

Why Fall Protection Fails: The Hidden Risks of Fragmented Safety Systems

Compliance alone does not guarantee worker safety. A complete-system approach that integrates hazard assessment, engineering, equipment selection, training, rescue planning and documentation can help organizations close critical gaps and better protect workers at height.

BY THOMAS E. KRAMER, AND CONTRIBUTING EDITOR, KIMBERLY MESSER

Significant fall incidents don't happen often, but when they do occur, they're catastrophic and costly. Similarly, fall protection systems often don't fail because of a single disastrous mistake. Often, failure occurs because a critical element of the system is overlooked, misunderstood, or disconnected from the rest of the solution.

An anchorage may be structurally sound or meet the well-known 5,000-pound requirement but be positioned where workers cannot realistically use it. Equipment may meet regulatory requirements but create swing-fall hazards or have inadequate clearance. A system may be compliant upon installation but lack inspection, use procedures or rescue planning to facilitate safe use. In each case, the issue is not necessarily the quality of an individual component—but, rather, the fragmentation of the overall solution.

That fragmentation is one of the biggest challenges organizations face when addressing work-at-height hazards today and may be one reason fall fatalities remain so high. Engineering, equipment procurement, installation, training, and inspection are often managed separately by different vendors, each with its own priorities. The result can be gaps in safety, increased liability, unnecessary cost, and systems that are difficult for workers to use effectively.

Effective fall protection requires a more comprehensive approach: a complete system.

Focus on Solutions, Not Products

Designing effective fall protection solutions comes from engaging with workers and acquiring a detailed understanding of their needs and challenges, and then applying the appropriate control techniques.

ANSI/ASSP Z359 guidance and broader safety best practices emphasize evaluating hazards using the Hierarchy of Controls whenever possible. Engineering and administrative controls are often more effective and less defeatable than relying entirely on personal protective equipment.

Instead of defaulting to simple equipment purchases, workers at height are typically better served by deeper evaluation to find meaningful ways to reduce fall risk:

- Eliminating exposure through redesign
- Adding passive guardrail systems
- Modifying access methods
- Improving work positioning
- Limiting worker exposure duration
- Elevating anchorages

Equipment is only one component of an effective fall protection

program, and the best solution is typically not the one with the most hardware. In some cases, active fall arrest systems are necessary and appropriate. However, they should be selected as part of a comprehensive evaluation—not simply because equipment is available or easily procured.

The most effective solutions balance all relevant factors:

When these interrelated priorities are considered together, organizations are more likely to achieve systems that workers will actually use correctly and consistently.

Fall Protection Is Only as Strong as Its Weakest Link

Fall protection should never be viewed as a standalone product or a single compliance decision. It is a complex, interconnected system, where each element affects the others. If one part fails, the entire solution can fail.

Common weak links include:

Systems that interfere with productivity or workflow

A lack of, or even improperly, designed or installed anchorages

- Insufficient worker training
- Incompatible equipment
- Inadequate fall clearance
- Lack of rescue planning
- Missing or incomplete inspection or certification documentation

Unfortunately, too many organizations still approach fall protection as a procurement exercise rather than a systems issue. A common assumption is that “tied-off equals protected,” so purchasing compliant harnesses and self-retracting devices (SRDs) seems to address the concern. In reality, personal fall arrest equipment alone does not guarantee worker safety.

A worker connected to an improperly designed system may still face:

- Structural failure
- Improper equipment use
- Swing-fall exposure
- Excessive free-fall distance
- Inability to self-rescue
- Delayed rescue response

The system succeeds—or fails—as a whole.

Building a Complete Fall Protection System

So, if you want to better protect your worker and improve your program, what is the best way to fully address a fall protection

solution?

That process includes:

- Hazard assessment and evaluation
- System design
- Equipment selection
- Installation
- Certification
- Inspection and recertification
- Training and procedures

When these phases are aligned from the beginning, organizations benefit from:

- Lower overall project costs
- Improved communication
- Better worker adoption
- Fewer design conflicts
- Reduced rework
- More consistent, complete documentation

Just as important, a coordinated process helps ensure that decisions made in one phase do not create unintended problems later. Each decision influences the overall effectiveness of the system.

Documentation is another frequently overlooked component that is critical for understanding, tracking and communicating about fall protection systems. And, while the documentation doesn't protect the worker, the exercise of documenting often exposes critical gaps and weak links.

A fully documented system includes:

- Structural analysis
- Design calculations
- Equipment specifications
- Rescue procedures
- Inspection records
- Training documentation
- Certification documentation
- These materials become critical when:
- Personnel changes occur
- Systems are modified
- OSHA or internal audit requests information or changes re-

quirements

- Incidents or near misses happen
- Equipment must be recertified

Without proper documentation, organizations may struggle to demonstrate that systems are properly evaluated, installed, used and maintained.

The Problem with Fragmented Solutions

Many fall protection programs evolve over time through a series of disconnected decisions.

For example:

Each participant may perform their role competently, yet gaps still emerge between disciplines. This fragmented approach can create:

- Communication breakdowns
- Conflicting assumptions
- Solutions that are difficult for workers to use properly
- Increased coordination burden
- Delays and rework
- Inconsistent documentation

The problem becomes especially significant when organizations focus primarily on products instead of hazard control strategies.

Compliance Is More Than Meeting Minimum Requirements

Another common challenge is misunderstanding the difference between minimum regulatory compliance and comprehensive system performance. Compliance is required, but what really matters is truly creating a safer work environment.

OSHA regulations establish legal requirements, but many provisions are broadly written and represent minimum expectations. ANSI/ASSP Z359 standards, while voluntary, provide more current and detailed guidance regarding system design, certification, rescue, training, and inspection practices.

For example, ANSI/ASSP Z359 standards distinguish between certified and non-certified anchorages and establish different design and documentation expectations for various applications, including fall restraint, fall arrest, work positioning and rescue systems.

Without a strong understanding of these distinctions, organizations may implement systems that technically meet minimum requirements but still expose workers and employers to unnecessary risk. Therefore, you miss the return on investment because the workers are still exposed.

Asking the Right Questions

Organizations evaluating fall protection improvements should ask broader questions than simply "What equipment do we need?"

More effective questions include:

- What hazards are workers exposed to?
- Is there a way to reduce or eliminate exposure?
- Will workers realistically use the system as intended?
- Are the systems designed by a qualified person?
- Has fall clearance been fully evaluated?
- How will rescue be performed?
- Who is responsible for inspections and recertification?
- Is documentation complete and accessible?
- Are all disciplines coordinated throughout implementation?

These questions help shift the conversation from isolated compliance decisions to complete risk reduction.

A More Effective Path Forward

Fall protection systems fail at their weakest link. In many cases, that weak link is not equipment quality, it's fragmentation of the system.

When hazard assessment, engineering, compliance, installation, training, and documentation are addressed separately, gaps emerge that can compromise the effectiveness of the entire system.

Organizations that take a complete-system approach are better positioned to reduce risk, improve worker safety, simplify long-term management, and avoid costly failures later. The goal is not simply to install equipment or satisfy minimum requirements. It is to create a fall protection solution that functions reliably in the real world—where workers, structures, procedures, and safety systems all work together to reduce risk. **OHS**

Thomas E. Kramer, PE, CSP is a safety consultant and structural engineer with LJB Engineering. With 30 years of experience, he is an internationally recognized expert in applying engineering and safety practices to reduce risk for workers at heights. Kimberly Messer is a marketing and communications professional with LJB Engineering, who focuses on technical and media communications related to the safety and engineering industries.