Safety **Connection**

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SAFETY RESEARCH

- **Best Safety Practices Based on the Nature and Stresses of Small Construction Businesses.** A new study commissioned by the Job-Site Safety Institute and conducted by researchers from the University of Hawaii and Oregon State University found that small residential builders experience a disproportionate share of construction-related fatalities. The research revealed that schedule pressure often drives decision-making on homebuilding sites, frequently influencing safety-related choices. It also identified practical strategies to improve safety performance, including stronger communication and coordination with subcontractors and the integration of dedicated safety contingencies into project schedules to reduce pressure-driven risks. Resources developed through the research include the Safety Action Guide for small construction companies and a practical Safety Playbook for small construction owners.

- **Safety in Construction Robotics.** A new bulletin from National Institute for Occupational Safety and Health (NIOSH) highlights how robotics and automation can reduce construction workers' exposure to hazardous tasks such as heavy lifting, repetitive work, demolition, and work at heights. The bulletin also cautions that robots introduce new safety challenges, including struck-by, caught-between, crushing, sensor failures, communication issues, and risks associated with human-robot interaction on dynamic construction sites. To maximize safety benefits, NIOSH recommends continuous risk assessment, monitoring leading indicators such as near misses and emergency stops, and applying Prevention through Design principles as construction robotics become more autonomous and widely adopted.

- **Predictive Analytics for Construction Safety.** A recent study published in *Professional Safety* found that a Predictive Safety Analytics Framework (PSAF) identified rising construction safety risks three to five months before a spike in recordable incidents. By combining inspection findings, audit results, and serious injury and fatality potential (SIF-P) observations, the study concluded that the framework demonstrates how construction firms can transform routinely collected safety data into predictive intelligence, using a composite score to identify emerging risks before incidents occur and enabling proactive intervention rather than reactive reporting.

CONSTRUCTION SAFETY TRENDS

- **CPWR Data Bulletin: Trends of Caught-In or -Between Injuries Among Construction Workers.** A new CPWR-The Center for Construction Research and Training Data Bulletin examines caught-in/between injuries in U.S. construction, including fatal and nonfatal injury trends, state data, severe injuries, and OSHA trenching-related citations and penalties. Key findings revealed that construction recorded the highest number of fatal caught-in/between injuries among all industries in 2023-2024 (96 fatalities), with nearly 69% resulting from collapses or engulfment. Construction also had 3,400 nonfatal injuries, with 42% involving workers caught between non-running objects, while the average OSHA trenching citation penalties increased 29% from $3,500 in 2011 to $4,500 in 2025.

- **New Framework Helps Construction Employers Address Suicide Prevention.** COMPASS (Construction Organizations Mobilizing for Peer Support and Suicide Safety) is a practical, evidence-based framework designed to help contractors and other construction organizations develop, implement, and sustain effective suicide prevention programs. The framework provides a straightforward, scalable, and low-cost 10-step roadmap tailored to the unique challenges of the U.S. construction industry. Developed by researchers at Washington University in St. Louis and field-tested specifically for construction, COMPASS aims to strengthen peer support, improve access to resources, and foster a culture that prioritizes mental health and suicide prevention in an industry that loses an estimated 5,000 workers to suicide each year.

- **Lithium-Ion Batteries and Construction Site Safety.** As the use of cordless tools and equipment grows, lithium-ion batteries are creating new fire risks on construction sites due to their potential for thermal runaway and fast-spreading fires. A National Fire Protection Association (NFPA) research-based article examines emerging fire risks associated with lithium-ion batteries used in cordless tools and equipment, stressing that proper battery storage, charging practices, worker training, and fire prevention planning are essential to protecting workers and preventing costly project disruptions.