Augmented Reality for Safety: Reality Check on Tech Implementation Fatality File

Wearable Safety Technology in the Workplace — What Happens When Workers Trust the Device More Than the Hazard

What Is Known

As AR headsets and wearable safety devices are deployed across construction, manufacturing, and industrial worksites, a documented pattern is emerging — workers and employers are treating the technology as a primary safety control rather than a supplementary one. In March 2024, the U.S. Government Accountability Office published a formal report on wearable technologies in the workplace after reviewing their rapid adoption across three sectors that together experienced over 700,000 nonfatal injuries and 2,000 fatal accidents in 2022. The GAO found that OSHA has no specific standards governing wearable or AR safety technologies, that workers have raised significant concerns about device reliability and accuracy, and that no federal minimum performance requirements exist to ensure these tools work as intended in safety-critical environments.

What the Evidence Shows

Research published in Frontiers in Virtual Reality in 2025 found that significant challenges remain in hardware reliability and the gap between how AR technology performs in controlled training versus real-world field conditions. A worker who has been trained with AR tools and trusts them may be slower to independently verify a condition the device has failed to flag — and that delay can be the difference between a recognized hazard and an uncontrolled one.

The Bottom Line

No federal standard currently governs how AR or wearable safety tools must perform in U.S. workplaces. The hazards on any worksite do not pause when a device loses power, loses signal, or displays incorrect information. AR tools are a supplement to safety thinking — not a substitute for it.

Source: https://www.gao.gov/