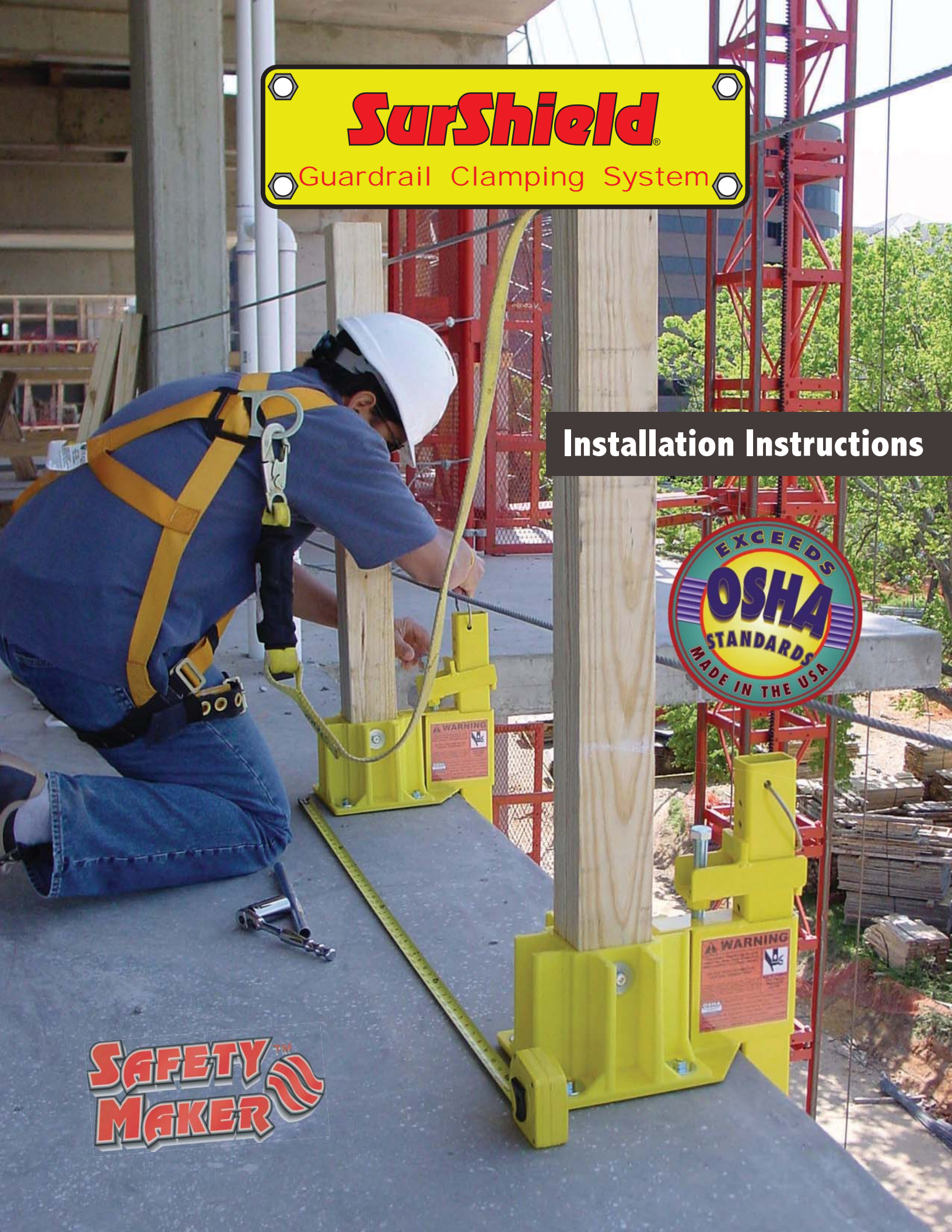


SurShield®

Guardrail Clamping System

Installation Instructions





WARNING



THIS DEVICE SHOULD ONLY BE USED UNDER THE CLOSE SUPERVISION OF AN OSHA CERTIFIED COMPETENT PERSON.

The SurShield® Guardrail Clamp has been tested and certified by an independent national engineering testing firm as exceeding all applicable United States Federal OSHA temporary guardrail regulations .

DO NOT OVER-TIGHTEN THE CENTRAL TENSION BOLT!
Installer MUST follow proper fall protection procedures during installation!

OSHA's Regulations (Standards - 29 CFR) Guardrail Systems - Non-Mandatory Guidelines for Complying with 1926.502(b) - 1926 Subpart M App B - States in part:

The standard requires guardrail systems and components to be designed and built to meet the requirements of 1926.502(b)(3), (4), and (5). This Appendix serves as a non-mandatory guideline to assist employers in complying with these requirements . . .

(1) For wood railings: Wood components shall be minimum 1500 lb-ft/in(2) fiber (stress grade) construction grade lumber; the posts shall be at least 2-inch by 4-inch (5 cm x 10 cm) lumber spaced not more than 8 feet (2.4 m) apart on centers; the top rail shall be at least 2-inch by 4-inch (5 cm x 10 cm) lumber, the intermediate rail shall be at least 1-inch by 6-inch (2.5 cm x 15 cm) lumber. All lumber dimensions are nominal sizes as provided by the American Softwood Lumber Standards, dated January 1970 . . .



PINCH POINTS CAN CAUSE PERSONAL INJURY



THIS DEVICE IS NOT DESIGNED FOR USE AS AN ANCHORAGE TIE-OFF POINT.

FAILURE TO OBSERVE MANUFACTURERS INSTRUCTIONS MAY RESULT IN SERIOUS OR FATAL INJURY.



WARNING



SurShield® Guardrail Clamping System Installation Procedures for Guardrail Applications

STEP ONE

ASSEMBLE CLAMP AND POST

If necessary, mount the Safety Boot® to the clamp base using supplied fender washers and fastening nuts. Cut 2 - 2X4 studs using construction grade (stress grade) lumber to 42 inch lengths and fasten together using 2- $\frac{1}{2}$ inch long deck screws or framing nails to create a double 2X4 post. Insert the post into the center core of the Safety Boot and secure with a $\frac{3}{8}$ X 2- $\frac{1}{2}$ inch lag screw and washer through the provided hole in the side wall (See Figure 1).



Figure 1

STEP TWO

PLACEMENT OF POSTS

Measure the distance between the post/clamps. Federal OSHA recommends that the maximum distance between posts should not exceed 8 feet on centers using construction grade (stress grade) lumber for guardrail systems.

Loosen the central tension bolt, disengage the locking mechanism and slide up the stanchion. Flip the ring back and under the locking mechanism to hold it in place (See Figure 2).

While holding the stanchion firmly, grab the SurShield from the back where it says "LIFT HERE" and raise the main body to extend the bottom jaw section until fully open.



Figure 2

STEP THREE

INSTALL CLAMP AND POST ONTO THE EDGE OF THE STRUCTURE

With the jaw fully extended, swing the SurShield over the edge of the structure and rest the base on the surface (See Figure 3).

Unhook the locking mechanism from the ring and slide down onto the top plate, lift stanchion using the lift ring and place locking mechanism into corresponding hole depending on the thickness of the structure (See Figure 4).

Tighten the central tension bolt while lifting the stanchion with the ring until the unit is snug.

Securely tighten the central tension bolt using a 15/16 inch wrench or socket (See Figure 5).



Figure 3

**DO NOT OVER TIGHTEN THE
CENTRAL TENSION BOLT!**



Figure 5



Figure 4

STEP FOUR

ATTACH MID RAILS AND TOP RAILS TO POSTS

For mid rail placement, measure from the top of the walking/working surface up to a height of 21 inches and mark the post.

Federal OSHA Standard 1926.502(b)(2)(i) states: Midrails, when used, shall be installed at a height midway between the top edge of the guardrail system and the walking/working level (See Figure 6).

For top rail placement, attach the top rail flush with the top of the 42 inch post.

Federal OSHA Standard 1926.502(b)(1) states: Top edge height of top rails, or equivalent guardrail system members, shall be 42 inches (1.1 m) plus or minus 3 inches (8 cm) above the walking/working level. When conditions warrant, the height of the top edge may exceed the 45-inch height, provided the guardrail system meets all other criteria of this paragraph (See Figure 7).

Measure and cut 2X4's to fit into the slots on each Safety Boot® for simple OSHA required toeboard protection (See Figure 8).

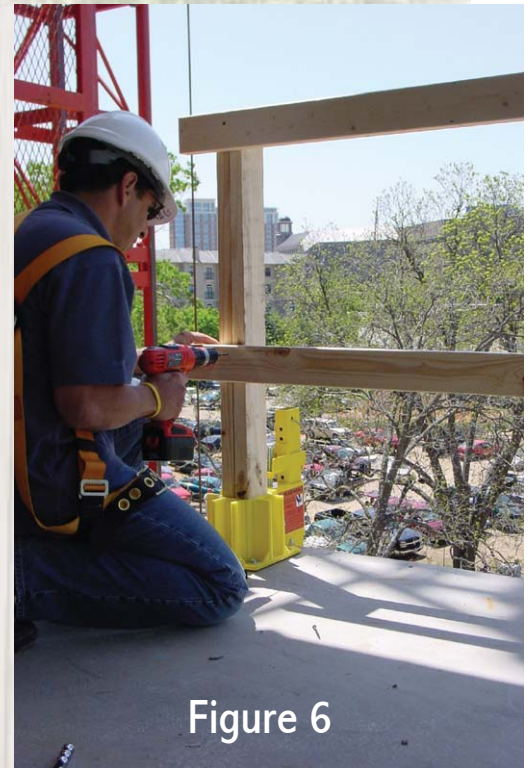


Figure 6

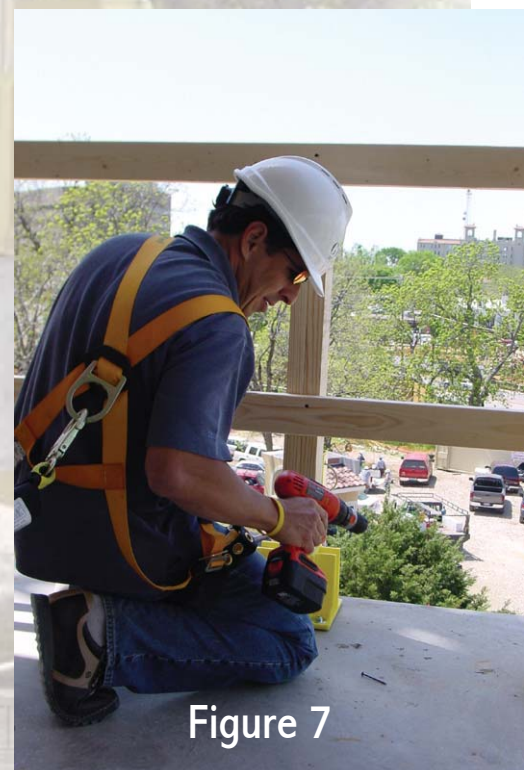


Figure 7



Figure 8

OSHA Regulations (Standards - 29 CFR)

Fall protection systems criteria and practices. - 1926.502

1926.502(b)

"Guardrail systems." Guardrail systems and their use shall comply with the following provisions:

1926.502(b)(1)

Top edge height of top rails, or equivalent guardrail system members, shall be 42 inches (1.1 m) plus or minus 3 inches (8 cm) above the walking/working level. When conditions warrant, the height of the top edge may exceed the 45-inch height, provided the guardrail system meets all other criteria of this paragraph.

Note: When employees are using stilts, the top edge height of the top rail, or equivalent member, shall be increased an amount equal to the height of the stilts.

1926.502(b)(2)

Midrails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members shall be installed between the top edge of the guardrail system and the walking/working surface when there is no wall or parapet wall at least 21 inches (53 cm) high.

1926.502(b)(2)(i)

Midrails, when used, shall be installed at a height midway between the top edge of the guardrail system and the walking/working level.

1926.502(b)(2)(ii)

Screens and mesh, when used, shall extend from the top rail to the walking/working level and along the entire opening between top rail supports.

1926.502(b)(2)(iii)

Intermediate members (such as balusters), when used between posts, shall be not more than 19 inches (48 cm) apart.

1926.502(b)(2)(iv)

Other structural members (such as additional midrails and architectural panels) shall be installed such that there are no openings in the guardrail system that are more than 19 inches (.5 m) wide.

1926.502(b)(3)

Guardrail systems shall be capable of withstanding, without failure, a force of at least 200 pounds (890 N) applied within 2 inches (5.1 cm) of the top edge, in any outward or downward direction, at any point along the top edge.

1926.502(b)(4)

When the 200 pound (890 N) test load specified in paragraph (b)(3) of this section is applied in a downward direction, the top edge of the guardrail shall not deflect to a height less than 39 inches (1.0 m) above the walking/working level. Guardrail system components selected and constructed in accordance with the Appendix B to subpart M of this part will be deemed to meet this requirement.

1926.502(b)(5)

Midrails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members shall be capable of withstanding, without failure, a force of at least 150 pounds (666 N) applied in any downward or outward direction at any point along the midrail or other member.

1926.502(b)(6)

Guardrail systems shall be so surfaced as to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.

1926.502(b)(7)

The ends of all top rails and midrails shall not overhang the terminal posts, except where such overhang does not constitute a projection hazard.

1926.502(b)(8)

Steel banding and plastic banding shall not be used as top rails or midrails.

1926.502(b)(9)

Top rails and midrails shall be at least one-quarter inch (0.6 cm) nominal diameter or thickness to prevent cuts and lacerations. If wire rope is used for top rails, it shall be flagged at not more than 6-foot intervals with high-visibility material.

1926.502(b)(10)

When guardrail systems are used at hoisting areas, a chain, gate or removable guardrail section shall be placed across the access opening between guardrail sections when hoisting operations are not taking place.

1926.502(b)(11)

When guardrail systems are used at holes, they shall be erected on all unprotected sides or edges of the hole.

1926.502(b)(12)

When guardrail systems are used around holes used for the passage of materials, the hole shall have not more than two sides provided with removable guardrail sections to allow the passage of materials. When the hole is not in use, it shall be closed over with a cover, or a guardrail system shall be provided along all unprotected sides or edges.

1926.502(b)(13)

When guardrail systems are used around holes which are used as points of access (such as ladderways), they shall be provided with a gate, or be so offset that a person cannot walk directly into the hole.

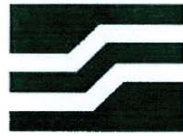
1926.502(b)(14)

Guardrail systems used on ramps and runways shall be erected along each unprotected side or edge.

1926.502(b)(15)

Manila, plastic or synthetic rope being used for top rails or midrails shall be inspected as frequently as necessary to ensure that it continues to meet the strength requirements of paragraph (b)(3) of this section.

ENGINEERING REPORT SUMMARY



Certificate of Test ***Stress Engineering Services, Inc.***

13800 Westfair East Drive
Houston, Texas 77041

TEST DATE: February 15, 2007 PN 116466

TEST CUSTOMER: Safety Maker, Houston TX

TEST PIECES: Sample 1 Surshield Min and Sample 1 Surshield Max

TEST REQUIREMENTS: Proof test samples by pulling in a horizontal direction.

TEST RESULTS:

Sample 1 Surshield Min was mounted on 1" steel plate and pulled to 431 lbs. No failure of the sample occurred. Test stopped per Safety Maker representative instructions.

Sample 1 Surshield Max was mounted on 10" concrete step and pulled to 489lbs. No failure of the sample occurred. Test stopped per Safety Maker representative instructions.

Attachment A - Hand Log

Attachment B - Plot of Applied Test Loads

Attachment C - Photographs of General Test Setup

Attachment D - Equipment Calibration Documentation

Tested By:

Approved By:


Jimmy Beseda,
SES Senior Technician


W. T. Asbill, P.E.

Be sure and visit our website at www.safetyboot.com for information on our other guardrail products:



**Safety
Boot**[®]



VersiShield[®]
Guardrail Clamping System



U.S. Patent No. 7234689
U.S. Patent No. 7284746
U.S. Patent No. 7530551
U.S. and Foreign Patents Pending
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Safety Maker Inc.
P.O. Box 880
Cypress, Texas 77410-0880

IMPORTANT NOTE:
ALWAYS wear the proper
fall protection
when installing this product.

Toll Free: 800.804.4741
Local: 832.593.0400
www.safetyboot.com
info@safetyboot.com

