CONSTRUCTION INDUSTRY SAFETY COALITION

SUBMITTED VIA REGULATIONS.GOV

October 30, 2025

Amanda Wood Laihow
Acting Assistant Secretary
Occupational Safety and Health Administration
U.S. Department of Labor
200 Constitution Ave., NW
Washington, DC 20210

Re: Construction Industry Safety Coalition Post-Hearing Brief Responding to OSHA's Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings, Docket No. OSHA-2021-0009

Dear Acting Secretary Laihow:

The Construction Industry Safety Coalition ("CISC" or the "Coalition") respectfully submits the attached post-hearing brief in response to the Occupational Safety and Health Administration's ("OSHA" or the "Agency") informal public hearing held June 16, 2025, through July 2, 2025, regarding the Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings, 89 Fed. Reg. 70,698 (August 30, 2024) ("NPRM" or the "proposed rule").

The CISC is comprised of trade associations representing virtually every aspect of the construction industry. Workplace safety and health is a priority for all members of the Coalition, and each is committed to helping create safer construction jobsites for employees. As explained more fully in the attached post-hearing brief, CISC reiterates its concerns with the prescriptive approach OSHA has proposed in the NPRM and respectfully renews its request for the Agency to develop a construction industry-specific regulation on heat illness and injury prevention.

The CISC appreciates OSHA's consideration of the Coalition's testimony and additional comments to the record as outlined in the attached post-hearing brief. We look forward to continued engagement with OSHA on this important issue.

Sincerely,

American Road and Transportation Builders Association

American Society of Concrete Contractors

American Subcontractors Association

Associated Builders and Contractors

Associated General Contractors of America

Association of the Wall and Ceiling Industry

Concrete Masonry and Hardscapes Association

Concrete Sawing & Drilling Association

Distribution Contractors Association

Independent Electrical Contractors

International Council of Employers of Bricklayers and Allied Craftworkers Leading Builders of America

Mason Contractors Association of America

Mechanical Contractors Association of America

National Asphalt Paving Association

National Association of Home Builders of the United States

National Electrical Contractors Association

National Framers Council

National Roofing Contractors Association

National Utility Contractors Association

Natural Stone Institute

Plastic Pipe Institute

Signatory Wall and Ceiling Contractors Alliance

Specialized Carriers & Riggers Association

The Association of Union Constructors

Tile Roofing Industry Alliance

Construction Industry Safety Coalition
Post-Hearing Brief
NPRM on Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings
Docket No. OSHA-2021-0009

I. Introduction.

The Construction Industry Safety Coalition ("CISC" or the "Coalition") respectfully files the following written post-hearing brief regarding the Occupational Safety and Health Administration's ("OSHA" or the "Agency") Notice of Proposed Rulemaking concerning the Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings, 89 Fed. Reg. 70,698 (August 30, 2024) ("NPRM" or the "proposed rule").

As OSHA is aware, the CISC is comprised of trade associations representing virtually every aspect of the construction industry. The CISC was formed several years ago to provide data and information to OSHA on regulatory, interpretive, and policy initiatives. The CISC has its roots in a long-standing group of construction industry trade associations who for decades have met to discuss safety and health initiatives impacting the construction industry. The CISC speaks for small, medium, and large contractors, general contractors, subcontractors, and union and non-union contractors alike. Virtually every construction trade, task, and activity is represented by the member associations of the CISC.

The CISC has been an active participant throughout this rulemaking process. The CISC presented extensive pre-hearing written comments to OSHA regarding its views and recommendations on the proposed rule. As the CISC has reiterated throughout the rulemaking process, a regulatory approach – if adopted – must be a flexible, performance-based standard. Moreover, should the Agency move forward with a federal heat standard, the CISC has repeatedly requested that OSHA develop a separate rulemaking for the construction industry, as the Agency has done in other significant rulemakings.

In developing the pre-hearing written comments, members of the CISC held several meetings and teleconferences with each other and sought specific feedback from members regarding OSHA's approach to regulating hazardous heat in construction. The CISC wishes to emphasize that the comments developed and information provided are based on the specific feedback members provided to the participating trade associations.

The CISC and its members also testified during the informal public hearing held by the Agency. OSHA devoted almost one full day to the construction industry, which included testimony from the CISC, Associated General Contractors of America, Associated Builders and Contractors, National Association of Home Builders of the United States, National Electrical Contractors Association, and National Roofing Contractors Association. The CISC and these members presented over an hour of testimony and addressed questions from the public and OSHA.

The CISC's post-hearing brief is divided into several sections. Section II summarizes CISC's position on the proposed rule, as expressed during the pre-hearing written comment period, hearing testimony, and in this post-hearing brief. Section III responds to questions asked by OSHA and members of the public during the informal public hearing. Finally, Section IV provides comments

regarding the CISC's views of additional information and argument provided by other participants during the informal public hearing.

II. Summary of CISC's Position.

OSHA is proposing a new standard to regulate hazardous heat in nearly every workplace, outdoors and indoors. The reach of the proposed rule is not limited by industry; the proposed requirements apply equally to employers in general industry, construction, maritime, and agriculture sectors where OSHA has jurisdiction. The Agency is proposing that nearly all employers create a written plan to evaluate and control heat hazards in their workplace. The Agency further proposes that employers implement specific controls when the temperature reaches a heat index of 80°F with even more controls required if the temperature reaches a heat index of 90°F. These controls include, amongst other things, the provision of readily accessible drinking water, paid rest breaks, and acclimatization protocols for new and returning employees. The Agency also proposes training requirements and new recordkeeping obligations.

The CISC appreciates OSHA's attempts to make compliance straightforward with a one-size-fits-all proposed standard. Having said this, the proposed standard misses the mark. The proposed one-size-fits-all standard does not allow for the needed flexibility for the construction industry. The arbitrary temperature triggers fail to consider the regional differences throughout the United States, the types of tasks employees are performing, and how each employee may be individually affected by heat. Likewise, the rigid acclimatization requirements do not allow employers flexibility to implement acclimatization procedures that best suit their workforce or jobsite. Instead, the proposed procedures will result in significant financial ramifications for employees and employers alike. In addition, several of the proposed requirements will create greater hazards for construction workers due to the nature of the tasks performed on a construction worksite, such as those performed at heights or around machinery. Moreover, the written plan required by the proposed rule lacks the needed flexibility to be workable in construction as it amounts to a *de facto* requirement that all employers, including those with 10 or fewer employees, must develop a written plan to demonstrate compliance.

A separate rule is imperative as construction work is vastly different from general industries. It is a wholly distinct industry from shipbuilding or agriculture and should not be regulated by the same set of requirements as those industries. Construction projects are a unique, hybrid environment that undergo many transformative steps over the lifecycle of the project. A construction worksite, therefore, does not fit within the proposed rule's rigid definition of an "indoor" or "outdoor" worksite. Multi-employer work environments are also prevalent throughout the construction industry. The Agency's multi-employer citation policy would place the burden on general contractors, which are typically small businesses, to ensure all subcontractors are compliant with the proposed regulation. This overwhelming burden is infeasible as general contractors would be required to monitor workers whom they do not control, do not train, or maintain accurate records that would meet the compliance expectations.

The CISC does not intend to revisit in this brief all the arguments made in its pre-hearing written comments and oral testimony. The CISC hereby incorporates all its previous written comments and oral testimony into this brief. Below, the CISC addresses certain issues raised by OSHA and

members of the public during the informal public hearing that were not specifically addressed in previous CISC comments or testimony.

III. Response to Inquiries from OSHA and Interested Stakeholders.

A. Performance-Oriented Standards Provide Flexibility That Is Crucial for the Construction Industry.

The construction industry is made up of several types of businesses and employees who perform countless types of tasks and projects. To account for the diverse needs among members of the construction industry, OSHA's approach to heat illness and injury must focus on the core requirements of water, rest, shade, and training.[1, 2] Utilizing these core requirements as guideposts allows construction industry employers to tailor their approach to heat injury and illness prevention to their specific region, environment, project, and/or task, which vary drastically across worksites.[3]

For instance, rather than requiring specific times and locations for breaks, a performance-oriented approach can mandate the existence of a break area, generally, and allow the employer flexibility in determining when the best time and place for a break would be based on the worksite and an employee's specific task.[4] Employees who work on scaffolds on tall buildings would not be well served if they are required to take mandatory breaks in specific locations.[5] The time it takes these employees to get to a break location could take longer than the break itself as they would be required to descend from the scaffold for each break.[6] Moreover, there would be increased risk if such an employee is required to take breaks at a specific location. Constantly ascending and descending from a scaffold would create a greater hazard for these employees, instead of protecting against them.[7] To alleviate the potential risks associated with a mandatory time and break area requirement, it would be much more pragmatic to coordinate as-needed breaks based on an employee's individual needs, the nature of the work, and the specific conditions of the workplace on any given day.[8]

In addition to creating new safety hazards, mandating rest breaks at specific times and locations is logistically unworkable in the construction industry.[9] When pouring concrete, for instance, timing is crucial, as all employees must complete their specific role in the overall pouring task to ensure a quality pour.[10] Mandatory rest breaks would significantly interfere with an employer's ability to

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[1] *See* Heat - Water. Rest. Shade | Occupational Safety and Health Administration.

[2] *See, e.g.*, Transcript of Informal Public Hearing at 81:13-17, 147:10-15, 169:10-15, Occupational Safety and Health Administration, Informal Public Hearing (June 16, 2025) (hereafter "Transcript"); Transcript at 12:10-14 (June 17, 2025); Transcript at 237:1-4 (June 24, 2025).

[3] *See* Transcript at 78:6-22 (June 18, 2025).

[4] *See, e.g.*, Transcript at 109:8-10, 116:3-21 (June 16, 2025); Transcript at 237:5-22, 238:8-12 (June 24, 2025) (discussing safety hazards for roadside construction workers).

[5] *See, e.g.,* Transcript at 59:20-60:7 (June 18, 2025); Transcript at 186:16-20.

[6] *See* Transcript at 59:20-60:7, 231:4-21 (June 18, 2025).

[7] *See, e.g.*, Transcript at 109:4-8 (June 16, 2025); Transcript at 96:11-21, 232:2-8 (June 18, 2025); Transcript at 140:4-8 (June 25, 2025).

[8] *See* Transcript at 59:20-60:7 (June 18, 2025).

[9] *See, e.g.*, Transcript at 130:4-6 (June 16, 2025); Transcript at 126:19-22 (June 17, 2025); Transcript at 59:6-19 (June 18, 2025); Transcript at 235:8-20 (June 24, 2025).

[10] *See, e.g.*, Transcript at 130:4-6 (June 16, 2025); Transcript at 126:19-22 (June 17, 2025); Transcript at 59:6-19 (June 18, 2025); Transcript at 235:8-20 (June 24, 2025).

effectively coordinate the concrete trucks' timing, the concrete pour rate, and the trucks' entrance to and exit from the worksite, along with breaks for all employees at once.[11] Moreover, mandating a 15-minute break every two hours, regardless of whether employees are experiencing heat-related symptoms or want a rest break, is highly disruptive to the project's workflow.[12]

Finally, requiring a temperature for potable water is far too prescriptive.[13] Temperatures vary drastically among regions within the United States making it exceedingly challenging to maintain water at a specific temperature throughout the day on a construction site.[14] The "suitably cool" language in the proposed rule will lead to inconsistent enforcement.[15] Some employees may prefer their drinking water warmer than others, or warmer than a compliance officer feels is "suitably cool." Instead, a more realistic, performance-oriented approach that OSHA should implement is a requirement that employers provide potable water.[16] Such a flexible standard would account for regional temperature differences, small businesses' budgets, and varying job site environments.[17]

The construction industry's complex nature,[18] and the fact that every jobsite is different,[19] prompted OSHA to acknowledge that its "recommended practices can, and should, be tailored to the needs of each construction company and/or job site" in the first place.[20] The proposed rule's prescriptive nature, however, ignores the construction industry's unique structure.[21] One size simply cannot fit all industries as OSHA proposes, particularly given the vast differences apparent among construction industry employers or worksites.[22]

B. OSHA Must Focus on Outcomes Rather Than Prescriptive Requirements.

OSHA should revise requirements that are too vague or too prescriptive as currently proposed by focusing on its longstanding core requirements of water, rest, shade, and training.[23] Employers are already equipped to follow these core tenants and, as discussed in the CISC's pre-hearing written submissions, many construction industry employers already follow them. To this end, OSHA must tailor the proposed rule to support effective outcomes rather than taking a "check the box" approach to compliance without thought to items employers need to complete, regardless of effectiveness.[24]

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[11] *See* Transcript at 127:1-5 (June 17, 2025).
[12] *See* Transcript at 70:5-12 (June 16, 2025).
[13] *See* Transcript at 16:19:16, 81:10-82:5 (June 18, 2025).
[14] *See* Transcript at 254:1-13 (June 24, 2025) (explaining that water is always available, regardless of the ambient temperature).
[15] *See* Transcript at 16:19:16, 81:10-82:5 (June 18, 2025).
[16] *See* Transcript at 36:10-38:2 (June 18, 2025).
[17] *See* Transcript at 242:3-22 (June 24, 2025).
[18] *See* Transcript at 76:22-77:10 (June 18, 2025); *see also* Complexity in Construction Projects: A Literature Review, Lafhaj, *et al.*, 1, 15 (2024).
[19] *See* Transcript at 250:12-22 (June 24, 2025).
[20] *See* Recommended Practices for Safety and Health Programs in Construction, at p. 5.
[21] *See, e.g.*, Transcript at 12:14-22, 76:5-77:10, 77:11-78:5 (June 18, 2025).
[22] *See* Transcript at 244:19-245:5 (June 24, 2025) (discussing how small business will struggle to adhere to a one-size-fits-all regulation given the changing nature of any given worksite).
[23] *See* Heat - Water. Rest. Shade | Occupational Safety and Health Administration.
[24] *See* Transcript at 116:1-5 (July 2, 2025).

By focusing on outcomes rather than requirements, employers would be able to utilize preexisting heat illness prevention programs that have been effective for their employees and their worksites.[25] Moreover, employers could provide as-needed rest and water breaks, along with other resources, according to the needs of their employees and the specific worksite conditions.[26] Employers simply would be much better positioned to balance their interests and responsibilities if OSHA implements a rule focused on the overall result, rather than the means of reaching a specific end.[27]

C. The "One Size Fits All" Heat Triggers Are Inappropriate.

One of the Coalition's key concerns relates to the proposed heat triggers at which the mandates in the proposed rule would become effective. OSHA has proposed an initial heat index trigger of 80°F and a high-heat trigger of 90°F.[28] Not only do these heat triggers fail to account for the unique climatic conditions across the United States, but they also lack any scientific backing or support.[29]

OSHA's current "one size fits all" heat trigger, which applies regardless of geography, workplaces, employee sensitivity to heat, and nature of the job or task, among other things, does not account for the unique needs of the construction industry.[30] In the proposed rule, heat triggers do not take into account how heat impacts individuals differently in diverse geographic locations.[31] Moreover, these heat triggers are not supported by specific health data.[32] CISC maintains the position that specific heat triggers should not be included in the proposed rule at all. However, if heat triggers are included in a final rule, heat triggers should vary depending on the different geographic locations because employees who reside and work in different regions may already be accustomed to the climate and weather conditions specific to their location.[33] Any regulation must recognize the need for regional acclimatization processes in a landscape as broad and varied as the United States, and provide necessary flexibility.

A fixed temperature trigger will have a disparate impact on areas with naturally warmer climates.[34] An 80°F heat trigger disadvantages the geographic regions within the country that do not operate in climates that reach below 80°F for several weeks at a time.[35] In Florida, if an 80°F heat trigger is used as a threshold, the state temperatures would exceed this threshold 278 days of the year.[36] In Oklahoma, an 80°F heat trigger would be in effect 200 days of the year.[37] In Arizona,

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[25] *See* Transcript at 12:10-14 (June 17, 2024).
[26] *See* Transcript at 96:17-97:12 (June 16, 2025) (discussing Nevada's heat safety standard, which takes into account "local conditions, and the nature of the tasks at hand.").
[27] *See* Transcript at 116:1-5 (July 2, 2025).
[28] *See* 86 Fed. Reg. 70,698, Section V.B., Basis for Initial and High Heat Triggers (August 30, 2024).
[29] *See* Transcript at 79:18-22, 80:1-8, 113:10-22; 114:1-13 (June 18, 2025).
[30] *See* Transcript at 68:17-22, 69:2 (June 16, 2025); *see* Transcript at 14:14-22, 15-16:1-4 (June 18, 2025).
[31] *See* Transcript at 79:18-22, 80:1-8 (June 18, 2025).
[32] *See* Transcript at 136:10-16 (June 20, 2025).
[33] *See* Transcript at 112:16-22 (June 23, 2025).
[34] *See* Transcript at 136:10-16 (June 20, 2025).
[35] *Id.*
[36] *See* Transcript at 111:14-16 (June 24, 2025).
[37] *See* Transcript at 155:8-17 (June 20, 2025).

temperatures can exceed 80°F even overnight.[38] In these states, the heat trigger would become the working norm as opposed to an exception.[39]

Heat triggers should vary not only region to region, but in microclimates that are within each region and often overlooked, but are equally critical to heat and employee safety.[40] Even within states such as Georgia, there are flat plateau areas with no shade and concentrated heat, only thirty miles from mountainous areas with shade from trees and a cool breeze.[41] Additionally, specifically in urbanized areas, the urban heat island effect leads to elevated temperatures compared to surrounding vegetated zones, primarily due to the prevalence of concrete, asphalt, and buildings that retain heat.[42] These localized temperature increases can influence working conditions, material performance, and scheduling.[43] It is also important to note that standard heat index readings can change within each worksite and often fail to account for these natural and man-made microclimates.[44] Accordingly, any regulatory approach addressing heat injury and illness must account for the unique climatic conditions of each region.[45] Therefore, other data for geographic triggers, rather than environmental temperature, such as the deviation from the normal heat index in a particular location and/or the National Weather Service's heat advisories, can be used to incorporate geographic differences and determine an appropriate heat threshold in that particular environment.[46]

D. Effective Heat Awareness Training Reduces the Need for Strict Acclimatization Requirements.

Rather than focus on strict acclimatization requirements, OSHA should focus on heat awareness training and education. New and returning employees can be educated through training to understand their own individual risk factors for heat injury and illness, including the impact that their body habits, preexisting chronic illnesses or conditions, medications, or caffeine and substance use can have on heat illness.[47] Effective heat awareness training also empowers these employees to recognize signs and symptoms of heat illness in themselves and others. Adopting these core requirements into OSHA's proposed rule gives employees the training and education necessary to allow them to work safely by giving them the tools needed to proactively address heat illness and injury, such as knowing when they should take a break or drink water.[48] By knowing when it is safe to work considering their individual needs and associated risk factors–of which employers are not necessarily aware–new and returning employees would not necessarily need to

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[38] *See* Transcript at 114:19-8 (June 16, 2025).
[39] *See* Transcript at 155:8-17 (June 20, 2025).
[40] *See* Transcript at 195:1-3 (June 30, 2025).
[41] *See id.* at 110:15-22, 111:1-4.
[42] *See* What Are Heat Islands? | US EPA.
[43] *See* Transcript at 177:7-19 (June 26, 2025).
[44] *See* Transcript at 195:12-18 (June 30, 2025).
[45] *See* Transcript at 112:16-22 (June 23, 2025).
[46] *See* Transcript at 14:14-22, 15-16:1-4 (June 18, 2025); *see* Transcript at 20:17-22 (July 1, 2025); *see* Transcript at 186:21-22, 187:1-2 (July 2, 2025).
[47] *See* Heat - Personal Risk Factors | Occupational Safety and Health Administration.
[48] *See* Developing Heat Stress Training Assessments: A Training-Driven Methodology Approach to Enhance Safety in the Construction Industry, Machiori, *et al.*, 263 (2025).

undergo strict acclimatization protocols and employers can maintain heat illness programs that are already effective.[49]

E. Acclimatization Procedures Should be Specific to an Employer's Operations.

OSHA's prescriptive approach to acclimatization in the proposed rule poses challenges to construction industry employers. However, a performance-oriented approach to acclimatization can allow employers to develop their own protocols that are specific to a business's own operations.[50]

As written, the proposed rule's acclimatization schedule is particularly onerous and inflexible for construction worksites because the site itself is always changing as construction progresses.[51] By its nature, a construction site involves a hybrid working environment that exposes employees to both indoor and outdoor environments.[52] Construction employers must be able to adapt their acclimatization requirements to this hybrid environment, for which the proposed rule does not account.[53]

Similarly, acclimation is not uniform in any respect – regional climate, as well as employee age, physical fitness, underlying health conditions, and medications all play a major role in how an employee acclimates to heat.[54] Flexible acclimatization requirements can allow employers to create self-managed programs that account for local weather conditions, the type of tasks being completed, and individual employee needs to develop a more tailored approach. Enhanced training, adapted by employers based on their unique environments, significantly improves employees' understanding of heat safety and allows employees to take control of their safety.[55]

The nature of the construction industry makes it highly impractical for employees to reacclimatize if they are away from the jobsite for 14 days.[56] Construction projects run on tight schedules.[57] If an employee is unable to work, the employer would be at a severe disadvantage in trying to find another employee who can fill in as any new employee, under the proposed rule, would need to go through the prolonged acclimatization process even if the employee had been living and working in the same environment on a daily basis.[58] In the construction industry, construction workers often change jobs, which makes it difficult to determine which employees have already been acclimatized, as defined under the proposed rule.[59] This can lead to inconsistent enforcement. Therefore, acclimatization schedules for new and returning employees must be flexible.[60]

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[49] *See, e.g.*, Transcript at 79:1-9; 80:9-19, 120:20-121:9 (June 18, 2025); Transcript at 112:6-12 (June 27, 2025); Transcript at 116:1-5 (July 2, 2025).
[50] *See* Transcript at 80:9-19 (June 18, 2025).
[51] *See, e.g.*, Transcript at 12:3-13, 29:7-31:3 (June 18, 2025); Transcript at 49:18-50:21 (June 24, 2025); Transcript at 239:4-7 (June 24, 2025).
[52] *See* Transcript at 12:3-13, 29:7-31:3 (June 18, 2025).
[53] *See* Transcript at 77:11-78:5, 105:7-12 (June 18, 2025); Transcript at 238:21-239:7 (June 24, 2025).
[54] *See* Transcript at 109:14-16 (June 16, 2025); Transcript at 79:18-22, 80:1-19 (June 18, 2025).
[55] *See* Transcript at 107:1-7 (June 18, 2025); *see also* Machiori at 263.
[56] *See* Transcript at 60:8-61:13 (June 18, 2025).
[57] *See, e.g.*, Transcript at 126:19-22 (June 17, 2025); Transcript at 60:8-61:13 (June 18, 2025); Transcript at 234:21-235:20, 260:13-261:10 (June 24, 2025);
[58] *See* Transcript at 60:8-61:13 (June 18, 2025).
[59] *Id.*
[60] *See* Transcript at 130:4-131:16 (June 18, 2025).

Acclimatization should focus on heat hazard awareness training and allow employers to develop acclimatization protocols tailored to their worksite, taking into account employee safety and the time constraints of a particular project.[61]

Although some stakeholders argued that the proposed rule is flexible in its acclimatization plan because it leaves room for larger employers with greater resources to tailor the procedures to their worksite, this blatantly disadvantages small businesses.[62] Small businesses make up the vast majority of the construction industry.[63] Rigid acclimatization processes inherently disadvantage small businesses by causing economic hardship, delays in completing projects, and even inability to hire employees.[64] The proposed rule's strict acclimatization requirements will undoubtedly impair their ability to keep up with larger competitors that may have ample resources at their disposal.[65] The proposed rule should provide flexibility for employers, large and small, to train their employees, providing them with the information they need to determine how best to acclimatize based on their individual risk factors and the regional climate.[66]

F. Performance-Based Training Requirements Better Suit the Construction Industry.

The construction industry has already proven that training employees is an effective way to reduce heat illness and injury by educating employees to recognize and address the signs and symptoms of heat illness.[67] The proposed rule's overly prescriptive training requirements must be modified to allow the construction industry to continue implementing successful training programs.[68]

Construction worksites are comprised of multiple specialty trade subcontractors. Employers in the construction industry implement adaptable training programs that educate their employees on heat illness based on individual risk factors, which enhances preventative outcomes.[69] Overly prescriptive training requirements do not make sense in a diverse industry like construction. For instance, the California Division of Occupational Safety and Health's Heat Standard has extensive training requirements for both employees and supervisors.[70] While such a prescriptive approach might work in some industries, it is not feasible for the construction industry, which is an industry

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[61] *See* Transcript at 27:8-20 (June 17, 2025); Transcript at 112:6-12 (June 27, 2025); *see also* Machiori at 263.
[62] *See* Transcript at 201:3-14 (June 16, 2025); Transcript at 176:6-8 (June 23, 2025); *but see* Transcript at 82:10-83:6 (June 18, 2025); Transcript at 235:8-20, 244:19-245:5 (June 24, 2025) (discussing the effect of overly prescriptive, one-size-fits-all regulations on small businesses).
[63] *See* Transcript at 76:5-22 (June 18, 2025); *see e.g.,* Natalia Siniavskaia, Most Home Builders are Small Businesses, Nat'l Ass'n of Home Builders (Aug. 27, 2025) (available at https://eyeonhousing.org/2025/08/most-home-builders-are-small-businesses/) (last visited Oct. 14, 2025); 2024 Small Business Profile, U.S. Small Business Administration Office of Advocacy (2024), at page 4, https://advocacy.sba.gov/wp-content/uploads/2024/11/United_States.pdf.
[64] *See* Transcript at 128:2-4 (June 17, 2025); Transcript at 80:20-81:9 (June 18, 2025).
[65] *See* Transcript at 235:8-20 (June 24, 2025); *see also* Transcript at 226:13-21 (June 23, 2025).
[66] *See* Transcript at 78:15-22, 119:13-120:4, 120:20-121:9 (June 18, 2025).
[67] *See* Transcript at 81:13-17 (June 16, 2025); Transcript at 78:6-14, 79:1-9 (June 18, 2025).
[68] *See* Transcript at 78:6-79:9, 120:20-121:9 (June 18, 2025).
[69] *See* Transcript at 120:20-121:9, 244:19-245:5 (June 18, 2025).
[70] *See* Cal. Code Regs. tit. 8, §§ 3395(h), 3396(h).

marked by diverse occupations and faces high workforce turnover, recordkeeping burdens, and language barriers, among other challenges.[71]

G. Current Successful Strategies to Address Heat in the Workplace.

CISC members, like the majority of the construction industry, have already implemented successful protocols, plans, and practices to protect their employees from the effects of heat.[72] The efforts of the construction industry have been successful because they are simple, adaptable to each unique worksite, and focus on the core values of training, water, rest, and shade.[73] The proposed rule should not turn the construction industry on its head by requiring new methods to address heat, especially when the industry has already proven that the methods in place are effective for a particular task, worksite, and employee.[74]

CISC members have successfully educated employees to recognize and address the signs and symptoms of heat illness for many years.[75] Effective training should emphasize an employee's personal risk factors and how different behaviors can affect an employee when working in high heat conditions.[76] These factors include age, overall health, whether they have recently consumed caffeinated drinks or alcoholic beverages, medications, and a host of other factors.[77] Providing flexibility for employers to take into consideration the specific worksite conditions and crew factors on a particular day will allow for a more tailored heat illness approach than the burdensome, overly prescriptive requirements of the proposed rule.[78]

Additionally, construction employers are already fulfilling the recordkeeping intentions that the current rule seeks to require. Therefore, the overly prescriptive requirements for recordkeeping in the proposed rule overshoots the well-founded intention by making any new recordkeeping requirements an unnecessary administrative burden.[79] For example, maintaining records of indoor temperatures for months is unnecessary because, on certain construction sites, the temperature indoors is similar to the temperature outdoors, and records of outdoor temperatures are available through many other sources.[80] Further, many contractors finish their work in less than six months, so there is no need to maintain records for a location where work is no longer being performed.[81]

H. The Rule Must Address Hybrid Workplaces.

The construction environment is ever-changing – each project is different, each crew is different, and conditions for a project can change daily, if not hourly.[82] This dynamic is unique to the

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[71] *See* Transcript at 78:1-5, 105:9-13, 200:17-201:1 (June 18, 2025); Transcript at 115:22-116:5 (July 2, 2025); *see also* Transcript at 114:5-10, 115:15-21 (July 2, 2025) (discussing California's heat standard, which varies based on region).
[72] *See* Transcript at 227:5-10 (June 23, 2025); *see* Transcript at 296:6-14, 301:1-10 (June 25, 2025).
[73] *See* Transcript at 18:6-15 (June 16, 2025).
[74] *See* Transcript at 69:13-17, 70:1-10 (June 23, 2025).
[75] *See* Transcript at 79:1-9 (June 18, 2025).
[76] *See* Transcript at 120:20-22, 121:1-9 (June 18, 2025); *see* Transcript at 108:4-11 (July 1, 2025).
[77] *See* Heat - Personal Risk Factors | Occupational Safety and Health Administration.
[78] *See* Transcript at 92:6-16 (June 23, 2025).
[79] *See* Transcript at 105:9-13 (June 18, 2025).
[80] *See* Transcript at 83:7-22, 84:1-4 (June 18, 2025).
[81] *Id.*
[82] *See* Transcript at 239:4-7 (June 24, 2025).

construction industry and further highlights the need for a simple but effective approach when attempting to regulate indoor, outdoor, and hybrid work environments.[83] Therefore, the fact that the proposed rule currently lacks guidance allowing a hybrid workplace to determine what areas are considered indoor or outdoor is a critical flaw of the proposed rule.[84]

Each construction project itself undergoes many transformative steps – for example, as buildings are framed out, drywall and insulation are installed, and doors, windows, and other infrastructure is put in, the working environment is completely different than how it started.[85] One of the ways a lack of a hybrid work environment policy affects construction sites is through the different cooling measures needed to address temperature on a site that has both indoor and outdoor elements.[86] Additionally, in hybrid environments, the loss of air-conditioning can occur where one of four walls is open exposing the indoor environment to the outside, which the rule does not take into account.[87] Another common hybrid environment found in the construction industry are worksites that have piping on three sides and a roof to protect from natural elements, but not four walls – the current proposed rule has no way to determine whether this is an indoor or outdoor working environment.[88]

A construction worksite cannot be defined as simply an "indoor" or "outdoor" worksite.[89] If required to abide by a rule rigidly designating indoor and outdoor environments, the application of this rule to the hybrid environment of construction worksites will sow confusion, make compliance unnecessarily complex, lead to inconsistent implementation, and even weaken employer efforts to prevent heat injury and illness for employees.[90] Because hybrid work environments require employees to move fluidly between indoor and outdoor settings throughout the day and at a moment's notice, a performance-based standard is needed to allow employees to use their discretion to reduce heat illness in hybrid work environments.[91]

IV. Responses to Information and Arguments Raised During Hearing.

As stated above, the CISC is not simply reiterating its pre-hearing comments or hearing testimony in this submission. The CISC's overall view of the rulemaking record is that the record – examined as a whole – supports the arguments made by the CISC in its pre-hearing comments and hearing testimony. However, there was some testimony provided during the informal public hearing that the CISC wishes to respond to in this submission, as the arguments or information provided are not reflective of the CISC's views of the proposed rule. This testimony is discussed below.

A. Nevada Heat Rule Should Not be the Basis for a Federal Standard.

[83] *See* Transcript at 77:11-22, 78:1-5 (June 18, 2025).
[84] *See* Transcript at 110:5-6 (June 16, 2025); *see* Transcript at 109:1-10 (June 25, 2025).
[85] *See* Transcript at 77:11-22, 78:1-5 (June 18, 2025).
[86] *See* Transcript at 49:18-50:21, 52:21-54:11 (June 24, 2025).
[87] *See* Transcript at 25:11-17 (June 23, 2025).
[88] *See* Transcript at 128:11-129:8 (June 23, 2025).
[89] *See* Transcript at 128:11-129:8 (June 23, 2025).
[90] *See* Transcript at 116:1-12 (June 23, 2025).
[91] *See* Transcript at 96:17-20 (June 24, 2025).

During the informal public hearing, a number of stakeholders testified about Nevada's recently adopted heat regulation. Indeed, stakeholders asked OSHA to take the approach used by Nevada in its own heat standard.[92] For the reasons set forth below, CISC strongly cautions OSHA against adopting one state's standard, which would then be applicable to the remaining 49 states and territories.

First, taking that approach means that OSHA would cede its obligation to develop a nationwide standard to the dictates of one state and then make it applicable to the remaining 49 states and territories. The CISC submits that OSHA does not have the authority to skip its regulatory obligations in such a manner. Next, were OSHA to take this approach it will have to substantially revise the proposed regulatory text from the NPRM. This would not meet the requirements of the Administrative Procedure Act ("APA") because a wholesale revision at this stage of the rulemaking would not comport with the public notice and comment provisions of the APA. Only a limited number of participants engaged with Nevada during the development of its regulation. To adopt something developed for only one state, with public participation and comments limited to businesses and stakeholders in that state, does not comply with the due process requirements in the APA. It would also ignore all the regional differences across the United States, with their varied climates.[93]

On its face, the Nevada OSHA heat rule presents a straightforward performance-oriented approach to addressing heat in the workplace. And many stakeholders who participated in the informal public hearing testified about the ease of implementing such a regulation. However, there are Nevada-specific requirements baked into Nevada's heat rule that stakeholders may have overlooked because the requirements are not explicitly set out in that regulatory text. This serves as a reminder why OSHA needs to implement a workable standard that is clear and straightforward, while providing all employers needed flexibility when implementing safety protocols at their workplaces.

i. Nevada Already Requires a Written Safety Plan.

OSHA's proposed heat rule requires that employers with 10 or more employees must develop a written heat injury and illness plans. While the complexity of the proposed rule's requirements for heat plans will functionally require employers with fewer than 10 employees to maintain a written plan, these employers are not explicitly required to maintain a written plan. To the extent that OSHA intends to offer small employers flexibility on any requirement for written plans, Nevada's standard should not serve as a model. Unrelated to implementation of a heat injury and illness prevention plan, Nevada already requires employers with more than 10 employees to have a written safety plan. Nevada's new heat regulation requires employers to incorporate their heat

[92] *See, e.g.,* Transcript of Informal Public Hearing at 74:16-20, 75:19 – 76:3, 88:4-9; 96:17 – 97:12, Occupational Safety and Health Administration, Informal Public Hearing June 16, 2025 (hereafter "Transcript"); Transcript at 15:8-20, 18:6-15; 22:4-12; 90:15-21; 274:16-21; 278:8-18 (June 17, 2025); Transcript at 115:13-19 (June 25, 2025); *but see,* Transcript 66:15-18 (arguing Nevada's standard is "not as protective.") (June 26, 2025).

[93] The CISC opposes using any single state's heat injury and illness standard as a model for revisions OSHA may be contemplating following the informal public hearing. While there are currently nine states with their own heat injury and illness prevention standards, these standards do not all transfer to the remaining states, for a variety of reasons. CISC further maintains that if OSHA is going to move forward with a federal heat standard, relying on only a select few state plans for regulatory language does not adequately address concerns of affected stakeholders and sets a highly questionable rulemaking precedent going forward.

plan into their existing written safety plan. There is no grace period for implementation for Nevada employers.

ii. Nevada Requires Job Hazard Analyses Rather Than Heat Triggers.

During the informal public hearing, many stakeholders supported Nevada's use of a job hazard analysis ("JHA") rather than having arbitrary temperature triggers in the standard.[94] Under Section 5 of the Nevada standard, employers are required to conduct a JHA assessing working conditions that may cause occupational exposure to heat illness. Employers must perform a JHA both before their employee performs a job task for the first time, and whenever the job task the employee performs materially changes.

Nevada further requires the written JHA include all of the following: (a) A list of all job classifications of the employer in which the majority of employees in those classifications have occupational exposure to heat illness for more than 30 minutes of any 60-minute period, not including breaks; and (b) A list of all tasks and procedures, or groups of closely related tasks and procedures, performed by employees of the employer: (1) In which occupational exposure to heat illness may occur; and (2) Which are performed by employees in job classifications that are included in the list required by paragraph (a)." Nev. Rev. Stat. § 618.5 (2025). Further, the employer must conduct the JHA without considering whether an employee in the job being analyzed would have access to water, rest or shade. Nev. Rev. Stat. § 618.5.3 (2025).

There are several practical challenges posed by a new requirement to conduct daily JHAs, especially in the construction industry. Construction sites are dynamic environments, and while some tasks are repetitive, others evolve rapidly. The administrative burden of preparing, reviewing, and documenting daily JHAs can strain supervisory resources. This may divert attention from other critical safety oversight responsibilities, such as on-the-ground hazard mitigation and real-time coaching. Moreover, when JHAs become repetitive, especially for routine tasks, there is a risk that they may be perceived as a formality rather than a meaningful safety exercise. This can lead to reduced engagement and attentiveness from employees, undermining the very purpose of the analysis.

iii. Existing Nevada Regulations Already Mandate Rest Breaks.

One stakeholder commented that under Nevada's approach, mandatory rest breaks are not required, and that OSHA should follow Nevada's approach allowing employers to decide how to mitigate heat illness, such as by using a JHA.[95] CISC respectfully disagrees with that characterization. Nevada does, in fact, require mandatory breaks. These requirements are set out in its other regulations under the purview of the state's Office of the Labor Commissioner. This is an important distinction many stakeholders may not have been aware of when analyzing the four corners of Nevada's heat rule. While the state's newly adopted heat rule does not specifically require that employees be permitted to take rest breaks, other sections of Nevada's standards do. Accordingly, one cannot read the Nevada heat rule as a standalone document. Instead, stakeholders must read through other relevant state-specific regulations to have a comprehensive understanding

[94] *See, e.g.,* Transcript at 74:16-20; 96:17 – 97:12; 98:11-14 (June 16, 2025).
[95] Transcript at 22:4-12 (June 17, 2025).

of the compliance requirements. Herein lies but one of the CISC's concerns with adopting a single state's heat plan without fully considering other relevant state-specific requirements.

iv. The Nevada Division of Industrial Relations Also Relies on Federal OSHA Programs for Enforcement.

With respect to enforcement mechanisms, the Nevada Division of Industrial Relations ("DIR") also looks to Federal OSHA's National Emphasis Program on Outdoor and Indoor Heat-Related Hazards[96] ("NEP") when enforcing their heat standard. Thus, employers in Nevada are required to follow their state regulations and OSHA's Heat NEP, which does not line up exactly with the state's regulation. This creates additional burdens for employers in Nevada because they now must comply with the state's heat regulation, other regulations issued by DIR, and OSHA's NEP. Such an approach at the federal level is needlessly complicated.

For the foregoing reasons, CISC urges OSHA to reject the invitation to adopt Nevada's heat regulation. Doing so abdicates the agency's own responsibility to develop a rule that applies nationwide. Moreover, a quick "fix" such as this does not resolve the numerous concerns the CISC has with the NPRM – the fact that one size does not fit all, that the agency ignored repeated requests from the construction industry to develop an industry-specific standard, and that the rule is needlessly complicated, particularly for small businesses.

B. Use of a "Table 1" Approach as OSHA Used in its Silica Rulemaking Would be Misplaced in a Federal Heat Rule.

During the informal public hearing on the pending heat standard, no stakeholders requested that OSHA consider using a "Table 1" approach when finalizing its proposed heat standard. That said, CISC subsequently learned that stakeholders, across various industries, have discussed a "Table 1" approach for OSHA's proposed heat standard.[97] In OSHA's Respirable Crystalline Silica Standard for Construction, *see, e.g.,* 29 C.F.R. § 1926.1153, OSHA provided an option for using Table 1, which was one of the lynchpins of the proposed rule for construction. Many viewed this option as a "safe harbor" when OSHA first proposed it during the rulemaking process, with the understanding that employers who follow those options correctly would be deemed in compliance with the regulation. But that is not actually the case. In the final crystalline silica rule, following Table 1 only alleviates their responsibility of conducting monitoring on permissible exposure limits ("PEL") to crystalline silica. A construction employer opting to use Table 1 is still required to ensure that all exposures are below the PEL.

Some stakeholders seem to suggest that OSHA should adopt a similar "Table 1" approach in its proposed heat standard. To do that, stakeholders appear to suggest that OSHA identify a baseline of requirements—tasks, activities, rest breaks, access to water, temperature, training, etc.—with commensurate compliance requirements that, when followed correctly, would demonstrate

[96] National Emphasis Program - Outdoor and Indoor Heat-Related Hazards, U.S. Department of Labor, Occupational Safety and Health Administration, Directive No. CPL 03-00-024 (effective April 8, 2024; extended to April 8, 2026) (last visited Sept. 23, 2025).

[97] Following the conclusion of OSHA's informal public hearings on the heat standard, the concept of a "Table 1" approach was discussed by various stakeholders over the course of several meetings hosted by the Small Business Administration's Office of Advocacy, OSHA/MSHA Roundtable discussions.

compliance with the heat standard. By doing so, a Table 1 for heat would seemingly not require employers to adopt additional measures. For the following reasons, the CISC urges OSHA to reject calls to implement a Table 1 standard for heat.

i. A "Table 1" Standard is a Floor for Compliance.

CISC has significant concerns with a Table 1 standard in any final heat standard. Were OSHA to adopt a Table 1 approach in its final heat standard, such an approach would become a floor for compliance, instead of providing the much-needed regulatory flexibility stakeholders, including the CISC, have been calling for since OSHA first proposed a heat standard in 2021.[98]

Rather than allowing flexibility for employers to determine what best meets the needs in their workplaces and for their employees, using a generic one sized approach in a Table 1 for heat would mean that regardless of the workplace-specific needs, employers would be bound by any requirements identified in a Table 1 for heat, whether it be work practices, engineering controls, or the like. This essentially defines the "floor" for compliance rather than having options available for employers to assess hazards and evaluate their own workplaces. Such an approach removes the needed flexibility that the CISC has continually called for during this rulemaking.

Moreover, it has been suggested that the Table 1 elements would include all the provisions already in the NPRM. CISC members have urged the Agency to allow for flexibility by focusing a heat standard on basic requirements that cover the provision of water, rest, shade, and training. Additionally, the CISC and others who testified during the informal public hearing raised concerns that there are many unknown variables with how heat impacts employees individually based on underlying health conditions and risk factors of which the employer may be unaware[99] (e.g., age, fitness, medical conditions, consuming alcohol, taking prescription medications, drug use, etc.). Setting compliance requirements in a Table 1 for heat based on the NPRM would not address these concerns. Just because someone suffers a heat-related illness does not mean the employer failed to take appropriate measures to protect the employee. A baseline Table 1 for heat removes the needed flexibility to address business-specific needs.

Small businesses, which dominate the construction industry, may be stuck with trying to use a Table 1 approach to avoid additional costs involved with developing their own plans, hiring a heat safety coordinator, training employees, providing extra training, and implementing all of these requirements. These small businesses would be forced to demonstrate compliance with everything listed in a Table 1 for heat, even if not all those requirements would necessarily apply to their workplaces.

While OSHA may argue all of this is speculative, since the Agency has not actually proposed a Table 1 for heat, the above examples illustrate just a few of the potential issues with doing so at

[98] Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings, Advanced Notice of Proposed Rulemaking, Occupational Safety and Health Administration, 86 Fed. Reg. 59,309 (Oct. 27, 2021) ("ANPRM").

[99] Transcript at 106:9-18; 113:10-22, 114:1-13 (June 18, 2025); Transcript at 180:8-17; 239:15-21; 240:5-7 (June 24, 2025); Transcript at 24:12-20; 49:7-14 (July 2, 2025); *see also,* Transcript at 114:11-19 (July 2, 2025) (noting reliance on temperature alone is less about occupational safety and more about public health: "When the standard is triggered by a single environmental factor without regard to duration, workload, or actual exposure, it loses its occupational focus and it creates requirements that are not commensurate with risk.").

this late stage in the rulemaking process. Particularly so when stakeholders have not had an opportunity analyze the accompanying regulatory text such a proposal would cover.

ii. OSHA has not yet Proposed Revisions to its Silica Table 1 Standard, Illustrating Problems if the Agency Adopts a Similar Approach to Heat.

Another concern the CISC has involves compliance difficulties that developed from the Table 1 applicable to crystalline silica in construction. In the context of the crystalline silica standard for construction, OSHA provided a Table 1 option. There are inherent problems with that table, which the construction industry has repeatedly encouraged OSHA to revise to clarify misunderstandings. The crystalline silica standard has been in effect for the construction industry since 2017, yet the Agency still has not addressed industry concerns with Table 1. The CISC is concerned something similar would occur with any Table 1 standard for the pending heat standard. Once a regulation is finalized and fully in effect, OSHA has no incentive to go back and correct any mistakes that may become apparent after a standard has gone into effect and enforcement begins. This leaves the regulated community with uncertainty and inconsistent enforcement. It does a disservice to everyone.

Accordingly, the CISC urges OSHA to reject such an approach in any final heat standard.

C. Mandating Wearable Technologies Is an Infeasible Approach to Monitor Heat Stress on Construction Worksites.

In the CISC's pre-hearing written comments, the Coalition emphasized the need to provide small businesses with flexible, feasible, and financially sustainable requirements when developing a regulation that effectively addresses heat-related injury and illnesses in the construction industry.

During the public hearing on the proposed rule, several stakeholders testified about the need for flexibility regarding the proposed standard's employee monitoring requirements. A few stakeholders also testified in support of the use of wearable technology to monitor employee heat stress.[100] While the CISC recognizes that monitoring employees exposed to heat hazards may, in some instances, help to prevent heat strain from progressing to a more serious heat-related illness, the Coalition strongly opposes that OSHA mandate individual-level biomonitoring using wearable technologies.

There are several reasons for CISC's opposition to mandating such an approach. First, nowhere in the NPRM does OSHA discuss the use of wearable technologies, nor does the Agency propose regulatory text to address such use. Next, although wearable technologies may be a feasible option to monitor employee heat stress in some occupational settings, such an idea is wholly infeasible in the construction industry. Construction sites are inherently rugged and unpredictable. Wearable devices are susceptible to damage from dust, moisture, and physical impact, which can compromise their functionality and lead to unreliable data.

Moreover, mandating that all employees be equipped with wearable technology to monitor heat stress would place an enormous financial burden on employers, especially on the small business

[100] *See, e.g.,* Transcript at 72:7-9, 258: 4-8 (June 23, 2025); Transcript at 98: 10-20, 99: 17-12, 100:1-10 (June 27, 2025).

who are the foundation of the construction industry.[101] Deploying wearable technology at scale involves substantial upfront investment in devices, software platforms, and data management systems. Additionally, ongoing costs related to maintenance, updates, and replacements must be considered.

The cost of wearable technology is not limited to purchasing the wearable technology, which itself is tremendous on a construction worksite, but there would be significant administrative costs on employers as well. Employers would need to provide additional training to supervisors responsible for conducting the monitoring and evaluating the data gleaned from wearable technologies. These supervisors would then be tasked with additional responsibilities, potentially to the detriment of their other safety-related responsibilities. Supervisors would need to constantly monitor the data obtained from wearable technology in the event it indicates an employee is experiencing heat stress. In addition, supervisors would have to distribute the wearables at the beginning of each shift, collect this equipment at the end of the shift, and ensure that the technology works properly throughout the shift.

If wearable technologies are required as part of OSHA's heat standard to monitor heat stress, it would present complex compliance challenges on a construction worksite stemming from the Agency's Multi-Employer Citation Policy. Pursuant to this policy, a general contractor on a construction worksite could be cited for another employer's failure to provide their employees with wearable technology even if the general contractor itself complied with the standard. To avoid a citation under this policy, a general contractor would need to demonstrate it had exercised reasonable care to prevent and detect violations of the standard. In other words, the general contractor would be tasked with ensuring compliance on the worksite by verifying that every subcontractor's employee on the worksite wears the mandatory technology. Respectfully, OSHA does not possess the statutory authority to require general contractors to monitor health and safety data collected and/or used by a subcontractor monitoring their own employees.[102]

Accordingly, the CISC strongly encourages OSHA to avoid mandating, at this late stage in the rulemaking process, the use of wearable technology in its final heat standard.

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[101] Indeed, two small entity representatives (SERs) from the construction industry who participated in OSHA's Small Business Advocacy Review (SBAR) Panel in August 2023 generally opposed the mandatory use of wearable technologies. *See* Occupational Safety & Health Admin., *Report of the Small Business Advocacy Review Panel on OSHA's Potential Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings* at 207, FN 12 (Dec. 3, 2023) (available at https://www.osha.gov/sites/default/files/Heat-SBREFA-Panel-Report-Full.pdf) (last visited Oct. 20, 2025) (hereinafter "SBREFA Panel Report"). These SERs noted that the costs associated with the use of wearable technologies "would be tremendous" and raised "serious concerns regarding confidentiality … with any requirement to gather and monitor biological data." *Id.*

[102] There are still many questions surrounding data privacy, health equity of data collected, ethical issues surrounding use of the data, storage, and inadvertent disclosure of personally identifiable information, to name just a few. *See, e.g.,* Canali S, Schiaffonati V, Aliverti A. Challenges and recommendations for wearable devices in digital health: Data quality, interoperability, health equity, fairness. PLOS Digit Health. 2022 Oct 13;1(10):e0000104. doi: 10.1371/journal.pdig.0000104. PMID: 36812619; PMCID: PMC9931360 (available at Challenges and recommendations for wearable devices in digital health: Data quality, interoperability, health equity, fairness - PMC) ("Recent data breaches underscore these vulnerabilities: a security incident exposed over 61 million fitness tracker records, and a breach involving UnitedHealth compromised the health information of 100 million individuals.") (last visited Oct. 20, 2025).

D. The Proposed Rule's Requirements May Not Be Feasible and Can Create Additional Hazards on Construction Worksites.

The prescriptive requirements in the proposed rule can often create more hazards and actually decrease safety as a whole, especially in the construction industry where worksites are already in flux as construction progresses.[103] While one stakeholder suggested that OSHA's proposed heat requirements do not create any new hazards,[104] the CISC respectfully disagrees with such an overbroad, factually incorrect assertion.

Pursuant to OSHA's proposed heat standard, employers must provide a break area readily accessible to the worksite that has artificial shade or natural shade if the break area is open to the outside air. Various stakeholder testimony during the public hearing on the proposed heat standard suggested that the use of pop-up tents or pavilions are a feasible means of creating artificial shade across the construction industry.[105] Many construction tasks—particularly those involving heavy equipment, vertical work, or continuous movement across open areas—do not allow for fixed or semi-fixed shade structures. These tasks often require unobstructed access to work zones, clear lines of sight, and freedom of movement for both employees and machinery. The presence of temporary shade structures can impede workflow, reduce visibility, and create logistical challenges. For instance, many framing contractors or roofers cannot simply set up a pop-up tent on a roof to provide artificial shade. Likewise, certain construction sites can stretch for several miles. Mandating artificial shade structures on these types of worksites would require that several dozen pop-up tents be erected so employees have ready access to shade.

In addition to operational limitations, pop-up tents and similar structures can pose significant safety hazards. Pop-up tents are lightweight structures that if not properly secured, are susceptible to being dislodged or overturned by wind causing a potential struck-by hazard to other employees on the site. Even when these pop-up tents are properly secured using support poles, tie-downs, or guy lines, these can create tripping hazards, especially in high-traffic areas. On road construction worksites, pop-up tents can create visual obstructions for drivers who are passing through the work zone, which could then expose employees to a struck-by hazard from a moving vehicle.

The potential hazards are not limited to pop-up tents and other forms of artificial shade. There are also hazards in the literal interpretation of the proposed rule, especially if work is being performed on a roof or at heights.[106] Requiring water to be "readily accessible" can become a struck-by hazard to employees working below if the water bottles were to fall from a height.[107] Requiring these employees to keep water attached to their person is also a hazard in that it may interfere with their fall arrest systems.[108] Employees who have to ascend and descend a ladder every time they need water or to take a break creates a greater hazard for these individuals.[109]

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[103] *See* Transcript at 184:20-185:2, 186:8-16 (June 24, 2025).
[104] *See, e.g.,* Transcript at 177: 4-22, 178: 1-5 (June 30, 2025).
[105] *See, e.g.,* Transcript at 101: 18-22, 102: 1-11 (June 20, 2025); 222: 9-14 (June 24, 2025); 316: 18-21 (June 25, 2025).
[106] *See* Transcript at 96:1-10, 231:4-21, 236:1-11 (June 18, 2025).
[107] *See* Transcript at 96:1-10 (June 18, 2025).
[108] *See* Transcript at 96:11-21 (June 18, 2025).
[109] *See* Transcript at 96:11-21, 232:2-8 (June 18, 2025).

While the CISC understands OSHA's intent to mitigate heat exposure, it is important to recognize that many of the proposed requirements, such as artificial shade structures, are often impractical on certain construction worksites and may introduce additional safety risks depending on the nature of the work and site conditions.

E. Construction Schedules Cannot Always Be Modified to Avoid High Temperatures.

During the informal public hearing, there was testimony suggesting that employers could comply with the proposed heat standard's varied requirements by simply starting work earlier in the day to avoid high temperatures.[110] Such comments ignore the realities of construction work around the country. The construction industry continuously strives to protect the health and safety of its employees in all aspects of operations. While many construction employers will modify constructive schedules to avoid work during periods of high heat, the CISC must emphasize that this is not always possible. Several factors contribute to this limitation.

Adjusting work to early morning or evenings is not always feasible due to noise ordinances, homeowner association rules, or safety concerns, such as working in limited light. Even in areas where performing construction work early in the morning or in the evenings is permissible, there have been repeated instances of residents pushing back against the work.[111] In addition, shifting construction schedules can impact employee availability, especially when they rely on public transportation, childcare, or other personal commitments tied to their standard working hours.

In addition to these factors, many construction projects are governed by strict timelines and contractual milestones. Even if employees are available to work during cooler hours and the work can be performed during early morning or evening hours, the cooler hours may simply be too short to maintain productivity and meet the contractual deadlines. The resulting delays can have cascading effects on delivery dates, budget allocations, and coordination with other trades or subcontractors. Furthermore, work often must be scheduled around availability of municipal inspections and permits, which are not always flexible. Rescheduling these inspections outside of periods of high heat can result in significant delays and added costs. Finally, certain construction activities depend on the availability of materials, equipment, or specialized labor. These resources are often scheduled well in advance and may not be easily reallocated if construction schedules are modified to avoid work during periods of high heat.

Despite these challenges, the construction industry is committed to protecting its employees from the effects of hazardous heat. The CISC explained the proactive measures that the construction industry has taken in its pre-hearing written submissions. The trade associations that make up the

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[110] *See, e.g.*, Transcript at 157: 7-11 (June 30, 2025) (stating that "Most OSHA standards are programmatic and give employers a lot of flexibility on how to meet those objections. For example, employers could comply with the heat stress standard by starting work earlier in the day and avoiding most of the requirements.").

[111] *See* Passoth, Kim, *New Nevada law allows construction to begin as early as 5 a.m.*, FOX5, (July 22, 2025 at 2:14 AM) (https://www.fox5vegas.com/2025/07/22/new-nevada-law-allows-construction-begin-early-5-am/); Roussey, Tom, *Bethesda residents losing sleep as Purple Line builders look to extend noise waiver*, 7NEWS, (Oct. 13, 2025 at 6:37 PM) (https://wjla.com/news/local/bethesda-residents-losing-sleep-as-purple-line-builders-look-to-extend-noise-waiver); Seward, Larry, *Downtown Miami construction sparks noise, traffic complaints; city pauses work on JEM residences*, CBS MIAMI, (October 14, 2025 at 2:05 PM) (https://www.cbsnews.com/miami/news/downtown-miami-construction-sparks-noise-traffic-complaints-city-pauses-work-on-jem-residences/).

CISC and their members conduct effective safety training on a frequent and regular basis on various topics, including heat stress, to empower their employees with critical information about common safety and health hazards on the job. CISC members have also developed a variety of toolkits, training, and other materials addressing heat stress hazards in the construction industry. While all different, the materials embody simplicity, focus on the core concepts of water, rest, shade, and training, and are presented in formats that are easy to understand and resonate with the construction industry.

F. Mandatory Rest Breaks Will Undoubtedly Impact the Construction Industry.

One area of OSHA's proposed heat standard that received significant attention during the informal public hearing pertains to mandatory rest breaks. Several stakeholders from the construction industry explained how mandatory rest breaks can negatively impact construction work.[112] Stakeholders from other industries likewise opposed the proposed heat standard's mandatory rest break requirement.[113] Yet, one stakeholder suggested that mandatory rest breaks do not create a "major problem" for the construction industry.[114] The CISC feels this statement is simply not reflective of the unintended consequences that mandatory rest breaks will create for the construction industry.

Construction projects are highly coordinated efforts involving multiple trades working in sequence. Mandatory breaks, especially if rigidly timed, can interrupt this flow, causing delays and inefficiencies. For instance, one construction industry stakeholder explained that an entire crew cannot take a mandatory break during a concrete pour without impacting the quality of the pour.[115] Instead, flexibility is needed to ensure the continuity of the pour.[116] Ironically, mandatory breaks may introduce new safety risks on a construction site. For example, stopping work mid-task can create hazardous conditions. It can also reduce the productive hours on a jobsite during the day, leading to work being performed during low light hours when visibility may be diminished. Construction safety is often best maintained through task completion and proper planning, rather than arbitrary interruptions.

Endlessly rotating construction employees through tasks to satisfy the proposed heat standard's mandatory break requirement, as the above stakeholder suggested, fails to recognize the labor shortage impacting the construction industry, along with many other industries. There is not an infinite supply of employees who can be rotated in and out of a specific task. Employees must be specially trained for the task. This takes time so that employees learn to identify and mitigate risks and ensure they know how to use equipment safely and follow protocols. Moreover, if an employer does not have a roster of trained employees who can fill-in during a mandatory break, it would not

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[112] *See, e.g.*, Transcript at 59: 6-19 (June 18, 2025) (stating that mandatory rest breaks are "impractical and would be exceedingly difficult to manage on construction sites due to time and schedule-based activity interdependencies."); Transcript at 207: 8-22 (June 18, 2025) (explaining how mandatory rest breaks, while well-intentioned, can create a greater fall hazard for those employers in the roofing industry).
[113] *See, e.g.*, Transcript at 231: 4-22, 232: 1-11, 233: 5-13 (June 18, 2025) (discussing how mandatory rest breaks create "an unworkable burden" for elevated tower technicians, and increases fall risks, fatigue, and repetitive stress injuries).
[114] *See* Transcript at 178: 12-22 (June 30, 2025).
[115] *See* Transcript at 20:17-22, 21: 1-10 (June 18, 2025).
[116] *Id*.

be able to use other trained employees until those employees have completed the proposed acclimatization requirements.

Unlike other industries, the construction industry is heavily influenced by external factors such as weather, daylight hours, and site access. These constraints already limit working time, and additional mandated breaks could further compress productive hours, especially during critical phases of a project. Accordingly, the CISC strongly encourages OSHA to consider flexible, industry-specific approaches that allow for rest without compromising the unique operational demands of construction.

G. The Wet Bulb Globe Temperature is an Infeasible Means of Temperature Monitoring Across the Construction Industry.

The proposed heat standard permits employers to monitor heat conditions at outdoor worksites using either the heat index or the wet bulb globe temperature ("WBGT"). During the informal public hearing, however, one stakeholder suggested that WBGT should be the default method to measure heat conditions.[117] While WBGT is a valuable tool in certain controlled environments, it presents several limitations that make it an infeasible tool for much of the construction industry.

WBGT is a seldom used tool amongst small businesses to monitor heat conditions. In the *Report of the Small Business Advocacy Review Panel on OSHA's Potential Standard for Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings*, a majority of SERs reported using local weather forecasts or the OSHA-NIOSH Heat Safety Tool App to monitor worksite temperatures, while less than 5% of SERs indicated that they use WGBT to track worksite conditions.[118] Accordingly, the Panel recommended that "OSHA allow flexibility in monitoring methods and not mandate a single method that employers must use to measure heat in their workplace or on their worksite."[119]

The CISC supports this recommendation. Unlike standard temperature and humidity readings, WBGT data is not readily available from public weather sources and must be measured on-site. However, the equipment needed to measure WBGT is not only expensive, but also complex. WBGT measurement requires specialized equipment that accounts for ambient temperature, humidity, wind speed, barometric pressure, and solar radiation. The equipment requires regular calibration and maintenance to ensure accuracy—posing logistical and financial challenges for small business who may need to deploy this equipment across multiple job sites.

Construction sites are dynamic environments with varying microclimates influenced by terrain, structures, and equipment. WBGT readings can fluctuate significantly depending on location and time of day, making it difficult to obtain consistent and representative data without deploying multiple sensors across the site. Given these factors, the CISC encourages OSHA to include more practical methods for monitoring heat conditions—such as ambient temperature and heat index.

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[117] *See* Transcript at 201:3-14 (June 16, 2025) (stating that "I think [the wet blub globe temperature] is feasible for many. And perhaps it could be a requirement which some employers could be excused from if they could demonstrate that it was not feasible for them…").
[118] *See* SBREFA Panel Report at 21 (last visited October 20, 2025).
[119] *See* SBREFA Panel Report at 52 (last visited October 20, 2025).

H. The Protections Afforded by the OSH Act Along with the Efforts of the Construction Industry Provide Effective Reporting Mechanisms.

During the informal public hearing, a few stakeholders raised concerns that heat illness is underreported in the construction industry.[120] While such concerns deserve continued attention, the CISC feels it is important to recognize the substantial efforts and systems already in place that ensure accurate and timely reporting of heat-related illness—particularly the protections afforded by the Occupational Safety and Health ("OSH") Act.

The OSH Act's anti-retaliation provisions play a critical role in ensuring that employees feel safe and empowered to report heat-related illnesses and unsafe conditions without fear of reprisal. These protections are foundational to fostering a culture of transparency and accountability on construction sites. When employees are confident that their concerns will be heard and addressed appropriately, reporting becomes more consistent and reliable.

In addition to these legal protections, the Coalition and its members have implemented robust safety protocols, including mandatory reporting procedures, real-time monitoring of environmental conditions, and comprehensive training programs. In unionized environments, union stewards and joint labor-management committees further reinforce reporting compliance. These measures have led to improved awareness and documentation of heat-related events on job sites, and exemplify why training is crucial to any regulatory approach addressing hazardous heat.

The CISC recognizes that continuous improvement is always a priority, but it is essential to acknowledge the effectiveness of current reporting mechanisms and the legal protections that underpin them.

V. Conclusion.

The CISC appreciates OSHA's continued engagement in developing a proposed heat standard to protect workers from exposures to heat injuries and illnesses. However, the CISC remains concerned that OSHA has not fully addressed stakeholder concerns raised during the pre-hearing comment period and based on its questions to stakeholders during the hearing, may have further missed an opportunity to adopt an industry-specific approach for construction.

As the CISC and other stakeholders have reiterated throughout the rulemaking process, a regulatory approach – if adopted – must be a flexible, performance-based standard. The proposed one-size-fits-all standard is needlessly prescriptive and does not allow for the needed flexibility for the construction industry. Accordingly, for the foregoing reasons outlined in this post-hearing brief, its testimony during the informal public hearing, and its pre-hearing submissions, the CISC reiterates it request that OSHA withdraw the rule as proposed and develop a construction-specific heat injury and illness standard addressing the concerns raised by the CISC and other construction industry stakeholders.

[120] *See, e.g.,* Transcript at 91: 8-18, 108: 11-16 (June 30, 2025).