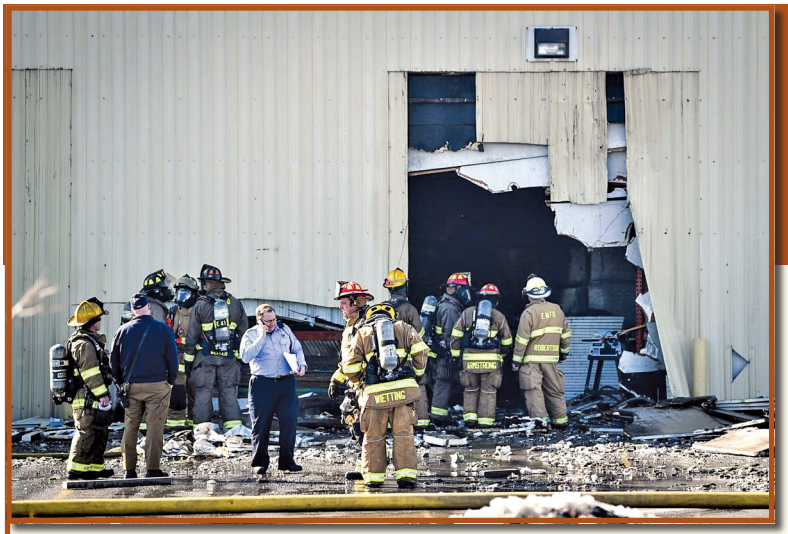
This article was originally presented at the 2013 IIBEC International Convention & Trade Show and published in its proceedings.

Richard P. Canon, F-IIBEC, RRC, PE

Dick Canon, owner of Canon Consulting & Engineering Co. in Moore, SC, has a BS in civil engineering from Auburn University and over 45 years of experience in the industry. He served as RCI's (now IIBEC's) second president from 1985-86 and was one of the inaugural recipients of the RRC in 1988. He was granted the institute's Herbert Busching Award in 1996. He has given testimony in dozens of legal cases related to roofing in various U.S. and Canadian jurisdictions.

Stephen E. Hentz, RBEC, REWO, PE, CDT

Steve Hentz received a bachelor of science degree in civil engineering technology from Old Dominion University. After working for various engineering firms, he founded Hentz Engineering in Virginia, which he sold in 2016 to REI Engineers. He has opened a branch of REI in Mechanicsburg, PA, and he currently has over 30 years' experience in engineering, specializing in the building enclosure. He has also served as an expert witness for litigation involving roof and wall systems. Hentz is chair of IIBEC's REWO Exam Development Subcommittee.



The aftermath of the Atlas Roofing fire. Photo by Meg McLaughlin.

Roofing Companies Suffer Fires

February 21 was a bad day for two Illinois roofing-related companies. Fires erupted at the East Moline polyisocyanurate insulation facility of Atlas Roofing Corp. and at the Standard Roofing Company in DeKalb, IL, some 100 miles east.

The Atlas Roofing fire was relatively minor, but the Standard Roofing Company building was totally destroyed. Officials reported that firefighters fought the latter fire for three hours, contending with fallen power lines in addition to combustible materials and flammable liquids housed in the structure. They had to return several times over the next few days to quell persistent hot spots. See a video of the building fully engulfed in flames at https://tinyurl.com/r6g6f6z. Standard Roofing was owned by multiple generations of the Theisen family since 1961.

Atlas Roofing owns 35 facilities across the U.S. and manufactures residential and commercial roofing materials.

No injuries were reported in either fire. Causes were not determined at press time. Damage at the Atlas structure was reported to be at least $200,000, while the Standard Roofing building was valued at a reported $900,000.

— *Daily Chronicle* and other sources