

## Safety Practices Reported Among Construction Contractors

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### OVERVIEW

Construction workers have many tasks that involve [hazards and exposures](#), such as falls, machine hazards (e.g., unguarded, struck-by injuries), electrical hazards, physical work environments (e.g., [heat](#)), and chemicals (e.g., silica, asbestos). A range of interventions, such as prevention through design, training, providing *personal protective equipment (PPE)* and conducting *pre-task planning (PTP)*, can reduce the risk of hazards and exposures to improve the safety and health of construction workers. This Data Bulletin examines reported safety practices among construction contractors, including interventions that aim to reduce the risk of hazards and exposures and therefore improve the health and safety of construction workers. Safety practices were examined by *union and trade association status*. Data come from the 2023 Safety Management in the Construction Industry Survey, a survey that CPWR has collaborated on with [Dodge Construction Network](#) since 2012. This year's survey, the sixth in the series, was conducted from May to June 2023 with 298 respondents, including 145 specialty trade contractors and 153 *general contractors*. It targeted PTP, PPE, strategies to reduce heat-related injuries, mentoring, training, safety communication, technology use, mental health, and substance use. Percentages shown may not sum to 100% due to rounding. The sample size varies for each question/chart, as respondents may have only seen a question based on their response to a previous question.



### THIS ISSUE

The issue examines reported safety practices among construction contractors—including pre-task planning, personal protective equipment, and strategies to reduce heat exposure—by union and trade association status.

### KEY FINDINGS

**Of contractors who employed only non-union workers, 44.0% conducted pre-task planning (PTP) “sometimes” when it was deemed necessary.**

Chart 2

**Union contractors (93.5%) were more likely to provide individualized personal protective equipment (PPE) than firms that are non-union (75.9%) or both union and non-union (85.1%).**

Chart 5

**Over a third (36.4%) of contractors who employed both union and non-union workers agreed that PPE was one-size fits all and there was no need for individualized PPE.**

Chart 7

**Over a quarter (28.4%) of contractors who employed both union and non-union workers reported heat-related injuries in the last three years.**

Chart 8

**Members of trade associations reported a higher percentage of using emerging technology to improve safety compared to non-members (64.4% versus 46.4%, respectively).**

Chart 12

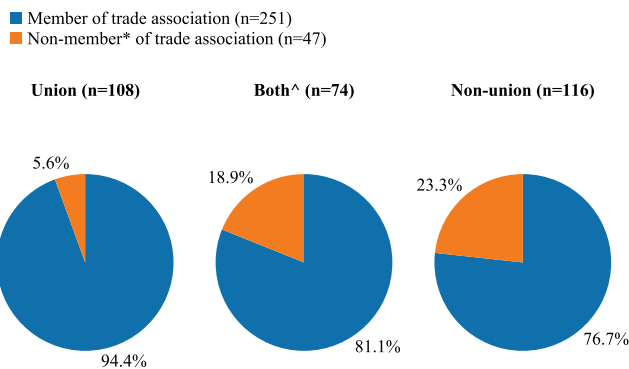
### NEXT DATA BULLETIN

Apprenticeships in Construction

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The 298 firms that responded were examined by union and trade association status (chart 1). A majority of respondents employed union workers, with 36.2% only employing union workers and 24.8% employing both union and non-union workers. A majority of contractors were members of trade associations (84.2%). Contractors that employed union workers had the highest percentage of being trade association members (94.4%) followed by contractors that employed both union and non-union (81.1%) and contractors that employed non-union workers (76.7%). The survey respondents are contractors and not representative of individual workers, which should be noted for all findings below. Overall, 13.4% of wage-and-salary construction workers were members of a union in 2021. Information on membership for workers is available on our [Union Membership on Construction](#) Dashboard.

### 1. Survey respondents by union and trade association status



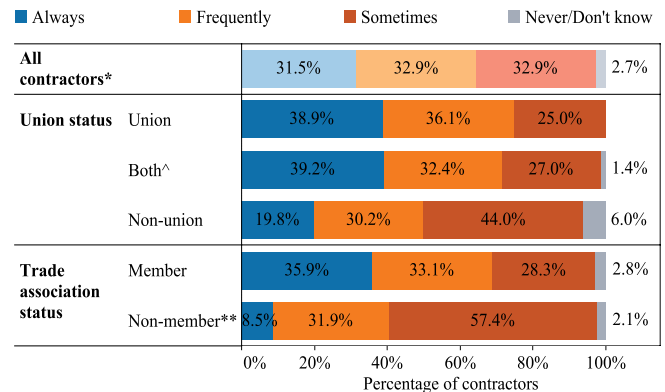
Source: 2023 Safety Management in the Construction Industry Survey.

\*Category includes non-members and don't know.

^Both includes contractors who employ union and non-union workers.

PTP, a process performed before each task to discuss the task, hazards, and controlling hazards was then examined by union and trade association status (chart 2). Over one-third of contractors that employed both union and non-union workers (39.2%) and only union workers (38.9%) reported always conducting PTP. While 19.8% of contractors that employed only non-union workers reported always conducting PTP, these contractors had the highest percentage of sometimes conducting it (44.0%). By trade association status, members were four times more likely to always conduct PTP than non-members (35.9% and 8.5%, respectively). Those that were not members of a trade association were twice as likely to “sometimes” conduct PTP when they deemed it necessary compared to members (57.4% and 28.3%, respectively).

### 2. Reported pre-task planning by union and trade association status



Source: 2023 Safety Management in the Construction Industry Survey.

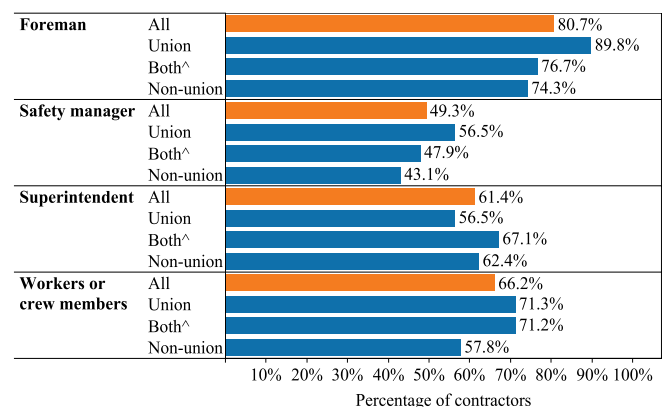
\*Lighter shades of colors were used for “All contractors” category.

^Both includes contractors who employ union and non-union workers.

\*\*Category includes non-members and don't know.

The type of employees involved in PTP were then analyzed by union status (chart 3). Overall, foremen and crew members were most likely to be involved (80.7% and 66.2%, respectively). Involvement varied by union status, with contractors employing union workers having the highest reported percentages of foremen and crew members being involved in PTP (89.8% and 71.3%, respectively). Contractors that employed both union and non-union workers had the highest percentages of superintendents being involved (67.1%).

### 3. Type of employee\* involved in pre-task planning by union status



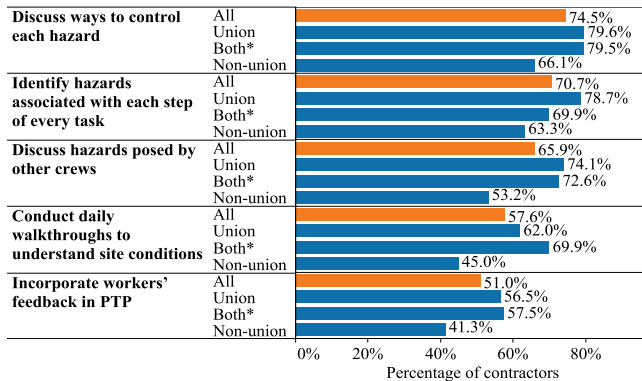
Source: 2023 Safety Management in the Construction Industry Survey.

\*Other, free response, category excluded due to low frequency.

^Both includes contractors who employ union and non-union workers.

The top five safety practices most often used on jobsites were then analyzed by union status (chart 4). The most commonly reported safety practice was discussing ways to control each hazard (74.5%). Contractors employing union workers were more likely to conduct each safety practice examined compared to contractors that only employed non-union workers.

#### 4. Top 5 safety practices used routinely on jobsites by union status

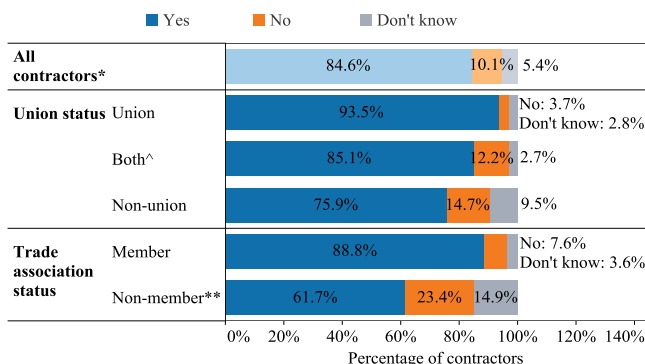


Source: 2023 Safety Management in the Construction Industry Survey.

\*Both includes contractors who employ union and non-union workers.

Contractors were asked about providing personal protective equipment (PPE) designed to fit women or anyone smaller or larger than the average American man (chart 5). Among contractors that only employed union workers, 93.5% stated they provided individualized PPE, compared to 75.9% of contractors that employed non-union workers and 85.1% of those that employed both. By trade association status, 88.8% of members and 61.7% of non-members provided individually fitted PPE.

#### 5. Individualized PPE provision by union and trade association status



Source: 2023 Safety Management in the Construction Industry Survey.

\*Lighter shades for each color were used for "All contractors" category.

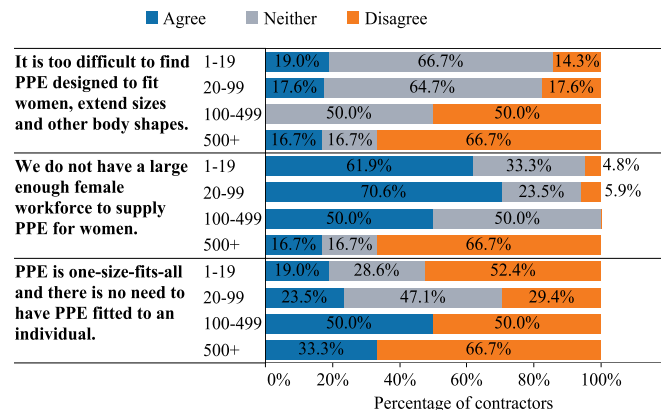
^Both includes contractors who employ union and non-union workers.

\*\*Category includes non-members and don't know.

Contractors that reported that they either did not provide individualized PPE or did not know if they did at the time of the survey responded to a series of statements about PPE, and the responses were examined by *establishment size* and union status (charts 6-7). Over half (52.4%) of small contractors (1-19 employees) agreed that PPE was not a one-size-fits-all. Additionally, 70.6% of medium (20-99 employees) contractors agreed they did not have a large enough female workforce to justify supplying individualized PPE. A majority (66.7%) of large contractors (500+ employees) disagreed with (1) It is too difficult to find PPE designed to fit women and other body shapes, (2) the female workforce was not large enough to supply individualized PPE, and (3) PPE is one-size-fits-all.

Of contractors that employed union workers, 28.6% reported (1) it being too difficult to find PPE designed to fit women and (2) not having a large enough female workforce to supply specific PPE. A majority (71.4%) of contractors that employed only non-union workers reported not having a large enough workforce to supply PPE for women.

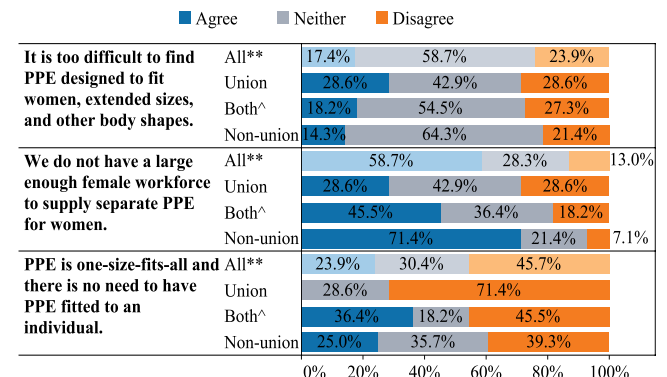
#### 6. Reported reasons for not supplying individualized PPE\* by establishment size



Source: 2023 Safety Management in the Construction Industry Survey.

\*Percentages are based on low total frequency (n=46). Interpret with caution.

#### 7. Reported reasons for not supplying individualized PPE\* by union status



Source: 2023 Safety Management in the Construction Industry Survey.

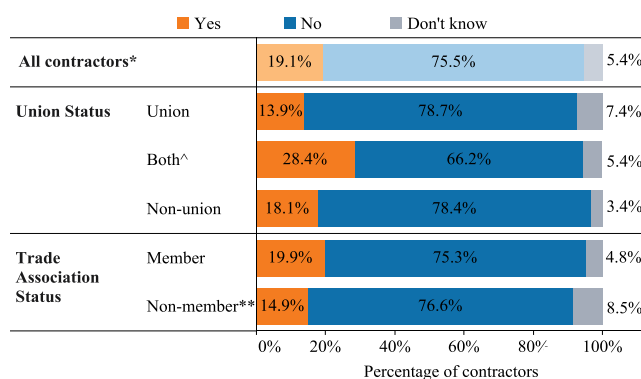
\*Percentages are based on low total frequency (n=46). Interpret with caution.

\*\*Lighter shades of colors were used for "All" category.

^Both includes contractors who employ union and non-union workers.

Heat, a topic of growing concern in construction, was then examined by union and trade association status (chart 8). Three-quarters (75.5%) of contractors reported not having a *heat-related injury* in the past three years. Over a quarter (28.4%) of contractors with both union and non-union workers had a heat-related injury over that period, compared to 18.1% of non-union and 13.9% of union contractors. By trade association status, members were more likely to have a heat-related injury than those that were not members (19.9% versus 14.9%, respectively).

### 8. Reported heat-related injuries in the past 3 years by union and trade association status



Source: 2023 Safety Management in the Construction Industry Survey.

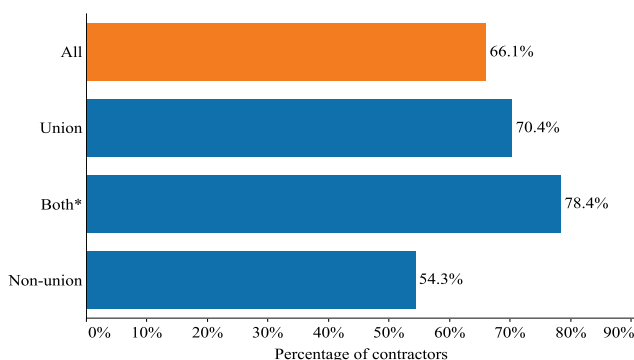
\*Lighter shades of colors were used for "All contractors" category.

^Both includes contractors who employ union and non-union workers.

\*\*Category includes non-members and don't know.

Next, strategies to prevent heat-related injuries were examined (charts 9-11). Contractors that employed both union and non-union workers (78.4%) were the most likely to have a written heat-related plan, compared to non-union (54.3%) and union firms (70.4%; chart 9).

### 9. Reported heat-related plan by union status

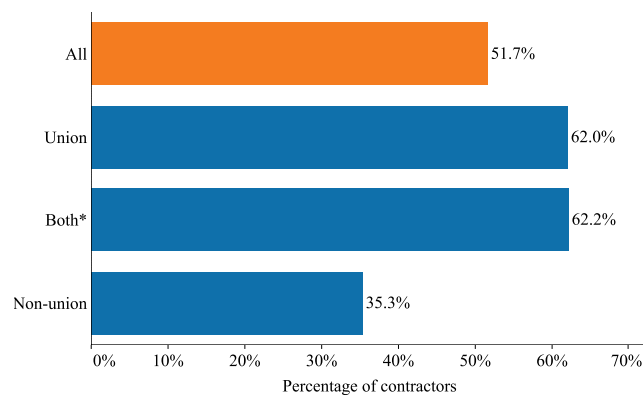


Source: 2023 Safety Management in the Construction Industry Survey.

\*Both includes contractors who employ union and non-union workers.

Contractors were also asked whether they made any changes in the past three years to prevent heat-related injuries (chart 10). Approximately three out of five contractors that union (62.0%) and both union and non-union (62.2%) workers reported changes, while a little over a third (35.3%) of contractors that employed only non-union workers did so.

### 10. Reported changes made to prevent heat illness/injury by union status

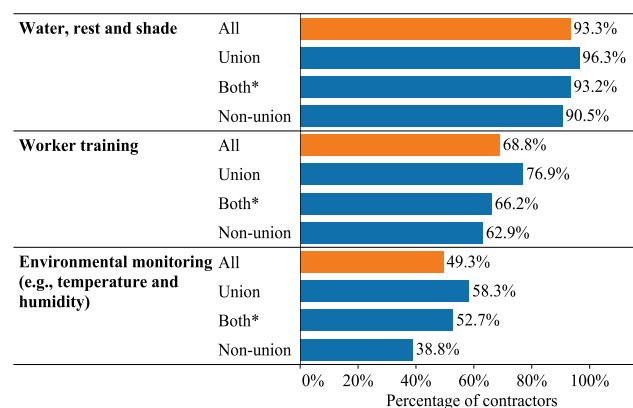


Source: 2023 Safety Management in the Construction Industry Survey.

\*Both includes contractors who employ union and non-union workers.

Regardless of union status, the most common strategy to manage heat exposures was providing water, rest, and shade, with union contractors reporting the highest percentage at 96.3% (chart 11). Union contractors also had the highest percentage of using worker training (76.9%) and environmental monitoring (58.3%) to manage heat exposures.

### 11. Top 3 reported strategies to manage heat exposure by union status



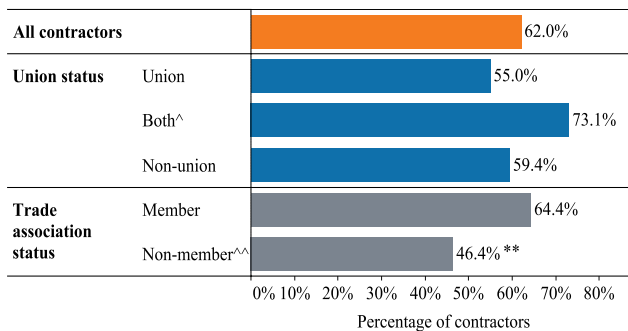
Source: 2023 Safety Management in the Construction Industry Survey.

\*Both includes contractors who employ union and non-union workers.



Lastly, respondents who reported using *emerging technology* to improve safety were examined (chart 12). Union contractors (55.0%) were the least likely to use technology, while contractors that employed both union and non-union workers were the most likely (73.1%). By trade association status, non-member contractors reported the lowest percentage of using technology to improve safety (46.4%), compared to 64.4% of members of trade associations.

## 12. Reported using emerging technologies\* to improve safety by union and trade association status



Source: 2023 Safety Management in the Construction Industry Survey.

\*Only includes contractors who reported using an emerging technology.

^Both includes contractors who employ union and non-union workers.

\*\*Small sample size (n<15). Interpret with caution.

^^Category includes non-members and don't know.

The safety measures examined in this report and others are vital for protecting workers in an industry that continues to be one of the most hazardous in the United States, with over [1,000 fatal occupational injuries](#) among construction workers each year since 2016. The survey found union and trade association status played an important role in the use of the safety measures examined, with union contractors and trade association members typically reporting higher use of each measure. A [prior survey](#) found that union employers reported better safety management practices and safety culture than non-union contractors. Research also shows that trade and labor organizations are often important intermediaries in transferring health and safety information to their members. One such example is the [Roofing r2p Partnership](#), in which the National Roofing Contractors Association (NRCA), United Union of Roofers and Waterproofers & Allied Workers, and CPWR work towards eliminating roofing industry-related injuries and illnesses.

Technology on jobsites can reduce exposures and hazards faced by construction workers to improve safety and health. A majority of contractors who used emerging technology did so to improve safety (62.0%); this finding differed by union and trade association status. Union contractors had the lowest percentage (55.0%) of using technology to improve safety, while members of trade associations had the highest (64.4%). This finding may be the result of internal policies of [unions](#) slowly implementing technology to reduce the potential unknown impacts of technology on the workforce, including

labor-replacement. More information on unions in the construction industry can be found on our [Union Membership in Construction Dashboard](#).

CPWR provides a variety of [planning tools and resources](#), including a new PTP Assessment Checklist that can help contractors assess and improve their PTP process. There are also resources available for [PPE for women](#) and [hazard-specific resources](#), including [Heat Hazards](#), [NIOSH](#) and [OSHA](#) also have materials to address top and emerging concerns in addressing construction worker safety and health.

## ACCESS THE CHARTS & MORE

View the [charts](#) in PowerPoint and the [data](#) underlying the charts in Excel. Downloading will start when you click on each link. These files can also be found under the Data Bulletin at: <https://www.cpwr.com/research/data-center/data-reports/>. See our latest interactive dashboard on [Construction Worker Mental Health](#).

## DEFINITIONS

- **Emerging technology** – one of the following emerging technologies contractors reported using on their jobsites, including wearable sensors, laser scanning, remotely controlled equipment, building information modelling, exoskeletons, drones, robotics, virtual reality for training, and predictive analytics.
- **Establishment size** – the reported number of full-time employees typically employed.
- **General contractors** – includes general contractors, construction management companies, design-build firms, and engineering and heavy civil contractors.
- **Heat-related injury** – includes any illness or injury resulting from heat exposure.
- **Personal protective equipment (PPE)** – equipment worn to minimize exposure to occupational hazards, such as cooling vests.
- **Pre-task planning (PTP)** – a process performed to discuss hazards and control before each task starts on an active construction project.
- **Trade association status** – whether a contractor did (member) or did not (non-member) belong to an industry trade association, such as the Associated General Contractors of America or the National Electrical Contractors Association.
- **Union status** – if contractor reported employing union, non-union, or both union and non-union workers.

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## ACKNOWLEDGEMENTS

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## ABOUT THE CPWR DATA CENTER

The CPWR Data Center is part of CPWR—The Center for Construction Research and Training. CPWR is a 501(c)(3) nonprofit research and training institution created by NABTU, and serves as its research arm. CPWR has focused on construction safety and health research since 1990. The Data Bulletin, a series of publications analyzing construction-related data, is part of our ongoing surveillance project funded by the National Institute for Occupational Safety and Health (NIOSH).

Besides cpwr.com, visit CPWR's other online resources to help reduce construction safety and health hazards:

- Choose Hand Safety  
<https://choosehandsafety.org/>
- Construction Safety and Health Network  
<https://safeconstructionnetwork.org/>
- Construction Solutions  
<https://www.cpwrconstructionsolutions.org/>
- Construction Solutions ROI Calculator  
<https://www.safecalc.org/>
- COVID-19 Construction Clearinghouse  
<https://covid.elcosh.org/index.php>
- COVID-19 Exposure Control Planning Tool  
<https://www.covidcpwr.org>
- Electronic Library of Construction Occupational Safety and Health  
<https://www.elcosh.org/index.php>
- eLCOSH Nano  
<https://nano.elcosh.org/>
- Exposure Control Database  
<https://ecd.cpwrconstructionsolutions.org/>
- Nano Safety Data Sheet Improvement Tool  
<https://nanosds.elcosh.org/>
- Safety Climate - Safety Management Information System (SC-SMIS)  
[www.scsmis.com](http://www.scsmis.com)
- Stop Construction Falls  
<https://stopconstructionfalls.com/>
- Work Safely with Silica  
<https://www.silica-safe.org/>