

Mitigation for an Unacceptable Risk



Manny Carrillo

Inventor and COO Safety Anchor Post® Trajectory Control® OEM, Site-Specific Safety Equipment

March 10, 2026

A Post-CONEXPO Notification on the Obsolescence of the "Splat Factor"

I. The Industry Notification: A Shift in Responsibility

Exhibiting at [CONEXPO-CON/AGG 2026](#) served as a formal notification to the structural construction industry: The "Biological Drama" of a fall event is no longer a mathematical necessity.

For decades, we have accepted **Tier 5 Fall Arrest**—the act of catching a plummeting body—as the gold standard. We are here to state that as of 2026, relying on "the catch" is a **mitigation for an unacceptable risk**. Through **Safety Anchor Post Trajectory Control®**, the industry has reached a new baseline: **Tier 3 Engineering Control (Hazard Elimination)**.

Eliminating the Error in the Equation

The "Splat Factor" is inherently error-prone. It relies on variables that change in real-time: worker weight, harness stretch, and equipment age. A 6-inch error in calculation equals a catastrophic failure.

Trajectory Control® eliminates this error through Geometric Precision:

- **Zero Free-Fall:** By utilizing a patented **8'-00" Geometric Setback**, the free-fall distance is reduced to **0' 0"**.
- **Zero Deceleration Error:** Without a fall, there is no shock absorber deployment to calculate.
- **The "Fixed Zero":** We have replaced "Total Fall Distance" with a mathematical constraint. If the worker cannot reach the leading edge, the "Splat Factor" becomes irrelevant.

To prove this mitigation is structural and not just theoretical, we have "doubled down" on third-party validation. This addresses the **Who, What, When, Where, Why, and How** of site safety:

Sample: 1 189 lbs

Sample: 2 235 lbs

Sample: 3. 217 lbs

AAF: 213.67

Intertek® Test report for SAPS

- **The Dynamic Proof:** Verified by [Intertek](#) for **ANSI Z359.18-2017**.

SECTION (TEST)	REQUIREMENT	RESULTS			COMPLIANCE		
3.2.2.2/4.2.2.2.4	Dynamic Strength (Type T Anchor) : A) Install anchorage connector, conditioned according the applicable requirements of 4.2.2.1.2 or 4.2.2.1.3 on the test anchorage in accordance with 4.1.2 B) Connect one end of the test lanyard to the connection point of the anchorage connector to be loaded or to the arrest force measuring instrumentation. C) Connect the other end of the test lanyard to the test weight specified in 4.1.3 D) Raise the test weight to achieve a free-fall distance of 3' (+0.1/-0). E) Release the test weight by means of quick release mechanism. F) Evaluate the test results per 3.2.2.1				PASS		
	Dynamic Strength Test			SAMPLE: 1		SAMPLE: 2	SAMPLE: 3
	Anchorage connector successfully arrest the test weight?		YES	YES		YES	
	If deformation occurred did it create more than 1/8" (3mm) between gate and body?		N/A	N/A		N/A	
	MAF (Ref Only) Lbs.		3345	3488		3495	
Note: Mounted in 3'x3'x8" Concrete Block made by Intertek.							

SAPS

- **The Static Proof:** A secondary **Intertek Static Test** proving that the anchor and substrate can maintain sustained tension without deformation or "pull-out" error.
- **The Structural Result:** A predictable, repeatable safety outcome that protects both the **Personnel** (88% reduction in body stress) and the **Asset** (**VAK ENGINEERING PRIVATE LIMITED** PE-stamped substrate compliance).

The 360-Degree Validation: The **Intertek** Double-Down

To raise the ceiling of what is possible, we didn't stop at the minimum industry requirement. SAPS® has doubled down on safety by securing two distinct validation phases from **Intertek**®. This addresses the **Who, What, When, Where, Why, and How** of worker preservation:



SAFETY ANCHOR POST SYSTEMS. TEST REPORT

SCOPE OF WORKS
ANSI Z359.18 – 2017 Safety Requirements for Anchorage Connectors for Active Fall Protection Systems

REPORT NUMBER
104693225CRT-001

ISSUE DATE
6/17/21

PAGES
13

DOCUMENT CONTROL NUMBER
GFT-OP-10a (6-March-2017)
© 2017 INTERTEK



CARRILLO HANDRAIL SYSTEMS INC TEST REPORT

SCOPE OF WORK
Client Specified Testing: Static Test on Anchor System

REPORT NUMBER
106442885CRT-001

ISSUE DATE
February 27, 2026

PAGES
5

DOCUMENT CONTROL NUMBER
RT-L-US-Test-3470 (9/1/2017)
© 2017 INTERTEK



SAPS

- **WHO:** For the High-Profile GC and Site Owner who require absolute liability transfer.
- **WHAT:** A dual-phase testing regimen.

- **WHEN:** From the first day of decking to the final close-out, ensuring performance is never in question.
- **WHERE:** Validated across all critical substrates: Concrete, CLT, Q-Decking, and Thin-Slab.
- **WHY:** Because a fall is both a moment of impact (Dynamic) and a sustained load (Static). We've eliminated the "What If" by proving the system survives both.

The Hierarchy of Unacceptable Risk

The Z359 consensus standards are built upon the fundamental **Hierarchy of Controls** , which dictates that hazard elimination and engineered controls (Restraint) are superior to Personal Protective Equipment (Arrest). Our analysis indicates that the current framework's definition of "Fall Arrest" tolerates a profound and unacceptable hazard: the transference of residual vertical energy into violent lateral kinetic energy.

*"In this image, success relied on a perfect calculation of air space. In **Safety Anchor Post Trajectory Control®**, we don't calculate air space—we eliminate the need for it through an 8'-00" Geometric Setback."*



SAPS

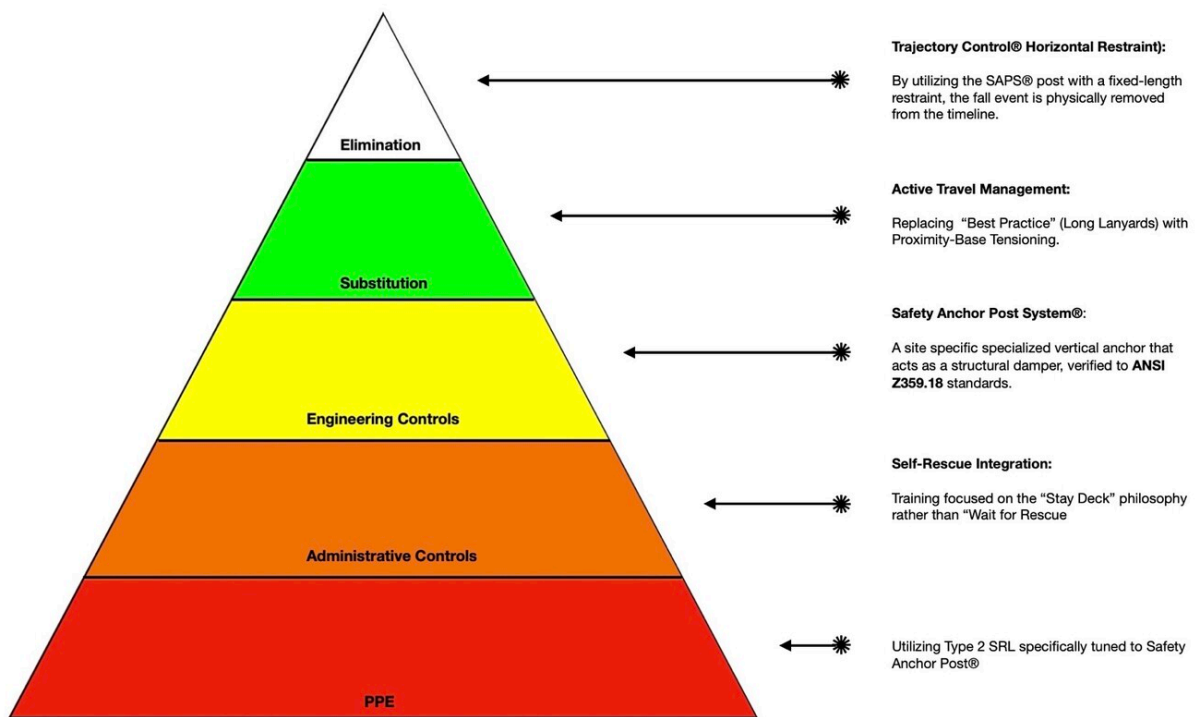
- **HOW:** By blending **Geometric Engineering** with brute-force physical validation.

The Result: **Geometry over Luck**

While traditional "Tier 5" systems focus on "the catch," our **Tier 3 Engineering Control** focuses on the path. By utilizing a patented **8'-00" Geometric Setback**, we create an "Arc of Prevention."

Metric	Traditional Fall Arrest	Trajectory Control®
Control Method	Reactive (Catching a body)	Proactive (Elimination)
Impact Force	1,800 lbs – 3,000+ lbs	189 lbs – 235 lbs
Free-Fall Distance	6' - 12'	0' 0" (Zero Free-Fall)
Validation	Single Standard	Intertek® Double-Down

SAPS



Biological Yield: Kinetic Energy Management

Biological Protection is the intentional management of kinetic energy to keep impact forces below the threshold of physiological trauma.

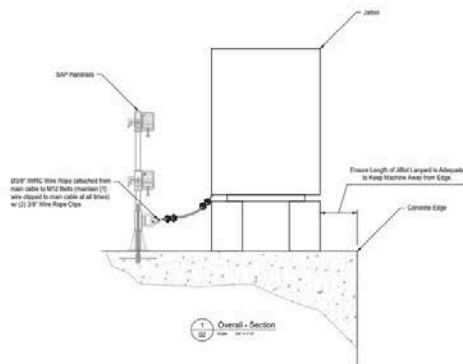
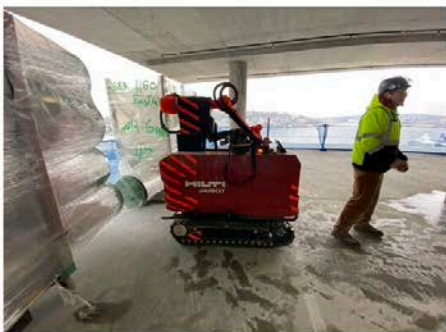
SAPS

Safety for the Modern Ecosystem

The job site is now a robotic ecosystem. Standard "erector-only" lines (3/8" wire rope) are typically rated for only two people. On a modern high-rise, clipping in a third worker or a **Hilti® JAIBOT®** isn't just a breach—it's a structural roll of the dice. **Safety Anchor Post** is engineered to handle this "Crowd Factor" with inbound Trajectory Control®.

Safety for the Modern Ecosystem

The job site is now a robotic ecosystem. Standard "erector-only" lines (3/8" wire rope) are typically rated for only two people. On a modern high-rise, clipping in a third worker or a **Hilti® JAIBOT®** isn't just a breach—it's a structural roll of the dice. **Safety Anchor Post** is engineered to handle this "Crowd Factor" with inbound Trajectory Control®.

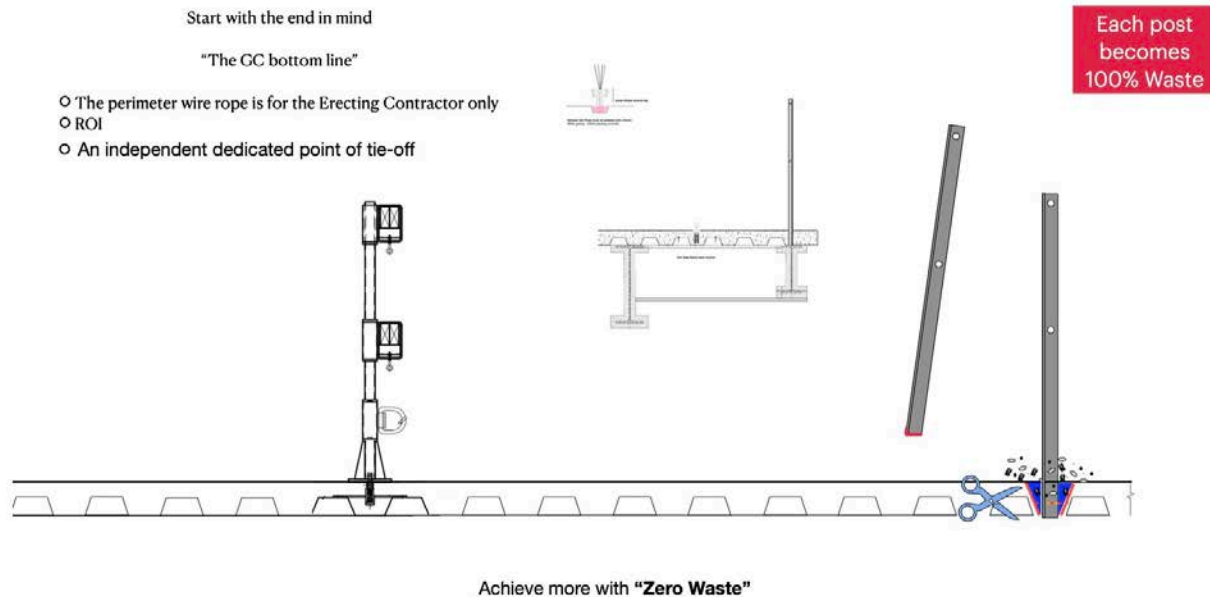


The Structural Gamble: The "3/8-Inch" Reality

While management should know the limits, the "Crowd Factor" is killing safety plans

- **The Two-Person Limit:** A 3/8" wire rope is typically rated for only two people simultaneously.
- **The Failure:** On a busy high-rise, clipping a third or fourth worker into an "erector-only" line isn't just a contract breach; it's a structural roll of the dice.
- SAPS is engineered to handle **JAIBOT® HILTI** Using inbound Trajectory Control®

SAPS



SAPS

Beyond the Save: Achieving "Zero Waste" and Structural ROI

To "start with the end in mind" is to recognize that safety should not come at the expense of the building's structural integrity or the contractor's bottom line. Traditional fall protection methods often result in **100% waste**—posts are cut, substrates are scarred, and thousands of dollars in equipment are abandoned or scrapped after a single use.

The Structural Double-Down

Our [Intertek](#)

Double-Down (Static + Dynamic testing) doesn't just validate worker safety; it validates the **Surface Thread Mount** technology.

- **The ROI:** Because our anchors are engineered for controlled tension and clean removal, the system is reusable. Each post is an asset, not an expense.
- **The Structural Benefit:** Traditional "cut-off" posts leave buried steel that can lead to oxidation and substrate degradation. SAPS® ensures a clean extraction, protecting the "GC Bottom Line" from long-term liability and repair costs.

Independent Dedicated Tie-Off vs. Perimeter Wire Rope

We are notifying GCs that the era of relying on shared perimeter wire rope is over.

- **The Problem:** Perimeter wire is often for the erecting contractor only, leaving subsequent trades in a "Binary Trap" of improvised tie-offs.
- **The Notification:** **Safety Anchor Post** Trajectory Control® provides an **independent, dedicated point of tie-off** for every worker. This removes the "musical chairs" of shared safety lines and ensures that every trade is protected by the same Intertek®-validated geometry.

Achieve More with "Zero Waste"

In an industry increasingly focused on LEED credits and sustainable engineering, **Safety Anchor Post** is the only system that offers a LEED Certification safety solution. The ceiling has been raised. The geometry is proven. The drama is over.

"When you eliminate the 'Splat Factor' error, you eliminate the waste. We don't just save lives; we save the substrate, the

*schedule, and the budget. **Safety Anchor Post Trajectory Control®** is the only safety notification that pays for itself."*

About the Author & Safety Anchor Post (SAPS®)

Driven by over 13 years of field-tested engineering and an uncompromising commitment to worker preservation, Manny Carrillo founded SAPS® to bridge the industry's most critical safety gaps. As the developer and **exclusive holder of multiple patents and trademarks**—including the revolutionary **Trajectory Control®** methodology— **Safety Anchor Post** specializes in "Tier Jump" engineering.

By shifting the industry paradigm from reactive fall arrest to proactive hazard elimination, **Safety Anchor Post** provides the only validated alternative to the 'Binary Trap' of standard compliance. Our mission is to cement safety through **multi-phase engineered validation**, headlined by **rigorous third-party testing (Intertek)**, ensuring that through geometric precision, the human body is never again the weakest link in a structural system.

Contact **Manny Carrillo** Information: (800-377-1632 | info@safetyanchorpost.com)



Contact Information: 800-377-1632
info@safetyanchorpost.com



SAPS®

#SAPS #TrajectoryControl #IntertekValidated
#ConstructionInnovation #CONEXPO2026

Industry_Notification_Mitigation_Unacceptable_Risk_SAPS_2026
.pdf

Proprietary Notice & Intellectual Property Disclosure

© 2026 Safety Anchor Post Systems (SAPS®). All Rights Reserved.

This technical briefing contains proprietary engineering methodologies, including but not limited to Trajectory Control® and the Arc of Prevention™, which are protected under United States and International Patent and Trademark laws.

Unauthorized Use Prohibited: No part of this publication may be reproduced, distributed, or transmitted in any form or by any means—including photocopying, recording, or other electronic or mechanical methods—without the prior written authorization of Manny Carrillo, CEO of Safety Anchor Post Systems.

Confidentiality Notice: The data, testing results (Intertek®), and structural calculations contained herein are provided for informational and evaluative purposes only. Modification or unauthorized distribution of this material constitutes an infringement of intellectual property rights and may result in legal action.

For Authorization Requests: Safety Anchor Post Systems (SAPS®)

Legal Department

info@safetyanchorpost.com