DAKOTA SAFETY

TECHNICAL BUYER KIT

FOR EHS MANAGERS + FACILITY ENGINEERS

THE EQUIPGUARD BUYER'S KIT

Compliance proof, chiller measurement guidance, vendor comparison, and CAPEX justification for rooftop guardrail approval.

OSHA 1910.28 | 1910.29(b) | FRAME-MOUNTED | 48-HOUR SCOPE

Specialty fall protection. Technical advisor and distributor since 2010.

DakotaSafety.com

866-503-7245

START HERE

00

Start with the decision in front of you.

Four tools, four use cases. Each section moves a stalled rooftop guardrail decision one step closer to approval.

01 Compliance question

Use the proof package to brief EHS, loss control, or legal review.

OSHA citations + file checklist

02 Ready to measure

Collect five input categories and four photo groups without an engineering survey.

48-hour scope package

03 Evaluating vendors

Compare modular and custom-fabricated guardrail on the dimensions procurement cares about.

Timeline, roof impact, cost

04 Building CAPEX

Frame the project as passive risk control, not a nice-to-have safety spend.

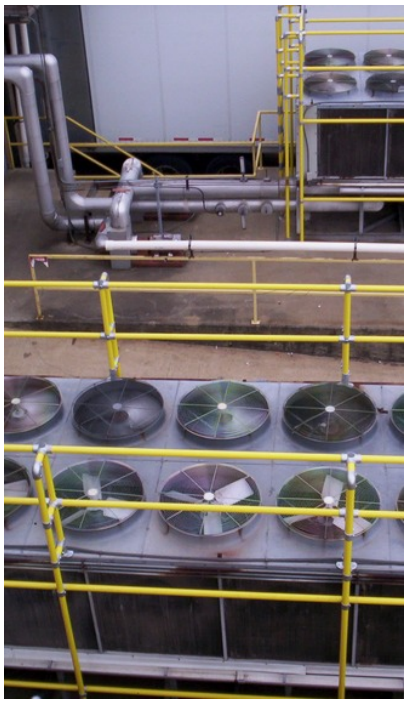
Executive leave-behind

Built to move from field measurement to decision-ready documentation.

BUYER HESITATION -> PROOF RESPONSE

Three trust gaps this kit closes.

Most rooftop chiller guardrail projects are not stuck because the need is unclear. They are stuck because the next proof point is missing.



01

Is a modular guardrail system actually OSHA-compliant?

EquipGuard is positioned against measurable guardrail criteria, not vague product claims. The kit cites the relevant OSHA standard and interpretation record.

02

Can our team measure this without getting it wrong?

The measurement guide asks for five input categories and four photo groups. Dakota Safety confirms configuration details during scoping.

03

Will this clear budget review?

The CAPEX framework converts guardrail cost into risk closure: workers' comp exposure, OSHA penalty exposure, roof impact, and installation timeline.

Design intent: signal OSHA seriousness, engineering discipline, and purchase confidence before the buyer reads the details.

01 Compliance Proof Package

For EHS directors, insurance loss control, and legal review.

Regulatory anchor

The goal of this section is to make the compliance discussion measurable: what condition creates the exposure, what OSHA criteria apply, and what documentation should be on file.

29 CFR 1910.28(b)(6)

Dangerous equipment

When employees may fall into or onto dangerous equipment, guardrail or restraint protection is part of the review even below the typical four-foot edge trigger.

29 CFR 1910.29(b)

Guardrail criteria

Top rail height, midrail location, opening limits, surface condition, gate behavior, and 200-lb top-rail strength are measurable criteria.

OSHA LOI 2014-08-26

Modular systems

OSHA's interpretation record supports modular guardrail section spacing analysis when the installed system satisfies applicable force criteria.

OSHA LOI 2020-06-12

Routine rooftop work

The temporary/infrequent exception is fact-specific; repeated HVAC service activity should be reviewed and documented by EHS.

Compliance note: This kit supports planning and documentation review. Final applicability depends on site conditions and should be reviewed by qualified safety personnel.

OSHA 1910.29(B) CRITERIA

Specification checklist

Use this page as the controlled review sheet for EHS, loss control, or a compliance officer. Each row turns the discussion into a measurable criterion.

Requirement	OSHA criterion	EquipGuard evidence	File record
Top rail height	42 in +/- 3 in	Configured to 42 in	Product data sheet
Top rail strength	200 lb downward / outward force	Configured to force criteria	Assembly drawing / spec
Midrail	Approx. 21 in above surface	Midrail included	Product data sheet
Opening limit	Openings less than 19 in	Guardrail geometry controls gaps	Assembly drawing
Surface + edges	Smooth, no laceration hazard	Powder-coated tubing; protected grip zone	Product data sheet
Access gate	Self-closing where access is required	Self-closing safety gate standard	Project configuration

Audit-ready file

- 2014 OSHA interpretation letter
- 2020 OSHA rooftop work interpretation
- EquipGuard product data sheet
- Site-specific drawing / CAD-BIM files
- Installation and inspection sign-off

Why this matters

Fall protection led OSHA's FY2025 most frequently cited standards list. A clean file changes the meeting from opinion to evidence.

Sources: OSHA 1910.29(b); OSHA Top 10 cited standards FY2025; OSHA penalties page.

SECTION 2

Five inputs. Four photo groups. One 48-hour scope.

EquipGuard brackets mount to the chiller's factory structural frame. Your measurements are chiller-referenced, not roof-referenced.

01

Nameplate data

Manufacturer, model, and serial number from the chiller data plate.

02

Overall footprint

Length by width at the structural frame, not the outer cabinet edge.

03

Access points

Which sides need service access and self-closing gate width.

04

Roof access path

Distance and direction from ladder or roof hatch to the chiller.

05

Frame obstructions

Piping, conduit, disconnects, service panels, or adjacent equipment.

Field rule

Nearest inch is sufficient for the initial scope. Dakota Safety confirms frame attachment details during configuration.

MEASUREMENT MISSES + PHOTO GUIDANCE

Prevent the quoting loop.

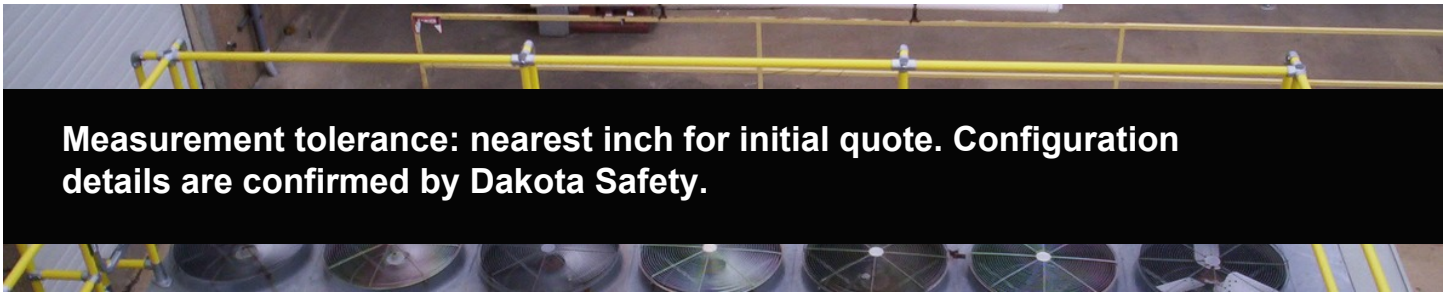
These are the dimensions and photos most likely to trigger back-and-forth. Get them right once and the scope moves cleanly.

Three measurements facilities get wrong

1. Measuring to the cabinet edge instead of the structural frame.
2. Missing a rear service panel that needs gate access.
3. Forgetting the roof hatch or ladder approach path.

Four photo groups that prevent back-and-forth

01. Each face of the chiller: front, back, left, right.
02. Nameplate or data tag.
03. Roof hatch or ladder access point.
04. Obstructions within 3 ft. of the structural frame.



Measurement tolerance: nearest inch for initial quote. Configuration details are confirmed by Dakota Safety.

FILLABLE WORKSHEET

Chiller Measurement Worksheet

FILLABLE PDF

Complete the fields below and send this worksheet with four photo groups.
Dakota Safety returns a scope-and-cost comparison within 48 hours.

FACILITY NAME

SITE LOCATION

CONTACT NAME

PHONE / EMAIL

01 Nameplate Data

MANUFACTURER

MODEL NUMBER

SERIAL NUMBER

02 Overall Chiller Footprint

Measure to the outermost point of the structural frame, not the cabinet.

LENGTH (IN.)

WIDTH (IN.)

HEIGHT OF UNIT (IN.)

03 Access Points

Check which side needs a self-closing gate and enter gate width.

Side	Gate required	Gate width (in.)
Front	☐ Yes	
Back	☐ Yes	
Left	☐ Yes	
Right	☐ Yes	

FILLABLE WORKSHEET

Measurement Worksheet / continued

04 Ladder / Roof Hatch Location

DISTANCE FROM CHILLER (FT.)

DIRECTION (N/S/E/W OR RELATIVE)

05 Frame-Mounted Obstructions

Note piping, conduit, electrical disconnects, service panels, or adjacent equipment within 3 ft. of the structural frame.

OBSTRUCTION NOTES

Required photo checklist

- [ ] Four chiller faces attached
- [ ] Nameplate / data tag attached
- [ ] Roof hatch / ladder access attached
- [ ] Obstruction photos attached

Submit worksheet + photos info@dakotasafety.com | 866-503-7245

SECTION 3

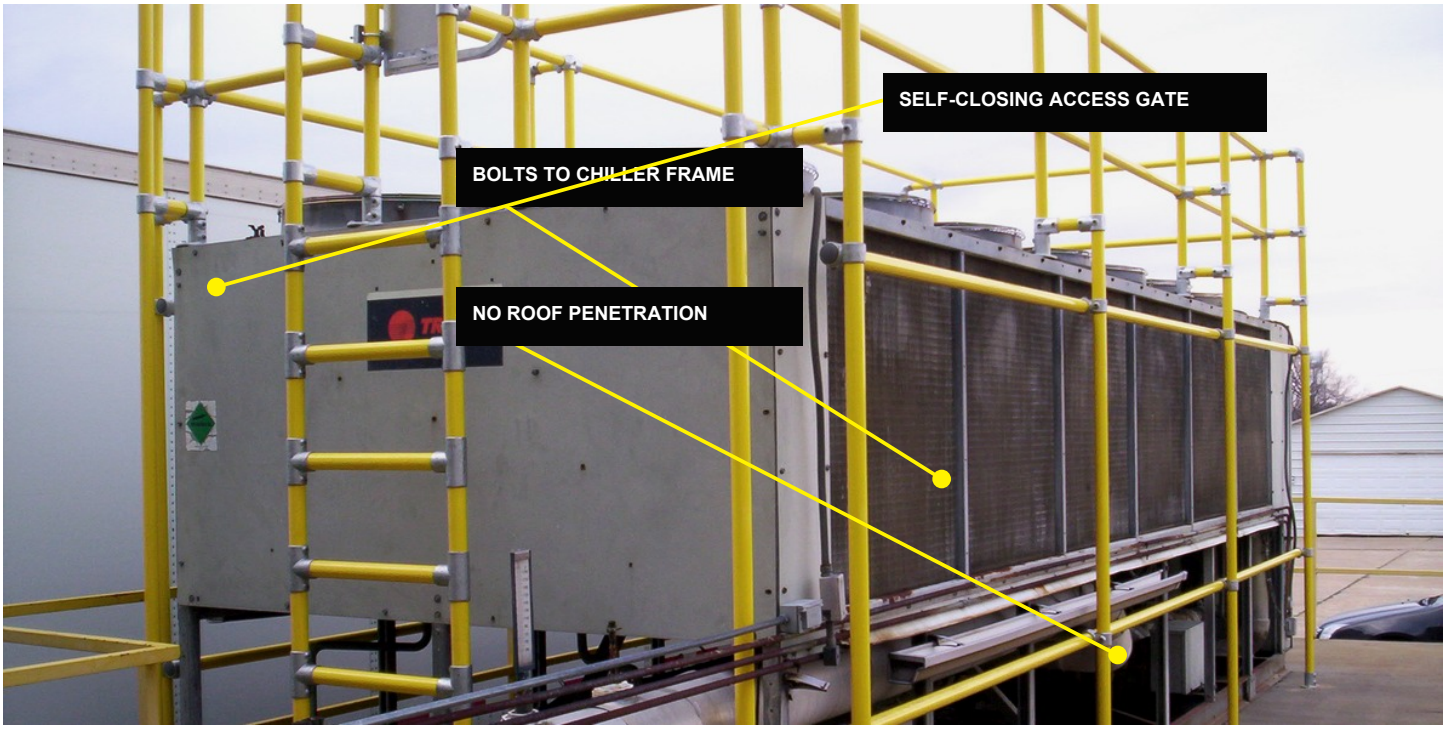
03 Modular vs. Custom-Fabricated

Same compliance goal. Different path to installation, roof impact, future flexibility, and budget approval.

Decision dimension	Custom-fabricated guardrail	EquipGuard modular
Design process	Site-specific shop drawings, engineering review, fabrication coordination.	Standard component configuration with project assembly drawing.
Typical timeline	8-12 weeks across design, fabrication, and installation.	Days to weeks. Quote turn within 48 hours after measurements.
Installation method	Welding, crane logistics, hot-work permits, and fire watch may apply.	Two-person crew. Drill and hex key. No welding or crane.
Attachment point	May attach to supporting structure or penetrate roof assembly.	Brackets bolt to chiller factory structural frame. No roof penetration.
Roof warranty	Penetrations can create warranty and leak-path questions.	Membrane remains intact; roofing contractor usually not required on-site.
Chiller replacement	Typically cut down and scrapped.	Disassembles and can be reconfigured for the new unit.
Cost signal	$15K-$30K+ is common in observed custom quote ranges.	Request a 48-hour scope-and-cost comparison from Dakota Safety.

Procurement takeaway: evaluate total path to risk closure, not just the quoted guardrail line item.

FRAME-MOUNTED DIFFERENTIATOR



The frame-mounted differentiator

One design decision creates the business case: EquipGuard attaches to the chiller's factory structural frame, not the roof membrane.

Roof membrane stays intact

No penetrations means no new leak path at installation and fewer warranty questions.

The enclosure can move

When the chiller changes, the system can be disassembled and reconfigured instead of scrapped.

Installation compresses

Two-person crew, drill, hex key, single-day install path. No hot-work permit or crane in the typical case.

When custom fabrication still makes sense

Use welded custom steel when the chiller frame is damaged, unrated, structurally unusual, or the scope requires integrated catwalk/platform steel outside modular section capability.

04 CAPEX Justification Framework

For getting passive guardrail approved when budget is the objection.

EXECUTIVE RISK CASE

The cost of one incident changes the meeting.

Use these figures as a decision frame, then replace with site-specific claim history and project quote data during approval.

$54,499

Average lost-time workers' comp claim for falls or slips

NSC/NCCI, 2022-2023 data

$114K+

Direct claim cost plus OSHA Safety Pays indirect-cost estimate

1.1x indirect ratio for $10K+ direct costs

$165,514

Maximum OSHA willful or repeated penalty per violation after Jan. 15, 2025

OSHA penalties page

48 HRS

Scope-and-cost comparison after worksheet + photos

Dakota Safety workflow

Framing line: We are not buying guardrail. We are closing a six-figure rooftop exposure with a passive engineering control.

Sources: https://injuryfacts.nsc.org/work/costs/workers-compensation-costs/ | https://www.osha.gov/safetypays/background | https://www.osha.gov/penalties/

APPROVAL ARGUMENT

The approval argument that works.

Passive engineering controls sit above administrative rules and PPE in the NIOSH hierarchy. For rooftop chillers, the strongest approval logic is not preference; it is risk control discipline.

1	**Elimination** Remove the hazard	Not feasible; rooftop service access remains required.
2	**Substitution** Replace the hazard	Not applicable to existing rooftop equipment.
3	**Engineering Controls** Passive guardrail	Recommended control layer. This is the EquipGuard role.
4	**Administrative Controls** Procedures / training	Needed, but they depend on human behavior every visit.
5	**PPE** Harness and tie-off	Last resort; requires anchors, training, inspection, and active use.

Approval translation

When a feasible passive control exists, relying only on PPE, training, or work rules can be harder to defend after an incident. The CAPEX request should name the control level.

Source: NIOSH Hierarchy of Controls, https://www.cdc.gov/niosh/hierarchy-of-controls/about/

CAPEX LEAVE-BEHIND

One-page CAPEX leave-behind

Adapt this language for the internal approval packet. It maps to the framework most committees already use: risk, cost of inaction, cost of action, timeline, recommendation.

RISK	Unguarded rooftop chiller exposure. Review under OSHA 1910.28(b)(6) dangerous equipment and 1910.29(b) guardrail criteria.
COST OF INACTION	Workers' comp claim exposure, indirect cost exposure, potential OSHA citation exposure, operational disruption, and litigation risk.
COST OF ACTION	EquipGuard frame-mounted modular guardrail. No roof penetration. No welding. No crane in the typical install path.
TIMELINE	Worksheet and four photo groups to Dakota Safety. Scope-and-cost comparison within 48 hours. Measurement-to-install path targeted at 30 days or less.
RECOMMENDATION	**Approve CAPEX for EquipGuard installation around [chiller location]. The project closes a defined rooftop safety exposure with passive engineering control and documentation on file.**

Optional fields: project location, chiller ID, quote number, requested budget, approval owner.

DAKOTA SAFETY

Submit your dimensions. Dakota Safety handles the rest.

Send the worksheet and four photo groups. Our team returns a scope-and-cost comparison within 48 hours.

01	**Complete worksheet**	Complete all five input categories using nameplate data and frame-referenced measurements.
02	**Send photos**	Attach four chiller faces, nameplate, roof access, and obstruction photos.
03	**Review scope**	Receive product configuration, assembly drawing, and cost comparison.
04	**Install**	Two-person crew. Single-day install path. No roof penetration in typical configuration.

SUBMIT YOUR WORKSHEET

info@dakotasafety.com | 866-503-7245

CAD/BIM files included with every project. 10-year product warranty. Powder-coated safety yellow.