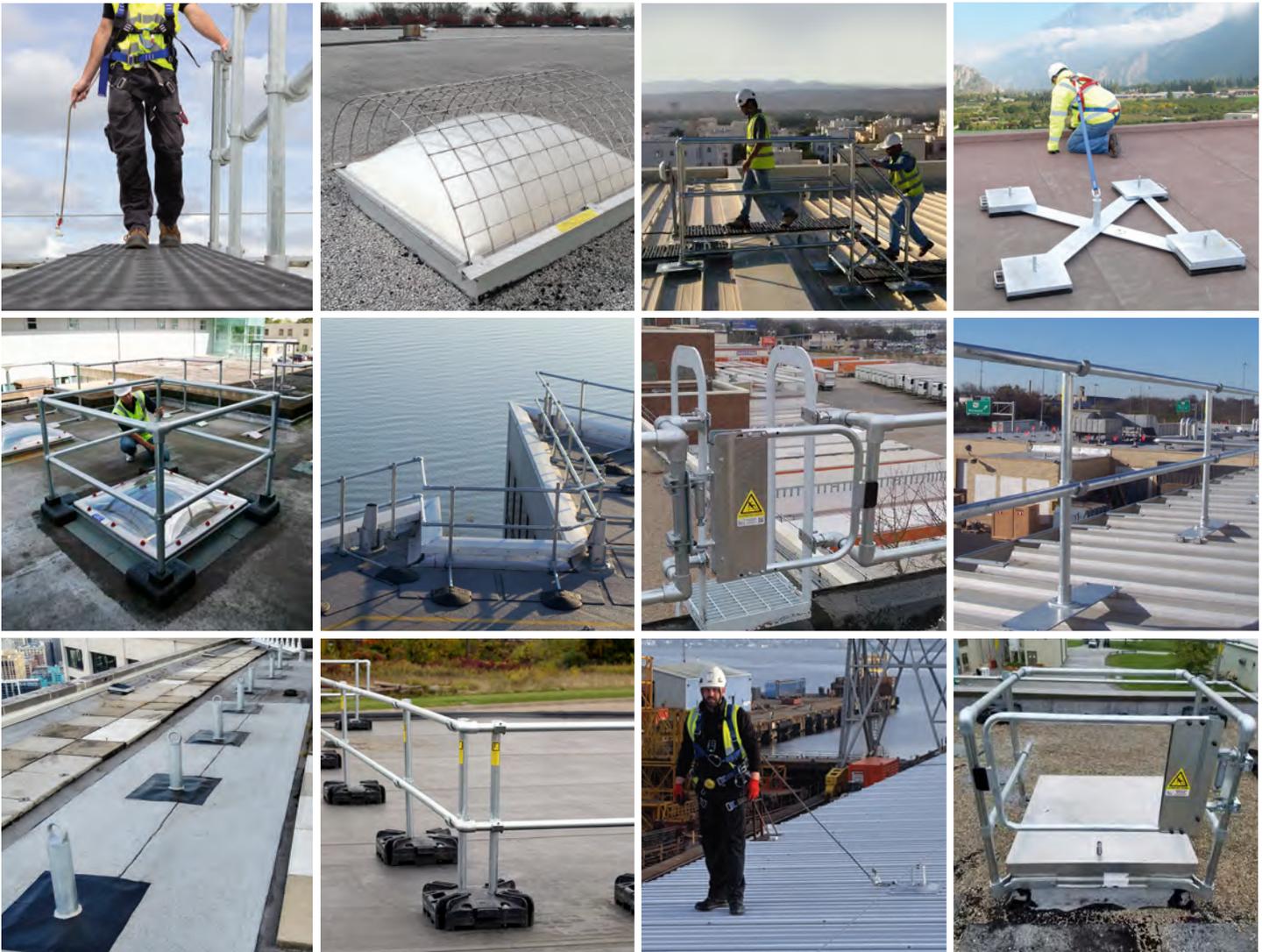




SEPARATING PEOPLE FROM HAZARDS

# Fall Protection Solutions





## Keep Safety: Your Fall Protection Experts

Keep Safety is the world's leading fall protection expert. We engineer, manufacture and install fall protection solutions that safely separate people from hazards. Our OSHA-compliant products and systems are third-party tested and trusted to ensure consistent performance at the highest level.

## Rooftop Safety Audit: How do We Assess a Risk on Your Rooftop?

As fall protection experts we perform a critical analysis on your rooftop to identify the hazards where your workers are exposed to the greatest risk. This ensures that the most dangerous areas are protected immediately with state-of-the-art systems and OSHA compliant solutions.

- **On-Site Analysis:** Your rooftop assessment
- **Survey Evaluation Report:** Recognize the hazards
- **Professional Installation:** Nationwide network of certified integrators
- **System Certification:** Ensure compliance
- **Follow-Up Inspection:** Exceed regulatory requirements
- **Standard and Extended Warranty:** Protect and maintain safety

## OSHA Compliance: We Exceed the Standards

### Safety and Compliance

- Exceed all current OSHA requirements
- Third-party tested

### Durability

- Galvanized for long-lasting, dependable safety
- Corrosion-resistant, maintenance free components

### Versatility

- Pre-fabricated, modular design
- Assemble or reconfigure on-site

### Simplicity

- Installs easily with minimum tools
- No drilling, welding or special permits required

### Customer-Focused

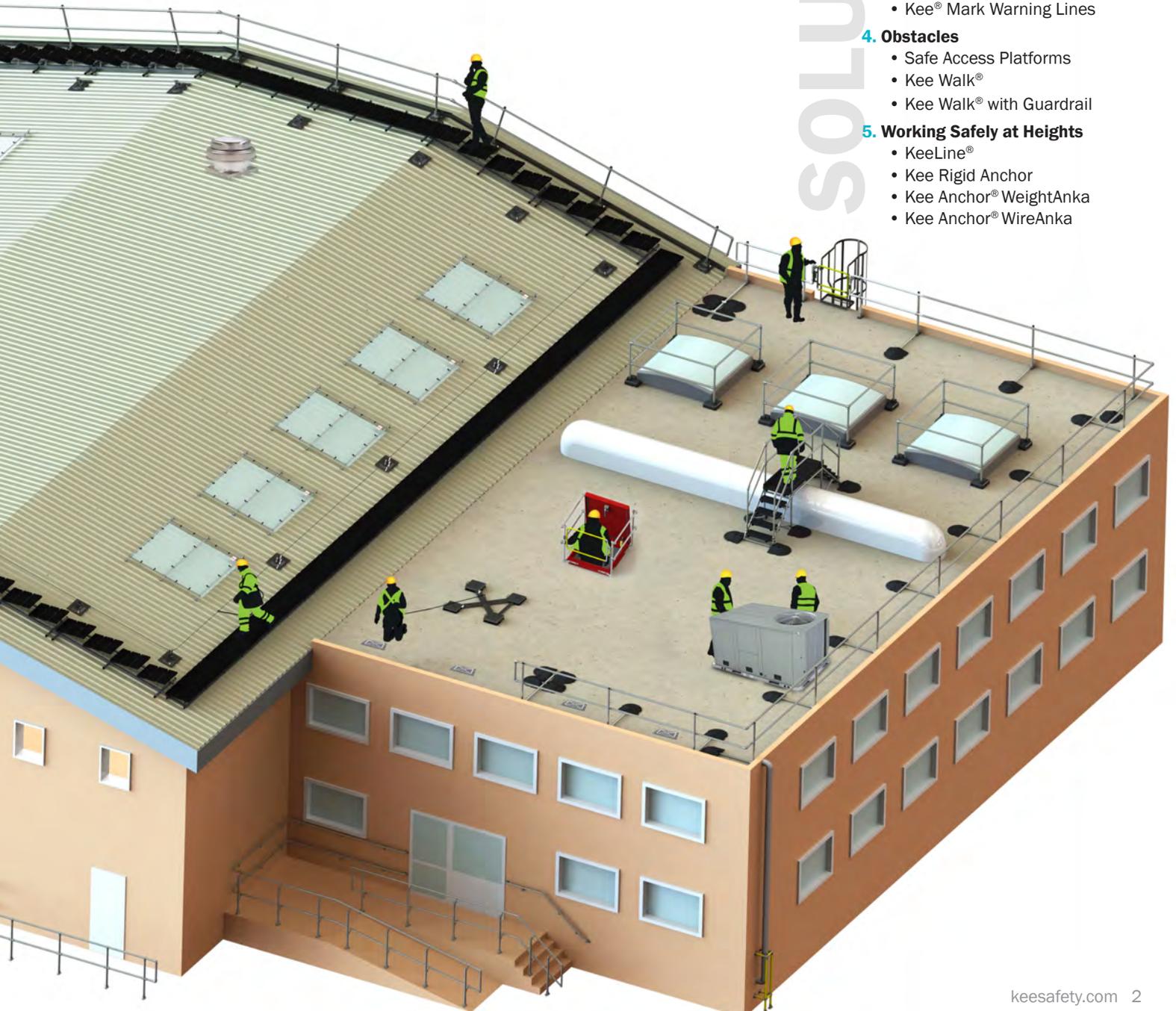
- Responsive regional sales team across North America
- Expertise in federal, state and local compliance codes





## Rooftop Fall Protection: An Integrated Solution

When access to the entire roof is required, the safest, most comprehensive solution is a perimeter railing system that surrounds and protects all roof edges. KeeGuard® Safety Railing is the most common system we install - however, there are many additional hazards on your rooftop, and Kee Safety has an integrated solution to keep your workers safe while keeping you OSHA compliant.



SOLUTIONS

### 1. Access Points:

- Kee Hatch®
- Kee Gate
- Kee Ladder Kit

### 2. Rooftop Openings

- Kee Dome®
- Kee Skylight Screens

### 3. Unprotected Edges

- KeeGuard®
- KeeGuard® Contractor
- KeeGuard® TopFix
- Kee® Mark Warning Lines

### 4. Obstacles

- Safe Access Platforms
- Kee Walk®
- Kee Walk® with Guardrail

### 5. Working Safely at Heights

- KeeLine®
- Kee Rigid Anchor
- Kee Anchor® WeightAnka
- Kee Anchor® WireAnka

# RISK

## How do We Assess Risk on the Rooftop?

Fall Protection Experts perform a critical analysis of the entire rooftop surface to identify the hazards where workers are exposed to the greatest risk. This ensures that the most dangerous areas are protected immediately with state-of-the-art fall protection systems and OSHA compliant solutions.

**We assess risk based on two factors:**

### 1. Severity of Injury:

In fall protection assessment, the severity of a fall-related injury is always assumed to be life-threatening, and therefore should be rated at a Level 5.

### 2. Likelihood:

The greatest predictor for the likelihood of an accident occurring is to review the frequency of exposure to the hazard on the roof.

### 3. RISK = SEVERITY x LIKELIHOOD

We prioritize our Risk Assessment based on the critical danger and how frequently workers are exposed.

## LIKELIHOOD

	1 NEAR IMPOSSIBLE	2 UNLIKELY	3 POSSIBLE CHANCE	4 LIKELY	5 ALMOST CERTAIN
1 INSIGNIFICANT	1	2	3	4	5
2 MINOR INJURIES	2	4	6	8	10
3 NOTABLE INJURIES	3	6	9	12	15
4 MAJOR INJURIES	4	8	12	16	20
5 DEBILITATING INJURY DEATH	5	10	15	20	25

**Critical Hazards: Address Immediately!**

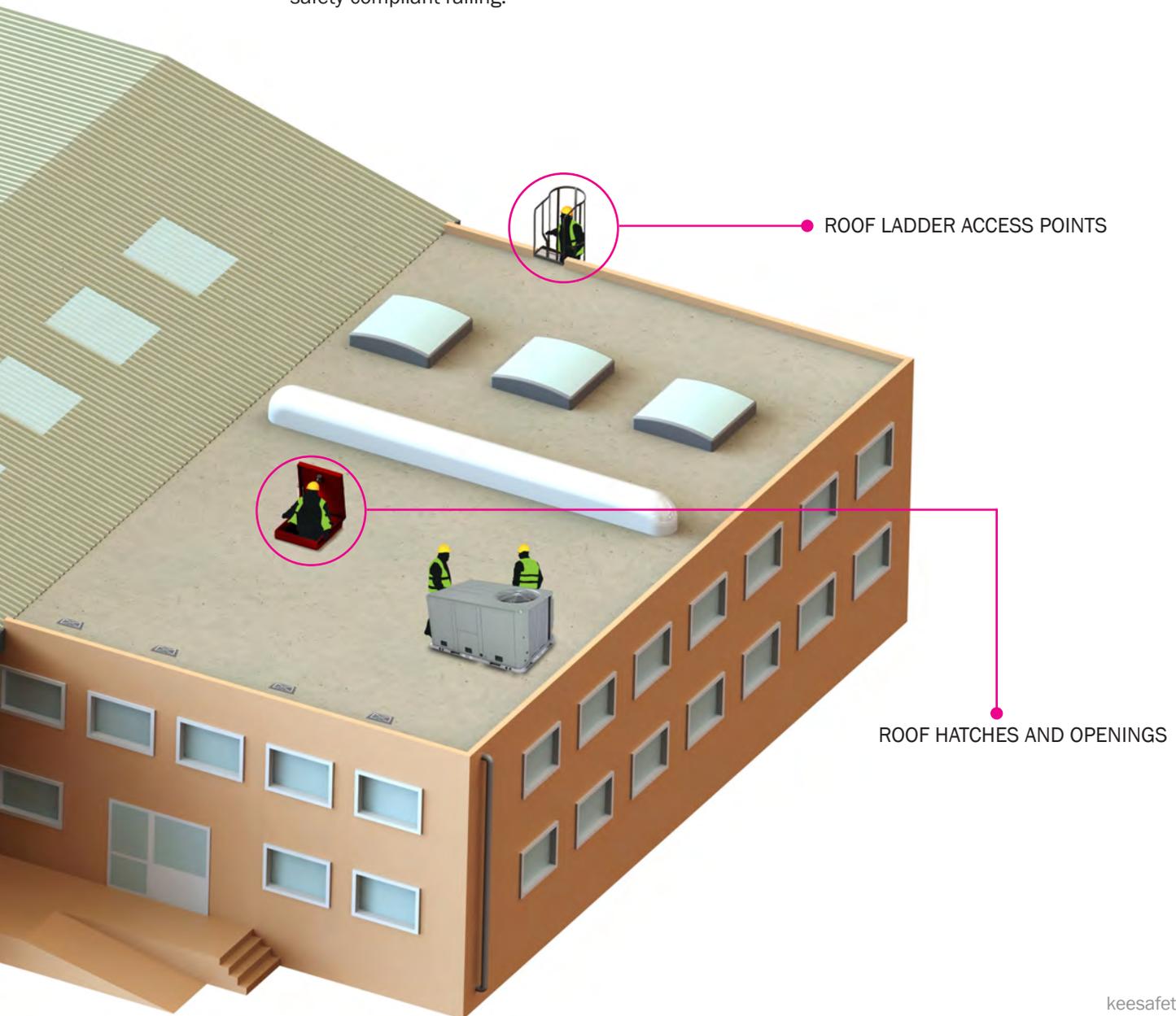
## Identifying Danger Zones: Roof Access

### Understand how workers get on and off the rooftop

When climbing up onto the rooftop to perform maintenance tasks and when exiting the work zone, there is a high potential to slip or fall. Providing safe egress and ingress for workers is critical.

# 1 Access Points

Access points are the most frequented hazard on any roof. Your workers are exposed to this risk twice every time they enter and exit to perform tasks. For example, if your worker is required to access the roof 8 times per year, they are exposed to the access hazard 16 times. All ladders and hatches must be secured with a self-closing gate and safety-compliant railing.



# 1 Access Points

## The Safety Solution for Roof Hatches

Kee Hatch is designed for safe egress and ingress through the roof hatch while the hatch is open. Our self-closing safety gate ensures perimeter protection and secures the entire opening.

Kee Hatch is designed as a complement to our KeeGuard Roof Edge Protection System and provides a complete OSHA compliant, durable, and long lasting solution. Kee Hatch is engineered in the USA and meets the most stringent safety standards.



Opening to the Side of Hinges:



KH-FB-3054  
Covers openings up to 120" long and 36" wide.

Opening in Front of Hinges:



KH-SS-3630  
Covers openings up to 66" long.

### Features

- Simple design - durability
- Flexible system to fit any hatch configuration
- Modular construction speeds installation
- Galvanized steel or Aluminum finish for corrosion resistance

### Easy Integration

- 7 versatile systems available to fit any hatch
- Compliments KeeGuard Roof Edge Protection
- Integrates easily with existing openings and ladderways

### OSHA Compliant

- Exceeds OSHA requirements for railings
- Protects workers while hatch is open
- Safety Gate option ensures safety around the entire opening

## KeeGuard® Ladder Access Kits

Provides permanent guardrail on either side of a fixed ladder with the added protection of a self-closing safety gate



### Features

- Free-standing roof guardrail provides standard 10 feet on either side of the ladder
- Reversible self-closing gate
- Available as a kit
- Galvanized steel finish
- Simple and quick to install

### Benefits

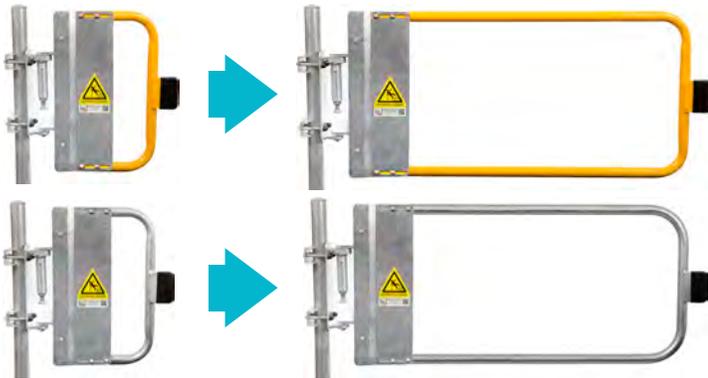
- Forms continual protection from guardrail to the ladder stringer
- Safety Gate option ensures safety around the entire opening
- Corrosion-resistant for long life
- Retro-fit solution for immediate compliance
- Easily clamps to existing ladders/cages

# 1 Access Points

## Kee Gate Standard Self-Closing Safety Gates

The Kee Gate range of self-closing safety gates provide permanent hazard protection for external and internal access applications. Spring-loaded to automatically close behind the user, Kee Gate maintains a safe environment and reduces the possibility for human error.

OSHA compliant Kee Gates are available in hot-dipped galvanized or powder coated safety yellow, are easily adjustable on site and accommodate a wide range of openings.



- Galvanized or Powder-Coated options
- Available in a full-range of sizes from 18 inches up to 48 inches wide
- Fully adjustable on-site with basic hand tools
- Our Smallest 18" Kee Gate is adjustable to fit min. 16.5" to max. 20" widths.
- Our Largest 48" Kee Gate is adjustable to fit min. 46.5" to max. 50" widths.

### Features

- Heavy duty, hot-dipped galvanized steel
- Powder coated or galvanized finish
- Spring-loaded to close automatically
- Perfect for rooftop, exterior, or indoor use
- Supplied with u-bolts for secure, quick assembly to existing structures and posts
- Additional fastener packs available

### Easy Integration

- Easily installed using simple hand tools
- Integrates into existing guardrails and customizable to fit your needs
- Available in 9 sizes from 18"- 48"
- Seamlessly mounts to all Kee Klamp or KeeGuard systems or retrofits to your existing system

### OSHA Compliant

- Exceeds OSHA standards
- Cycle Tested to ensure quality
- Self-closing provides constant safety
- Durable, high quality solution

## Kee Gate Universal Self-Closing Safety Gates Universal Size for Easy Installation in Any Opening

Our Kee Gate Galvanized Universal Self-Closing Safety Gates are a fully-adjustable range of gates for use in industrial environments or rooftop applications. The spring-loaded hinge mechanism ensures that the gate will always close, maintaining a safe barrier to protect people when working at heights. Kee Gates are ideal for protecting openings, ladder/stair access points, roof hatches, walkways, or limiting access to industrial machinery and other restricted areas. Corrosion-resistant to stand up to the elements, Kee Gates are made from hot-dipped galvanized steel and can be powder-coated in safety yellow for visibility.



Spring loaded, self-closing hinge keeps users safe and secure

Connects to uprights with a U-bolt and a combination of washers and nuts.

Modular fittings allow for easy assembly.

Universal size allows gate to be easily installed in any opening up to 40" wide

Safety tested to 50,000 actuations for the most rigorous environments

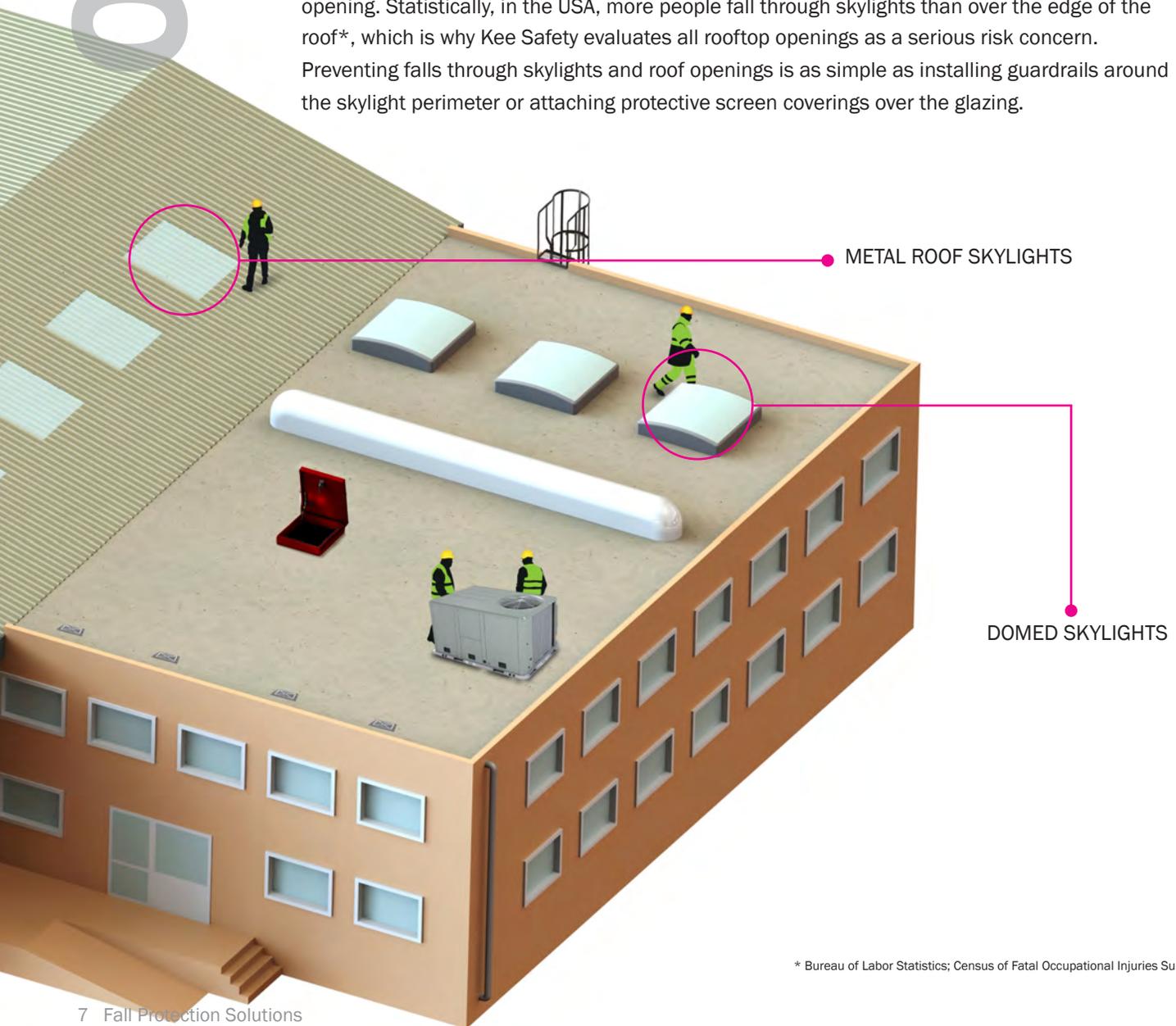
## Identifying Danger Zones: Holes in the Roof

### Skylights

Skylights present a danger for any individual on the rooftop. OSHA considers skylights to be the equivalent of a hole in the roof. Every skylight opening and roof hole must be guarded by a standard skylight screen or a standard railing on all exposed sides.

## 2 Rooftop Openings

Openings are often overlooked, but extremely critical to protect. A worker traversing the middle of the roof has a false sense of security when working far from the roof edge. If workers are carrying equipment, or focused on the job at hand, it is easy to misstep and fall through an opening. Statistically, in the USA, more people fall through skylights than over the edge of the roof\*, which is why Kee Safety evaluates all rooftop openings as a serious risk concern. Preventing falls through skylights and roof openings is as simple as installing guardrails around the skylight perimeter or attaching protective screen coverings over the glazing.



\* Bureau of Labor Statistics; Census of Fatal Occupational Injuries Summary, 2017

# 2 Rooftop Openings

## Free-Standing Skylight Guardrail: Kee Dome™

Kee Dome is a collective, free-standing, fall-protection solution for use around skylights, rooflights and domelights. The modular Kee Dome system allows contractors and maintenance crews to safely and easily access rooftops for repair and maintenance work without the risk of falling through glazed areas. The Kee Dome Skylight Guardrail System is completely free-standing, without risk of damage to the roof membrane.



### Skylight Fall Protection

- Constructed of rigid galvanized pipe
- Kee Dome does not block light
- Simple customization

### Configuration

- Includes upright posts, horizontal rails, and specialized corner connectors
- Bases made of recycled PVC.
- Upright posts lock into position within the base using clamping rings
- Exceeds OSHA requirements
- Completely free-standing
- No damage to the roof membrane

### Installation

- Can fit any size skylight
- Installs easily using standard tools
- Kee Dome can be adapted to inclined roofs up to 5 degrees.
- When installing Kee Dome, all set screws should be tightened to 29 lbs/ft.

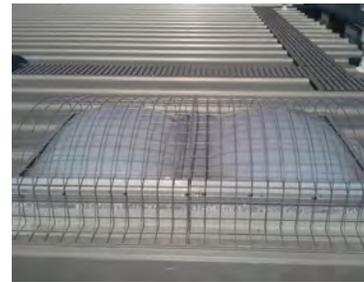
## Kee® Skylight Screens

Perfect for Curb Style skylight installations, Standing Seam metal roof skylights, and for Rib/Corrugated metal roof skylights. Complies to all OSHA standards for skylight fall protection. Available in galvanized or stainless steel, in a standard 4" x 4" grid.



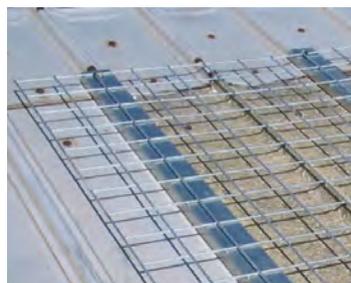
### Non-Penetrating Curb Style Screen: Model STS

- Screen attaches to the outer frame
- No risk of leaking
- Minimum 12" wide x 12" Long
- Maximum 70" wide x 120" Long



### Curb Style Screen: Model SRS

- Metal screen rests on the roof surface
- Transfers impact of the fall load directly to the roof and not the skylight
- Cal-OSHA compliant
- Minimum 12" wide x 12" long
- Maximum 70" wide x 120" long



### Standing Seam Screen: Model SCS

- Clamps to the standing seam
- No penetration of roof or skylight
- 24" x 128" Long



### Corrugated Screen: Model SSS

- Clamps directly to the metal rib
- Uses two support channels centered on the skylight for secure installation
- Fully customizable to fit your skylight
- 40" x 128" Flat

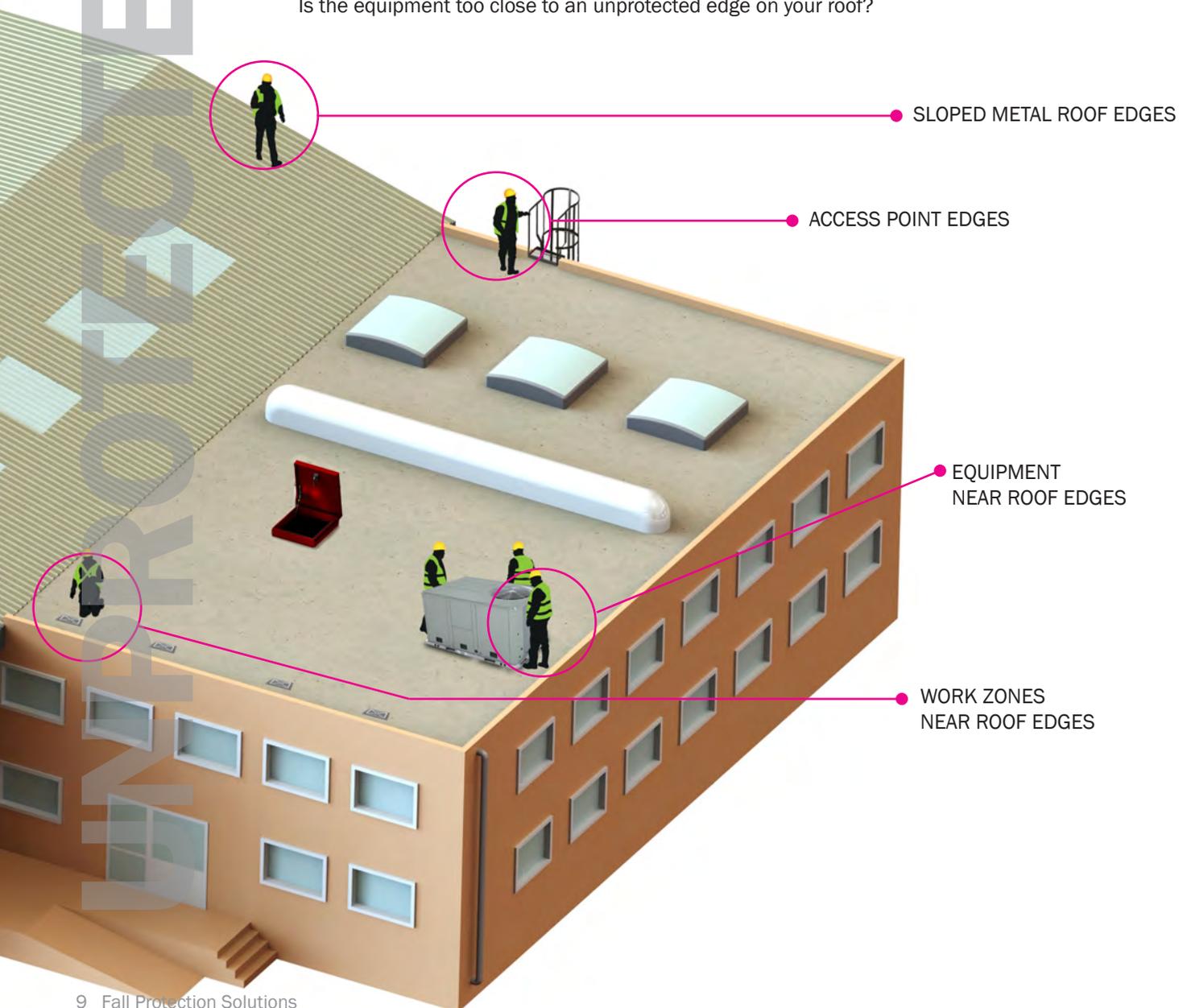
## Identifying Danger Zones: Roof Edges

### Protecting the Perimeter

When access to the entire roof is authorized, the safest, most comprehensive solution is a perimeter railing system that surrounds and protects all roof edges.

### 3 Unprotected Edges

The edge of the roof is the most visible hazard, and typically the hazard most people want to protect first. Proximity to the roof edge is a significant factor in identifying the probability of an accident occurring. **OSHA Code states that if a worker can be exposed to a fall, then they must be protected.** Frequently, a worker's purpose for accessing the roof is to service a piece of equipment. Is the equipment too close to an unprotected edge on your roof?



# ROOF ZONES

## ZONE DEFENSE: Unprotected Edges

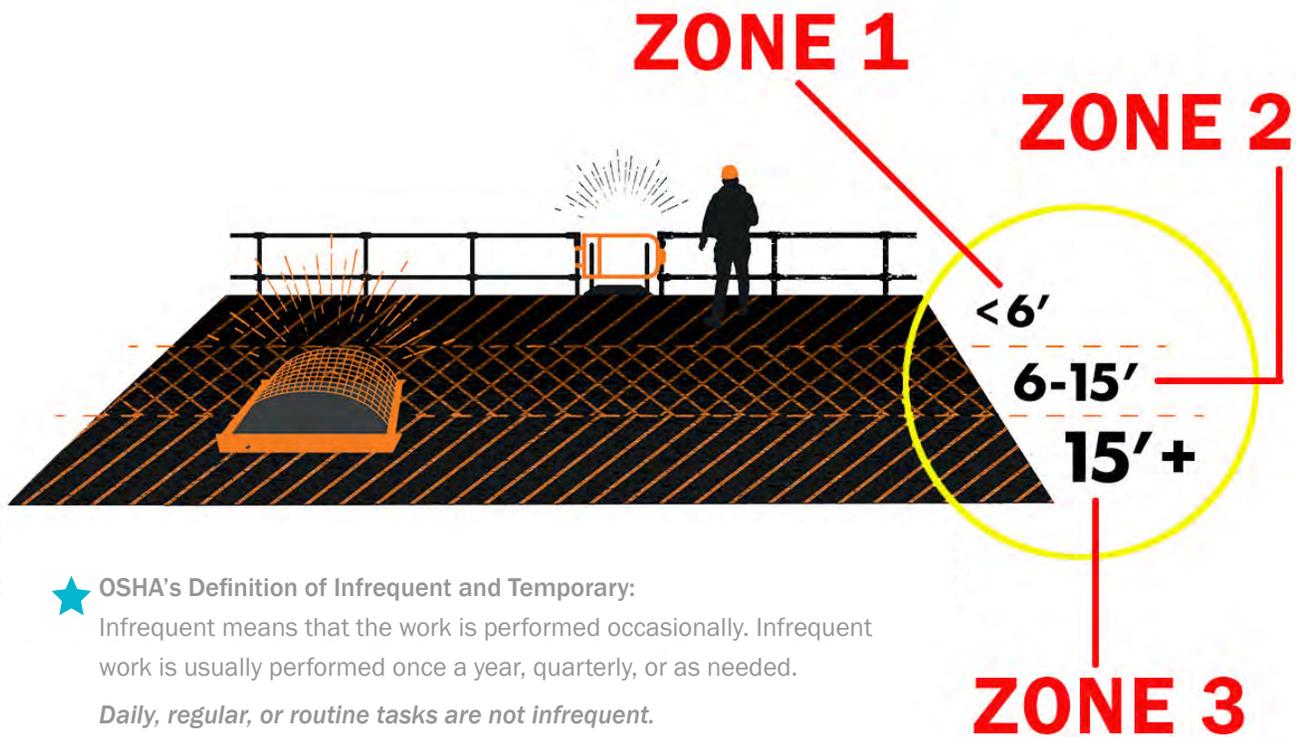
OSHA standards have been updated to reflect industry fall protection requirements. OSHA compliance codes are central to how we assess the rooftop during a Safety Audit.

When work is performed less than 6 feet (1.8 m) from the roof edge, OSHA allows for employers to protect its people by using a by a guardrail system, safety net system, travel restraint system, or personal fall arrest system.

When work is performed at least 6 feet (1.8 m) but less than 15 feet (4.6 m) from the roof edge, OSHA allows a guardrail system, safety net system, travel restraint system, or personal fall arrest system. The employer may use a designated area when performing work that is both infrequent and temporary.

When work is performed 15 feet (4.6 m) or more from the roof edge, the employer must: protect each employee from falling by a guardrail system, safety net system, travel restraint system, or personal fall arrest system or a designated area.

OSHA does not require the employer to provide any fall protection, provided the work is both infrequent and temporary; and implement and enforce a work rule prohibiting employees from going within 15 feet (4.6 m) of the roof edge without using fall protection in accordance with paragraphs (b)(13)(i) and (ii) of this section.



### ★ OSHA's Definition of Infrequent and Temporary:

Infrequent means that the work is performed occasionally. Infrequent work is usually performed once a year, quarterly, or as needed.

*Daily, regular, or routine tasks are not infrequent.*

Temporary means that the work is brief or short. Temporary tasks usually take less than two hours to complete and are not complicated.

# 3 Unprotected Edges

## KeeGuard®: The Most Trusted Name in Safety Railing

On a flat or low slope roof, a protected perimeter limits access to the leading edge. Installing a modular, free-standing railing system that does not penetrate the roof membrane provides a permanent, safe and dependable barrier for the roof edge. KeeGuard railing systems are OSHA compliant and third-party tested for reliability.

### KeeGuard® Features

- Modular component system for multiple configurations
- Adaptable to varying angles and radius edges
- Accommodates ladders, equipment and rooftop obstructions
- Simple counterbalance construction made from 100% recycled PVC
- Durable galvanized finish is corrosion resistant
- Available in a full range of powder coated RAL colors



### KeeGuard® Benefits

- Non-penetrating solution - roof membrane will not leak
- Passive barrier that protects all personnel; no training required
- Integrates easily with your current fall protection products
- Lower installation cost than fabricated pipe
- No rooftop parapet required

### Installing KeeGuard®

- KeeGuard Roof Edge Fall Protection System includes pipe railings, uprights, bases, counterweights and fittings
- No specialized labor or work permits, no welding
- Tools required: torque wrench or hex key



## Counterbalance • The Physics of Cantilever Design.

Modular and durable, our component-based solution uses counter-weight engineering. The simple cantilever principle provides unrivalled strength and safety. The heavy-duty KeeGuard bases are manufactured using molded, 100% recycled PVC. Each 30 pound base is positioned at specific intervals to create a stable, protective barrier on the rooftop.



# 3 Unprotected Edges

## KeeGuard® TopFix: Roof Edge Protection for Metal Roofs

- KeeGuard® TopFix provides a smart solution for metal profile and standing seam roofs
- Perfect for metal roofs up to a 45 degree pitch
- Available in hot dipped galvanized steel or aluminium finishes
- Corrosion resistant, minimum maintenance
- Exceeds OSHA standards for safety



### Installation

- Easily installed with basic tools
- No welding, bending or threading on site
- Base plates for standing seam roofs attach using a non-penetrative 2-part clamp system
- Bases for metal profile roofs are secured using rivets and sealing strip to maintain roof integrity

### Versatility

- Components are adaptable to meet unique design requirements and non-standard roof applications
- Horizontal baseplates are custom fabricated to meet the exact specifications of your metal roof

## KeeGuard® Contractor: Portable Roof Edge Fall Protection

On a flat or low slope roof, a protected perimeter limits access to the leading edge. Installing a modular, free-standing railing system that does not penetrate the roof membrane provides a permanent, safe and dependable barrier for the roof edge. KeeGuard railing systems are OSHA compliant and third-party tested for reliability.

### KeeGuard Contractor Benefits

- Meets OSHA regulations for fall protection with a temporary, portable railing system
- All guardrail components are galvanized for extreme durability
- Base weights constructed from recycled PVC for long life and no rusting
- Modular design or fast assembly using a torque wrench or hex key

### KeeGuard Contractor Engineering

- Strong, galvanized finish
- Powder coating in Safety Yellow is available
- 98 lb. base ensures stability
- Base weights incorporate comfortable carrying handles for easy portability
- Complete with slots for optional toeboard

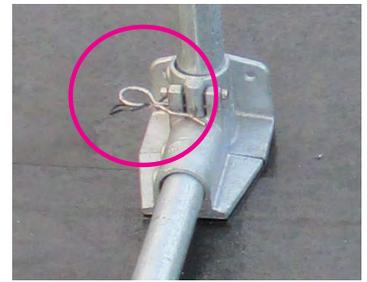


# 3 Unprotected Edges

## KeeGuard® FoldShield: Folding Safety Rail System

Installing this hinged version of our standard KeeGuard® safety railing, allows the guardrail to be easily lifted into place when work is in progress and then quickly folded back down when work is finished. A simple locking pin is all that needs to be removed from the base fitting to allow the hinge to pivot. This main fitting can only pivot in one direction for safety with no possibility of the guardrail folding the wrong way.

- Foldable roof edge protection system: folds down when not in use
- Maintains a buildings aesthetic along the roof line
- Recycled PVC base weights do not penetrate the roof surface
- Available in galvanized steel or aluminium finish for corrosion resistance
- Meets OSHA standards for safety as long as the worker is tied off while lifting the guardrail into place
- Designed for use on roof slopes up to 5°



Locking pin allows the guardrail to pivot.

## Kee® Mark Warning Lines: Safety Demarcation

Kee® Mark is a sturdy, freestanding warning line solution that is durable and cost effective for both interior and exterior settings. Portable Kee® Mark is engineered to stand its ground, job site after job site. Meets OSHA standard for warning lines.

### Features

- Modular, free-standing system
- Simple, modular design uses trusted and tested galvanized Kee Klamp components
- Heavy-duty rubber bases have easy-grip handles
- Stainless steel cable is vinyl coated in safety yellow for greater visibility and long-term use
- Heavy-duty nylon flags available in Safety Yellow or Safety Orange

### Benefits

- Quick set-up for easy installation
- Corrosion-resistant components and uprights stay in place with a hidden set screw
- Solid, dependable bases store easily
- Stainless steel shackles make adjusting the formation quick and easy



## One Goal. Diverse Options: Protecting the Roof Edge

### Use Multiple Solutions to Secure the Perimeter

Every rooftop is different. Using a hybrid guardrail system to protect workers from the frequent and infrequent hazards will provide OSHA compliance and peace of mind on the rooftop.



#### **KeeGuard® TopFix**

Permanent, non-penetrating roof edge protection for metal profile and standing seam roofs



#### **KeeGuard® Guardrail**

Permanent, modular, and free-standing barrier protection that will not penetrate the roof.



#### **Kee® Mark Warning Lines**

Portable, modular, and free-standing for visually defining a safe work zone. Minimal distance: 6' from the roof edge.



#### **KeeGuard® Contractor**

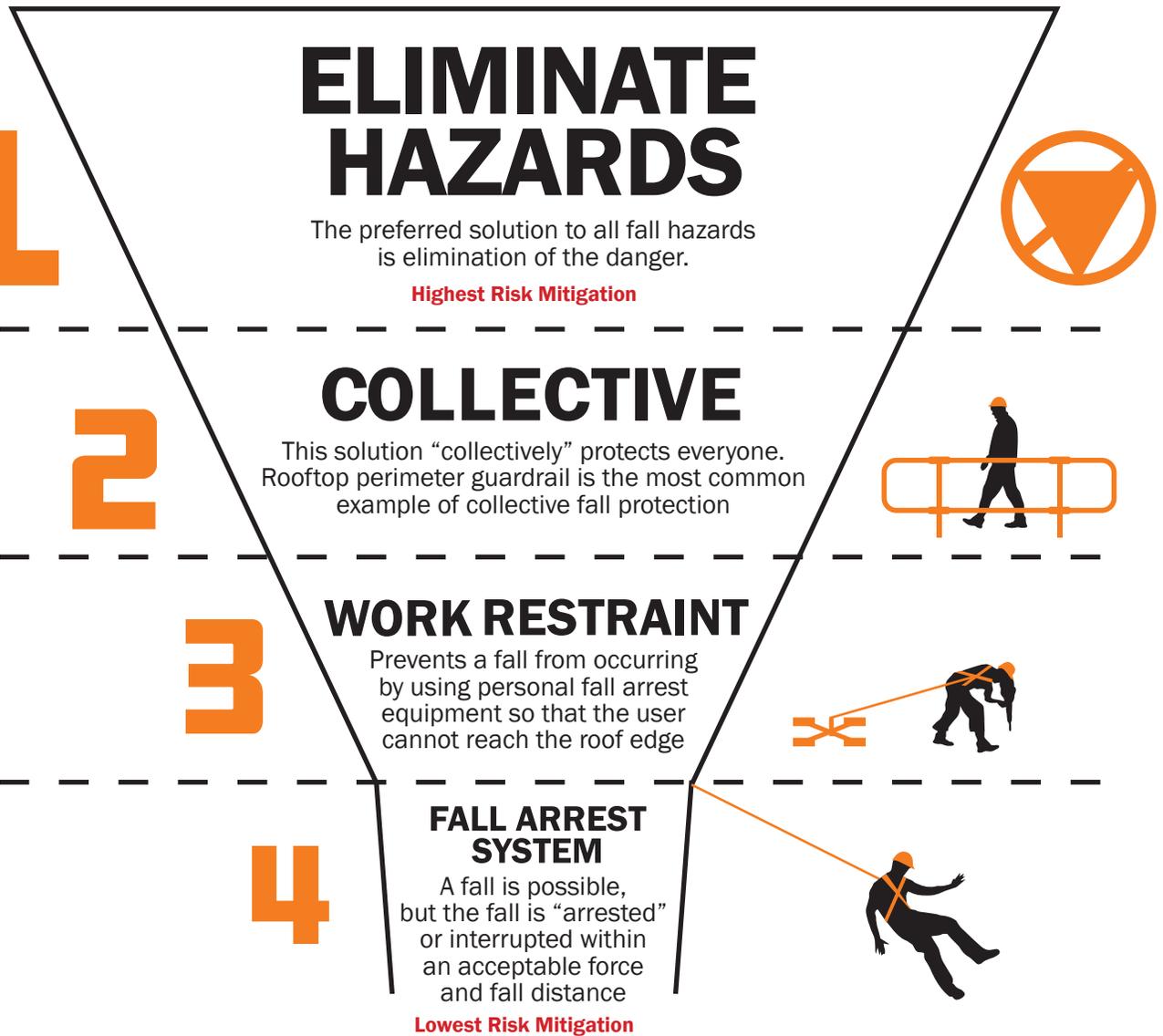
Portable, modular, and free-standing guardrail that will not penetrate the roof.

## The Hierarchy of Fall Protection

### Smarter Solutions for Rooftop Safety

A truly comprehensive rooftop solution follows the Hierarchy of Fall Protection, the gold-standard of safety procedures. An expert starts by inspecting the roof site for potential fall hazards. From there, a complete system solution and recommendations that descend down the four levels of the hierarchy—from simple, sensible approaches for eliminating risks all the way down to lifesaving personal protection systems.

Collective Systems require no additional training to use. Work Restraint and Fall Arrest Systems both require a high level of user competency, training and additional inspection to be used effectively.



## OSHA General Duty Clause:

Section 5(a)(1) of the Occupational Safety and Health Act, requires that each employer furnish to each of its employees a workplace that is free from recognized hazards that are causing or likely to cause death or serious physical harm.

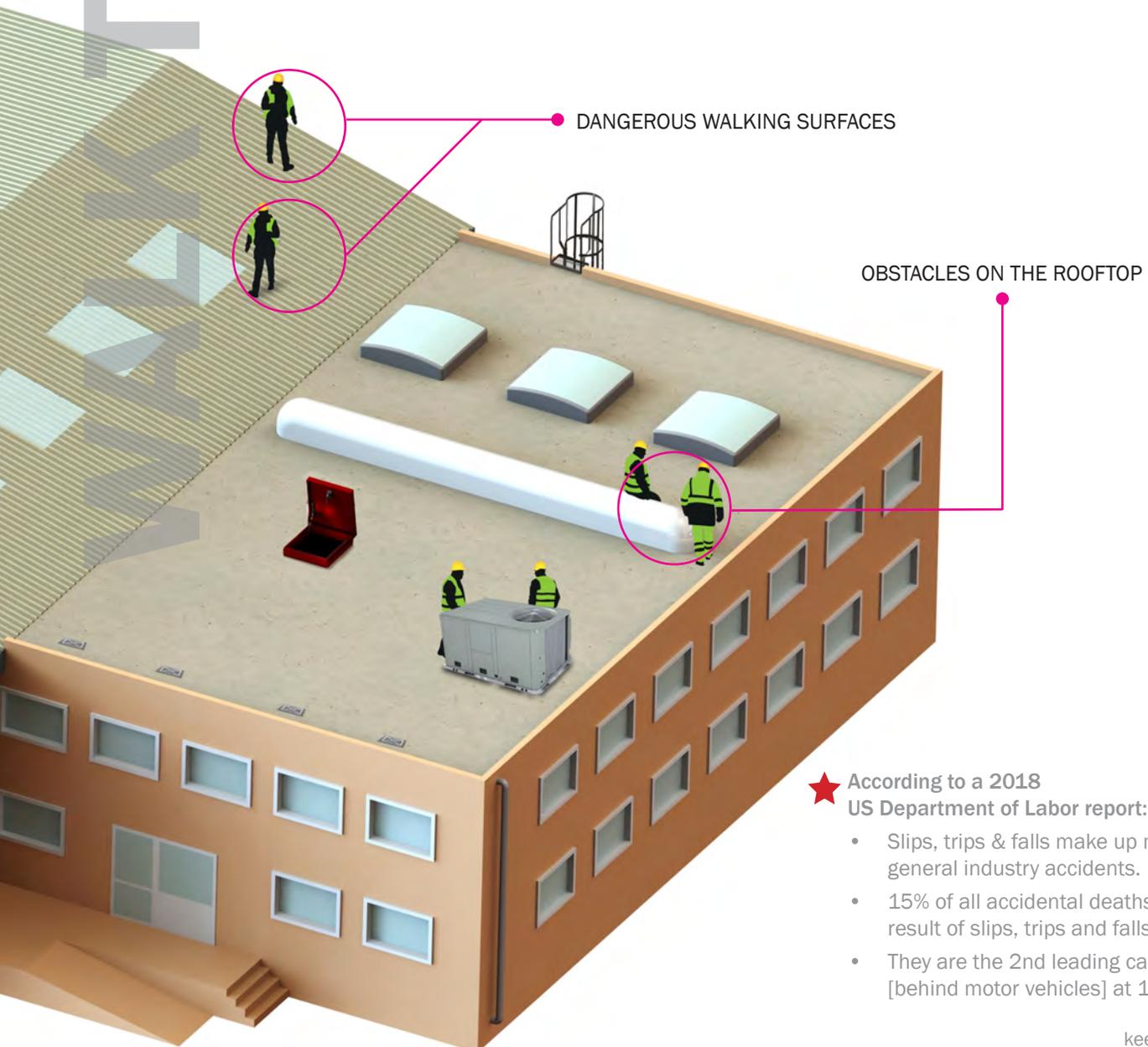
## Identifying Danger Zones: Dangerous Walking Surfaces

### Obstacles on the Rooftop often Hinder Access to Work Zones

Rooftop safety includes providing a safe and efficient path across the rooftop to reach drains, HVAC units or other equipment that requires maintenance. Hazards include obstructed routes and changes in roof level where slips, trips and falls are likely.

## 4 Obstacles and Dangerous Walking Surfaces

Understanding the path your workers take across the roof is necessary for a complete fall protection assessment. Obstacles on the roof force workers to unsafely climb over or step around the obstruction, often placing workers at risk by walking too close to the roof edge. If you would not allow a trip and fall hazard inside your facility, why allow one on your facility?



★ According to a 2018 US Department of Labor report:

- Slips, trips & falls make up majority of general industry accidents.
- 15% of all accidental deaths are the result of slips, trips and falls.
- They are the 2nd leading cause of death [behind motor vehicles] at 12,000 per year

# 4 Walking the Roof: 2 Safety Solutions in 1 Integrated System

## Kee Walk with Guardrail: The Modular Multi-Tasker

OSHA-compliant rooftop walkway with integrated safety railing is suitable for all roof types. Preserves the rooftop from foot traffic damage by uniformly distributing the pedestrian load over its route. Accommodates roof slopes up to 35° and provides safe rooftop access in all weather conditions.

### Here's the Pitch

#### Up to 35° Roof Slope.

Kee Walk with Guardrail is engineered for all roof types including pitched metal profile and standing seam roofs up to a 35° slope.

### Stands Up to the Elements

#### Dependable when the Weather Isn't.

Accessing sloped roofs presents a challenge especially in wet, windy or snowy conditions. Kee Walk with Guardrail is the fall protection solution wherever sloped rooftops meet inclement weather. Anti-slip treads and corrosion-resistant guardrail provide a durable, safe access solution in any environment.

### Stays the Course

#### Walk It. Climb It. Traverse It.

When accessing the roof on a slope, climbing up or traversing an uneven surface, Kee Walk with Guardrail provides a level pathway over a dedicated course. This preserves the rooftop from damage by uniformly distributing the pedestrian load over its route.

### Walk this Way

#### Single or Dual-Sided Handrail

Our corrosion-resistant guardrail can be installed on one or both sides of the Kee Walk platforms. The option to integrate a single or dual handrail system provides a robust and versatile safe access solution.



### Kee Walk with Guardrail Features

- Engineered for use on all roofing systems
- Accommodates sloped roofs up to 35° pitch
- Load-tested for compliance to OSHA Code 1910.29(b)(3)
- Slip-resistant treads available in standard Nylon grating
- Customizable design is adjustable to fit any rooftop

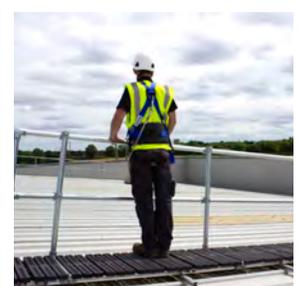


### Kee Walk with Guardrail Benefits

- Non-penetrating solution - roof membrane will not leak
- Protects metal roofs from damage by foot traffic
- Collective system: protects all personnel; no training required
- Cost-effective: combining a defined pathway with KeeGuard® handrail
- Integrates easily with our fall protection products including KeeLine Horizontal Lifelines and Step-Over Platforms to form a complete rooftop fall protection solution

### Installing Kee Walk with Guardrail

- Walkway modules supplied as 5 foot and 10 foot pre-assembled sections
- Guardrail can be installed on one or both sides of Kee Walk
- Modular galvanized steel guardrail for easy and fast on-site installation
- Available as a retrofit onto your existing Kee Walk system or installed as a new fall protection solution on your rooftop
- Professional installation services available



# 4 Walking the Roof: Safe Access Platforms and Step-Overs

## Rooftop Step-Overs: Get Over It

Providing Safe Access Over Rooftop Obstructions and Changes in Level



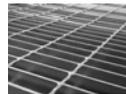
Keefe Safety Step-Overs provide a safe route over objects and obstructions on the rooftop. Accommodates metal profile, standing seam and other roof styles without penetrating the roof membrane.

### Platform Features

- Available in Aluminum or Galvanized Steel for long lasting protection
- Modular system is fully customizable
- Slip-resistant treads

### Platform Benefits

- Excellent strength and corrosion resistance
- Non-penetrating system: no roof leaks
- Modular components for easy installation
- Approved for all roof types



### Design Options

- **Flooring:** high grade nylon treads, checker plate or grating
- **Base Feet:** Roof mounted, fixed feet, or a combination of both
- **Platform Size:** Variable heights, variable lengths - customizable

### OSHA Compliant

Safe Access Platforms are designed and constructed to meet OSHA safety standards for rooftop fall protection.

### Delivery and Installation

All Keefe Safety custom-designed platforms are delivered with detailed drawings clearly showing how the platform is assembled for the highest level of safety.

The full range of components, railing, stair treads, flooring and toe boards are in-stock for fast delivery. Smaller platforms can be delivered fully assembled (upon request) and will only require a routine inspection before use.

Larger platforms can be delivered semi-assembled in modular sections or as components in a flat pack container. Keefe Safety professional installers will assemble the platform in position on the roof site for you (upon request).



## Mini Step-Overs: Modular Kits

Provides easy navigation over conduit, pipe work and other low roof obstacles with non-slip treads for durability in any weather and weighted bases for optimal stability. Quick set up and minimal site disruption.

WORKING AT HEIGHT

## Identifying Danger Zones: Personal Fall Protection

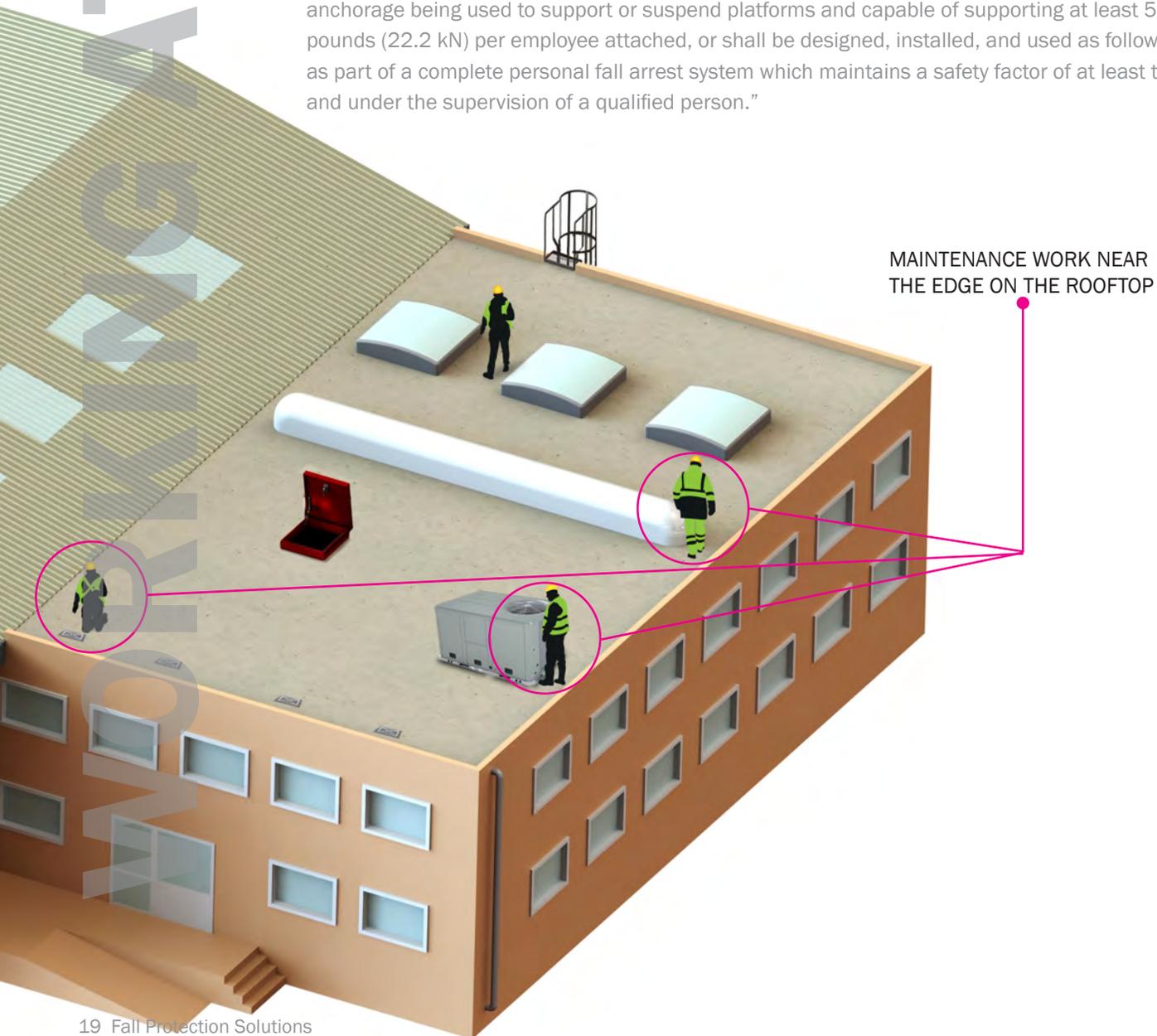
### Anchor Points for Travel Restraint or Fall Arrest

In a Fall Restraint system the roof anchor is used as part of a complete fall protection system. Such systems typically include a full body harness and a lanyard or restraint line to prohibit the user from reaching the leading edge of the roof.

## 5 Working Safely at Height: Roof Anchors

Anchor Points and Anchorage Systems are designed to provide workers with freedom of movement on the rooftop while securely attached to the anchor point at all times.

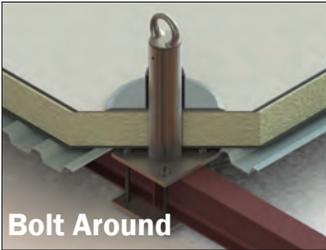
“Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds (22.2 kN) per employee attached, or shall be designed, installed, and used as follows: as part of a complete personal fall arrest system which maintains a safety factor of at least two; and under the supervision of a qualified person.”



# 5 Working at Height: Versatile Roof Anchors

## Kee Rigid Anchors:

## Rooftop Solutions for Safe Building Maintenance and Fall Protection

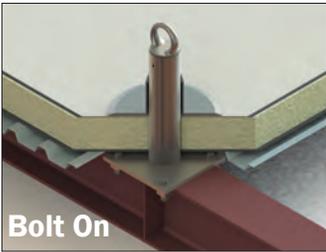


### Variety of Applications

- Suspended Platforms
- Window Washing Operations
- Equipment Tie-Back
- Fall Protection
- Horizontal Lifelines

### Multiple Roof Types

- Flat or Low-Slope Roofs
- BUR Membrane System
- Single-Ply Membrane
- Modified Bitumen
- Green Roofs
- Metal Roofs: with underlying structures of steel, concrete or wood



### 3 Diverse Attachment Points



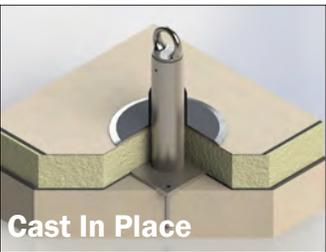
**Forged D-Ring**



**Stainless Steel U-Bar**

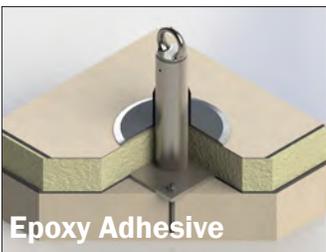


**Tapped Hole**



### Why Kee Rigid Anchors?

- **Quality Assurance:** Every anchor is designed to resist a pull-out force of 5400lbs applied in ANY direction without permanent deformation
- **Corrosion Resistant:** Fully insulated posts prevent condensation from forming inside, and enhance product longevity
- **Temperature Consistency:** Insulated posts stop heat conductivity from leaving the building to prevent thermal bridging
- **Durability:** Galvanized to ASTM A123 for the highest level of reliable performance
- **Trusted:** Dynamically and statically tested and proven to meet all relevant North American codes and standards to ensure compliance



### Code Compliance: USA

- **OSHA 29 CFR 1910.66:** Powered Platforms for Building Maintenance
- **OSHA 29 CFR 1910.140:** Personal Fall Protection Systems
- **Cal/OSHA Title 8 Regulations Section 3291:** Permanent Rooftop Installations
- **ANSI/IWCA I-14.1:** Window Cleaning Safety
- **ANSI Z359.18:** Safety Requirements for Anchorage Connectors for Active Fall Protection Systems
- **ANSI/AISC 360-16:** Specification for Structural Steel Buildings



# 5 Working at Height: Horizontal Lifelines

## KeeLine®: The Engineered Lifeline Solution

On a flat or low slope roof, a protected perimeter limits access to the leading edge. Installing a modular, free-standing railing system that does not penetrate the roof membrane provides a permanent, safe and dependable barrier for the roof edge. KeeGuard railing systems are OSHA-compliant and third-party tested for reliability.

### Reliable Performance

- Rigorously tested on built roofs
- Endorsed by 3rd-party safety validation
- OSHA compliant engineering

### Simple Design

- Complete freedom of movement on the rooftop
- Workers are securely attached to the lifeline at all times
- Open design - nothing “hidden” in a closed container

### Easy Integration

- Engineered for multiple roof types
- Allows spans of up to 39' between posts
- Can be utilized by up to three users at any one time

### Cost Effective

- Components are corrosion-resistant for low maintenance
- Can be mounted directly to concrete, steel, brick or stonework
- Fast, easy installation



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## KeeLine® Innovative Upright Post System

KeeLine® incorporates a cutting-edge post and base plate design for use on membrane roofs. By utilizing the same range of brackets as standard roof systems, KeeLine can be installed quickly and easily.

Membrane Roof



Profiled Metal Sheet Roof



Standing Seam Roof



# 5 Working at Height: Intelligent Engineering

## KeeLine Calculator\*: Get On Line

KeeLine® Training provides your company with primary access to the new on-site KeeLine® Calculator. This cutting-edge web application is securely hosted online and provides you with real-time engineering calculations on any HLL layout. The digital program offers a mobile-optimized architecture making it the perfect tool for immediate design verification in the field, instantly creating a bill of materials and providing pricing for your company.



## Work with Confidence

**Technical Information Package: Peace of Mind.**

Ensures the system is compliant with OSHA and ANSI regulations and is part of a complete personal fall arrest system that maintains a safety factor of at least two.



## Price Competitive

**Optimized System. Minimal Components.**

Materials list immediately generated within the Calculator.

## In-Stock Inventory

**Low Lead Times. Increased Productivity.**

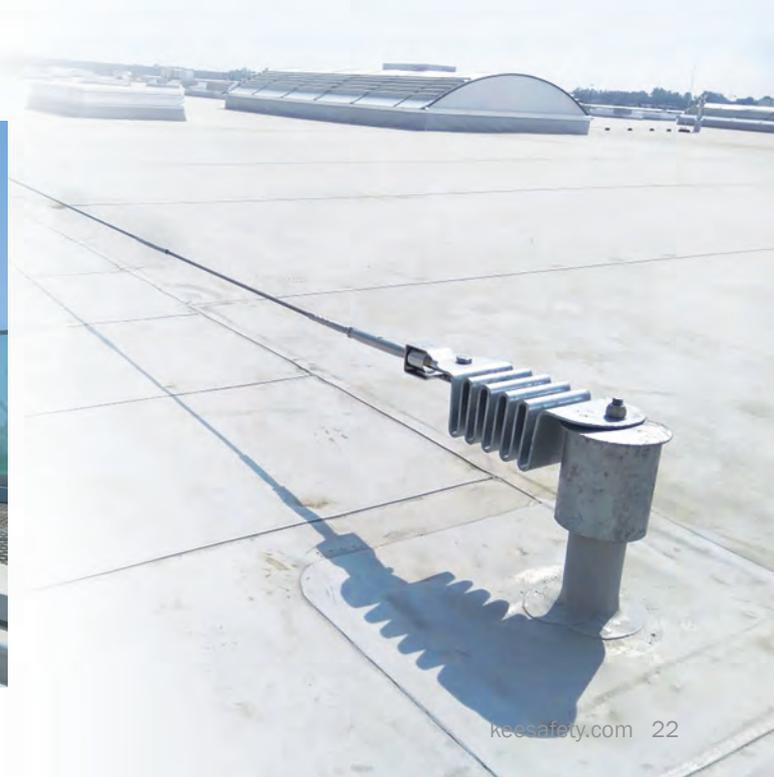
Keeping inventory in-stock means prompt delivery with no down time waiting for materials.

## Technically Superior

**Absorbs Energy. Minimizes Impact.**

Energy absorber is calibrated to impart lower forces into the system in a fall.

\* Available exclusively to trained Kee Safety Integrators.



# 5 Working at Height: Deadweight Anchor Systems

Our portable deadweight anchor systems provide personal fall protection for working safely on the roof. Kee® Anchor fall restraint systems are designed for use where installation of passive fall protection systems are not applicable or where permanent anchor devices are not viable.

## Weightanka Non-Penetrating, Portable Fall Protection

Weightanka is a mobile, deadweight anchor system for use on roofs up to 5 degree pitch. The quick-to-assemble system features a central pedestal attachment point which raises the height where the arrest force is applied. This personal fall protection system is designed for use in specific, designated work zone areas on the rooftop. The system can be used on multiple roof surfaces in wet or dry conditions, including:

- Single Ply Membrane
- Asphalt
- Mineral Felt
- Concrete
- Stone Chippings (Brushed)



### Features

- Fall restraint for up to 2 workers
- Restraint option must ensure that it is not possible for user to approach within 20 inches of a roof edge or other opening
- Rubber-molded bases are engineered to maximize grip
- Corrosion-free: galvanized to BS EN ISO 1461 standards
- Raised central pedestal reduces distance of travel during a fall arrest event

### Versatility

- For use on roofs up to 5-degree pitch
- Non-penetrating , portable solution
- Modular deadweight system is easy to install
- Safe solution in wet or dry conditions
- Suitable for multiple roof types

# 5 Working at Height:

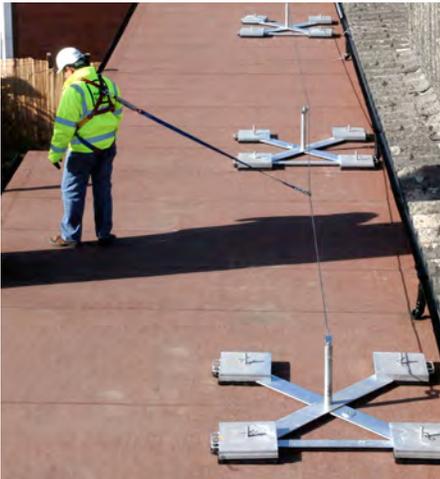
## Deadweight Anchor Systems for Flexible Safety Lines

### Wireanka Anchor Device System for Horizontal Lifelines

Wireanka is a system of deadweight anchor devices that supports flexible safety line at each anchor.

It is intended for use on flat roofs, in temporary situations, or where it is preferable that penetration of the roof surface be avoided and a larger area of the roof needs fall protection.

The system can be used on multiple roof surfaces in wet or dry conditions.



#### Features

- Rubber molded weights prevent rubber pads peeling at edges
- Does not penetrate roof surface
- Galvanized to ISO 1461
- Base weights fully encased in rubber molding

#### Permitted Number of Users

- Fall Restraint: Up to 2+ users may be attached at any one time
- Restraint option must ensure that it is not possible for user to approach within 20 inches of a roof edge or other opening\*
- Special configurations can allow for additional users at an extra cost
- Fall Arrest options available at an additional cost

\* For minimum edge distance and minimum free fall distance please contact Kee Safety's technical department.



# Using an Integrated Solution: A Complete Rooftop Fall Protection System

## KeeGuard® Topfix

Non-penetrating guardrail for all metal roof types including standing seam and metal profile for safety at the highest level.

## Kee® Skylight Screen

Skylights are considered a hole in the roof - an OSHA safety hazard. The unique construction and mounting design allow the Kee Skylight Screen to be attached without penetration, maintaining the integrity of the roof and the skylight.

## Kee Hatch®

A safety access and railing system designed for secure egress/ingress through a dedicated roof hatch.

## Kee Gate®

Provides permanent protection for any openings, ladder/stair access points, roof hatches and restricted areas, where access for roof maintenance is required.

## Kee Dome®

A free-standing, modular solution deployed around skylights, roof lights and dome lights, allowing access to rooftops without the hazard of falling through glazed areas.

## Safe Access Platform [SAP]

When obstacles exist on the rooftop (piping, ventilation systems, partitions between buildings or level changes) SAPs can be custom designed to provide safe access over those hazards.

## KeeGuard®

On a flat roof, a protected perimeter limits access to the leading edge. Installing a modular, free-standing railing system that does not penetrate the roof membrane provides a safe barrier to the roof edge.

## Kee Walk®

On a standing seam metal roof, or metal profile roof, a level walkway system provides a safe, anti-slip surface to avoid tripping over the seams, crowns and valleys.

## Kee Walk® with Guardrail

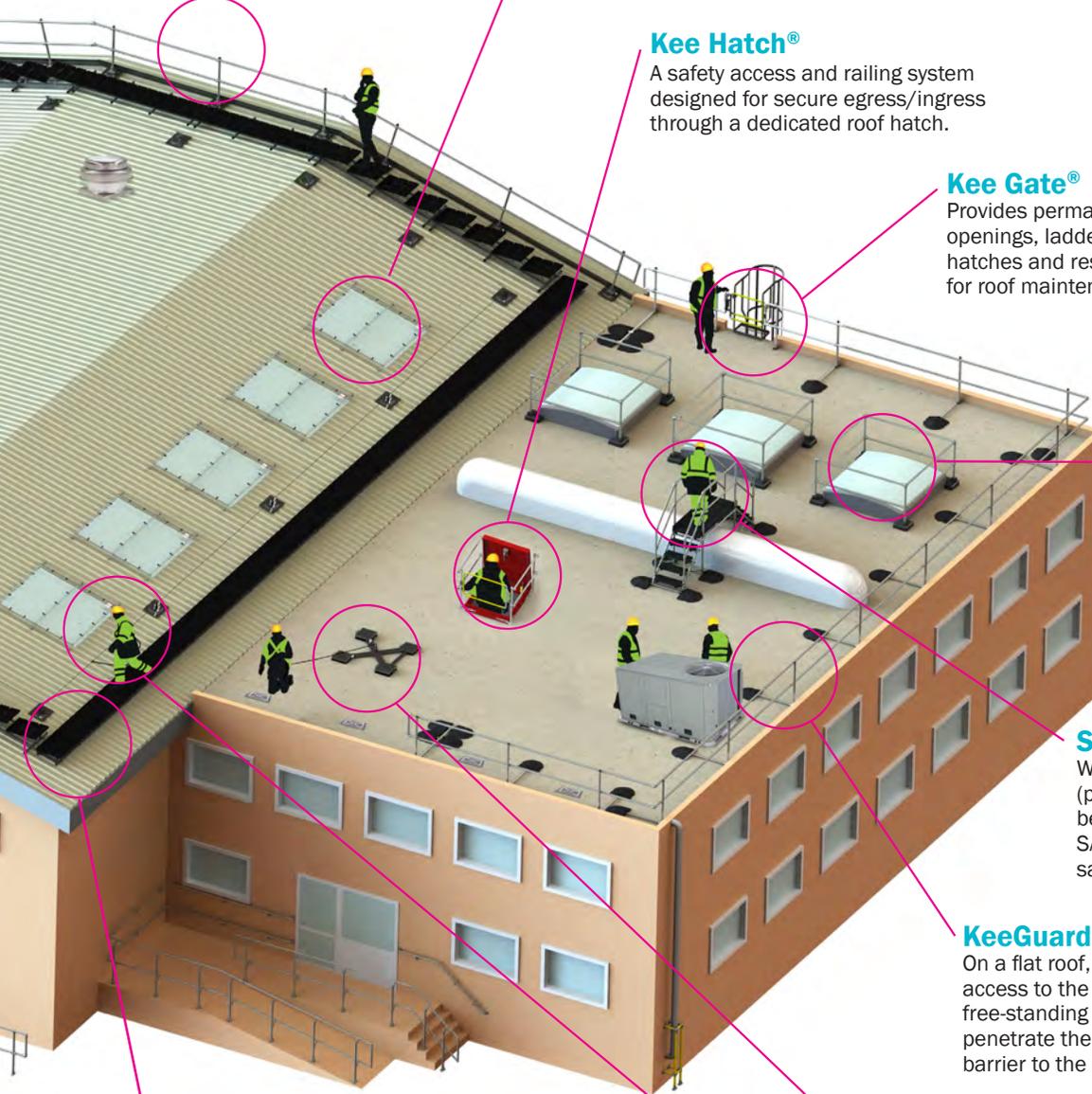
Kee Walk with integrated Guardrail provides sturdy handrail support securely attached to non-slip tread for dependable foot traction and balance where roof surfaces are uneven or slippery.

## Kee Anchor® Weightanka

A modular, dead-weight anchor fall prevention system, used with personal fall protection equipment, allows for safe freedom of movement around the roof space.

## KeeLine® Horizontal Lifelines

Horizontal safety lines provide continuous protection when working at heights. Our 39-foot system accommodates up to 3 users and can be mounted either directly onto the roof surface or on to the building structure.



## OSHA Industry Standards

OSHA standards have been updated to reflect industry fall protection requirements. Fall Protection OSHA standards are central to the use of this Rooftop Safety Audit.

Discussions on roof safety can be overwhelming regarding OSHA regulations, inspections, and regional standards. Kee Safety can assist you with a full understanding of the OSHA codes that are applicable to your specific rooftop safety concerns.

### 1 Access Points: 1910.28(b)(3)(iv)

Each employee is protected from falling into a ladder way, floor hole, or ladder way platform hole by a guardrail system and toe boards erected on all exposed sides, except at the entrance to the hole, where a self-closing gate or an offset must be used\*

*\*Chains are no longer permitted for use as a fall protection system on rooftop access points.*

### 2 Rooftop Openings: 1910.28(b)(3)(i)

Each employee is protected from falling through any hole (including skylights) that is 4 feet (1.2 m) or more above a lower level by one or more of the following:

- Covers
- Guardrail Systems
- Travel Restraint Systems
- Personal Fall Arrest System

## Key OSHA Terms:

### Definition of Temporary and Infrequent

Infrequent means that the work is performed occasionally. Infrequent work is usually performed once a year, once a month, or as needed. Examples include annual equipment maintenance, replacing batteries monthly or quarterly, and responding to occasional equipment breakdowns.

Daily, regular, or routine tasks are not infrequent.

Temporary means that the work is brief or short. Temporary work takes less time than the time it takes to set up conventional fall protection. Temporary tasks usually take less than two hours to complete and are not complicated. These tasks can be completed in a single visit without having to climb up and down multiple times. Examples include changing a filter in a rooftop HVAC system, replacing a part on a satellite dish, and resealing the flashing around a skylight.

### 3

### Unprotected Edges: 1910.28(b)(13)

When work is performed less than 6 feet (1.6 m) from the roof edge, the employer must ensure each employee is protected from falling by a guardrail system, safety net system, travel restraint system, or personal fall arrest system.

When work is performed at least 6 feet (1.6 m) but less than 15 feet (4.6 m) from the roof edge, the employer must ensure each employee is protected from falling by using a guardrail system, safety net system, travel restraint system, or personal fall arrest system. The employer may use a designated area when performing work that is both infrequent and temporary.

When work is performed 15 feet (4.6 m) or more from the roof edge, the employer must: protect each employee from falling by a guardrail system, safety net system, travel restraint system, or personal fall arrest system or a designated area.

The employer is not required to provide any fall protection, provided the work is both infrequent and temporary; and implement and enforce a work rule prohibiting employees from going within 15 feet (4.6 m) of the roof edge without using fall protection in accordance with paragraphs (b)(13)(i) and (ii) of this section.

# Keep Safety: Your Fall Protection Experts



Keep Safety is the leading expert and global manufacturer of safety components and fall protection systems. We are fully committed to Separating People from Hazards.

Established in 1934, Keep Safety has a proud history of engineering, manufacturing, and supplying the most trusted fall protection solutions, safety railing systems, and safe access equipment for working at height.

## Benefits of Working with Keep Safety

### Full Solution Provider

Keep Safety has an extensive range of fall protection solutions which ensures that you benefit from our comprehensive product range. Our trained industry specialists can assist from concept to project completion.

### Nationwide Coverage

Keep Safety has a team of regional experts located strategically throughout the mainland United States. Any rooftop in America is easily accessible to our team, ensuring prompt service and the ability to provide personal and expert service quickly and effectively.

### Expert Team

Our Regional Sales Team is fully trained in OSHA compliance and we prioritize these safety standards to solve your rooftop fall protection concerns. This expertise and industry knowledge provides you with a comprehensive fall protection system that reduces risk and saves lives.

### Personalized Customer Service

Our staff are here to assist you in every aspects of your project with no question too big or too small. We work closely with you to ensure the design of our systems meet your needs and ensure the safety of your staff, contractors and your facility while adhering to OSHA and local safety requirements. Keep Safety is committed to working in partnership with you from initial inspection and assessment to system installation and service requirements throughout the life of the fall protection systems.

### Quick Response Time

We understand that responding to your clients with immediacy is important. We are committed to providing first-class service, with prompt turnaround on quotes, and timely product availability.

### Engineering and Technology

As a Keep Safety customer, you receive exclusive access to our Engineering Team for your projects. We can provide a complete review of your layouts, supply detailed installation drawings, expert technical advice and customized solutions to address the specific safety challenges on your rooftop.

### Training

In accordance with the requirements of OSHA, employers are responsible for ensuring all employees are properly trained to safely use the fall protection products and systems. Keep Safety offers training classes and solutions to help promote safety at your facility.

Training is free and includes:

- Product Introductions
- On-site Demonstrations
- Comprehensive Installation Training

### Comprehensive Rooftop Safety Audit

Keep Safety fall protection experts perform a critical analysis of the entire rooftop surface to identify the hazards where workers are exposed to the greatest risk. This ensures that the most dangerous areas are protected immediately with state-of-the-art fall protection systems and OSHA compliant solutions. This is a FREE SERVICE designed to provide you with an assessment to ensure worker safety and prevent the risk of falls.



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