

ADVANCES IN SAFETY POLICY AND PERSONAL PROTECTIVE EQUIPMENT



SEPTEMBER 2018 TECH BRIEF FOR CONSTRUCTION AND UTILITIES TALENT NETWORKS

PPE + Technology = Comfort + Compliance

Technology **improvements** to **Personal Protective Equipment (PPE)** include:

Biometric monitoring of individual exposure in real-time

- Older radiation badges were checked once a day to see if you could go back to work in a nuclear power plant. Now, detection of increased radiation can both spot a technical issue and allow a worker to move away from that area immediately.

Ergonomics redesigns

- Helmets (formerly referred to as “hard hats”) are particularly important to redesign as there is more diversity in the workforce.

Respirators are no longer “one size fits most”, instead, there are **guides to selection and fitting** meant to ensure compliance for the full length of a shift.

Labor Force Takeaway

#1 Remove the Industry Valued Credentials (IVCs) options that are obsolete.

#2 PPE training needs new providers

OSHA provides a list of authorized trainers who conduct **Outreach Training classes** in construction, general industry, maritime, or disaster site work. They maintain two permanent locations in/near NJ:

Atlantic OSHA Training Center at Rutgers School
of Public Health
300 Atrium Drive
Somerset, New Jersey, 08873
(732) 235-9450

Mid Atlantic OTI Education Center at
Construction Safety Council
1617 John F. Kennedy Blvd, Suite 810
Philadelphia, PA 19103-2713
(215) 557-1961

#3 PPE Training should provide context about the drivers of technology and policy including GRI and OSHA.

#4 PPE Training should incorporate regulations covering silica

Major New Drivers in Health & Safety

The Global Reporting Institute ([GRI](#)) may not be the first name to come to mind when listing influential decision makers for construction site safety. GRI is a standards body that sets the expectations between corporations and investors regarding climate change, human rights and corruption. On an actionable level are standards regarding health sustainability. So, the link between occupational *health impacts* (both acute and chronic) and *investment rating* (i.e. company profitability) is stronger than it might first appear for publicly traded construction firms such as [LendLease](#), [Jacobs](#), [AECOM](#), [Fluor](#), [KBR](#), etc.

Changes to [GRI safety reporting, issued in June 2018](#), include use of management systems, hazard identification, risk assessment, hierarchy of controls, worker participation and training. Disclosures on work-related injury and illness now include improved methodologies for calculating injury and illness data. These disclosures place a greater emphasis on identifying hazards and high-potential incidents. Preventive actions can include the introduction of robotics.

Another impactful change is [regulation on silica](#) exposure, which can cause long-term damage of the respiratory system, kidney disease and certain cancers. Crystalline silica becomes respirable when it is cut, ground, drilled or chipped. In construction, silica exposure comes with working with materials containing silica. Grinding, drilling, sawing, cutting or chipping concrete, stone, cement or cement fiberboard would all be examples of potential silica exposure.

Silica is associated with concrete and ready-mix concrete products, cut stone, foundries, support for oil and gas operations, railroads, asphalt roofing materials, dental labs, porcelain enameling, shipyards, and glassmaking.

The Occupational Health and Safety Agency, [OSHA, requirements](#) parallel GRI standards. (GRI publications are not legal mandates yet are “enforced” by the investors seeking long-term profitability and low volatility.) Silica regulation categories include:

- Written Exposure Control Plan — identifies tasks which could create exposures and methods a company will use to protect its workers.
- Housekeeping — focuses on practices such as sweeping and brushing. The use of compressed air that will expose workers to silica is not allowed, unless it is used in conjunction with an adequate ventilation system.
- Training — workers receive required training on silica exposure before work assignments.
- Recordkeeping — detailed records of silica exposure and medical exams must be kept on file and produced on demand.

New Jersey is a leading [silica producing state](#). Two of the major players in the market are multinationals with US headquarters in New Jersey:

- [Solvay](#) has large facilities in Princeton, Saddle Brook and West Deptford
- [Evonik](#) has administrative headquarters in Parsippany and a manufacturing facility in Piscataway.

Specialty silica are chiefly used in end-use industries such as paints and coatings, food and beverage, electronics, agriculture, rubber, cosmetics and personal care, and others. Expansion in these specific industries as well as in concrete manufacturing is increasing the growth of the specialty silica market.