



Specification Sheet

Warning: Failure to follow the instructions for the Hilmerson Safety Rail System™ poses a threat to safety and health and may result in death or serious injury to installers, users and/or third parties. Hilmerson Safety™ and our manufacturer expressly disclaim any liability from injury, damage or other loss resulting from improper or unauthorized installation or use of the Hilmerson Safety Rail System™

Note: Contact Hilmerson Safety™ if you have questions regarding the specifications, installation, use, maintenance or application of this product.

Hilmerson Safety
16228 Main Avenue SE Prior Lake, MN 55372
952-224-9390

Info@HilmersonSafety.Com

©All rights reserved Hilmerson Safety 2020 – US Patent 10,597,057 www.HilmersonSafety.com/Patent



Specifications

PART 1: GENERAL

1.1 SECTION INCLUDES

- A. Temporary, fixed guardrail system for leading edge fall protection

1.2 REFERENCES

- A. AWS D1.1: Structural Welding - Steel
- B. ASTM A-36: Standard Specification for Carbon Structural Steel
- C. ASTM A-513: Standard Specification for Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing
- D. OSHA 29 CFR 1910.21: Scope and definitions (General Industry)
- E. OSHA 29 CFR 1910.28: Duty to have fall protection and falling object protection
- F. OSHA 29 CFR 1926.500: Scope, applications, and definitions applicable to Subpart M – Fall Protection in Construction
- G. OSHA 29 CFR 1926-501: Duty to have fall protection
- H. OSHA 29 CFR 1926.502: Fall protection systems criteria and practices
- I. OSHA 29 CFR 1926.503: Training requirements

1.3 SUBMITTALS

- A. Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum of 15 year's experience manufacturing steel scaffolding/portable rail systems.
- B. INSTALLATION QUALIFICATION: 2-person crew capable of positioning base plates and installing portable railing systems according to manufacturer's instructions. Installer shall be trained according to applicable OSHA Standards including, but not limited to, 1926.503 & 1926.30, at least one installer shall be designated as the competent person by the employer.
- C. COMPETENT PERSON: An individual knowledgeable of fall protection equipment, including the manufacturer's recommendations and instructions for the proper use, inspection and maintenance; and who is:

1. Capable of identifying existing and potential fall hazards.
2. Has the authority to take prompt corrective action to eliminate those hazards.
3. Is knowledgeable of the provisions regarding the erection, use, inspection and maintenance of fall protection equipment and systems.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's shipping containers until ready for installation.

PART 2: PRODUCTS

2.1 MANUFACTURER

- A. A-1 Scaffold Mfg., Inc.
590 Commerce Parkway
Hays, KS 67601
www.a1scaffoldmfg.com
Ph: 785-625-7510
- B. Jasper Materials, Inc.
150 Hickman Road
Jasper, TN 37347
www.jaspermaterials.com
Ph: 423-942-4090

OWNER / DISTRIBUTOR

- C. Hilmerson Safety
16228 Main Avenue SE
Prior Lake, MN 55372
www.hilmersonsafety.com
Ph: 952-224-9390
- D. Substitutions: None

2.2 DESIGN REQUIREMENTS

- A. Structural Performance: Comply with requirements of applicable local, state and federal codes.
- B. Structural performance of top rails and supports:
 1. 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.
 2. 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.
 3. Design need not provide for both concentrated and uniform loads to be applied concurrently.

- C. Structural performance of railing infill:
1. Capable of withstanding a horizontal concentrated load of 200 pounds (90.6 kg), applied to 1 foot (30.5mm) square area at any point on the infill.
 2. Infill includes panels, intermediate rails, posts and other elements.
 3. Capable of withstanding a concentrated load of 150 pounds applied to the mid rail at any point and in any direction.
 4. Toeboard capable of withstanding a concentrated load of 50 pounds applied to the toeboard at any point and in any direction.
 5. Design need not provide for infill loads to be applied concurrently with top rail loading.

2.3 MATERIALS

- A. Guardrail Panels with Toeboard.
1. Rails: 1-5/8" O.D. x 13 gage wall tube 1020 HREW
 2. ASTM TYPE 1
 3. Length: 5' and 10' (HLM-GR10G & HLM-GR5G)
 4. Length: 5.5' x 9' Adjustable Rail (HLM-GR9AG)
 5. Height: 42 inches (1067 mm).
 6. Mid-rail: weld to posts at 21 inches (533 mm) below top rail.
 7. Toeboard: 11 gage hot-rolled steel.
 8. 10' rail with integrated toeboard, 67 lbs.
 9. Finish Standard: Galvanized
 10. Finish Optional: Epoxy powder coated safety yellow or custom colors per specification
- B. Guardrail Panels No Toeboard.
1. Rails: 1-5/8" O.D. x 13 gage wall tube 1020 HREW
 2. ASTM TYPE 1
 3. Length: 5' and 10' (HLM-GR10NTG & HLM-GR5NTG)
 4. Length: 5.5' x 9' Adjustable Rail (HLM-GR9ANTG)
 5. Height: 42 inches (1067 mm).
 6. Mid-rail: weld to posts at 21 inches (533 mm) below top rail.
 7. 10' rail 41 lbs.
 8. Finish Standard: Galvanized
 9. Finish Optional: Epoxy powder coated safety yellow or custom colors per specification
- C. Penetrating Anchored Base Plates (HLM-GRBPXG)
1. Material: 3/8" ASTM-A-36
 2. Size: 8" x 11", weight 11 lbs.
 3. Railing Capacity: Ability to accommodate two intersecting railing sections on the same base.
 4. Two 5-3/4" mounting posts with perpendicular 1/2" (45-90 degree) slots for pins securing rails to base.
 5. Space between rail uprights centrally located on the base plate 4.625" +/- 1/8".
 6. 0.56" x 2.5" centrally-located anchor slot between mounting posts
 7. Finish: Galvanized.
 8. Specified anchor: (One) Hilti KWIK HUS-EZ (KH-EZ) 1/2" x 3.5" (P/N 418072) Ultimate performance anchor with hex head (carbon steel). (SINGLE USE ONLY)

- D. Non-Penetrating Weighted Base Plate (HLM-GRBPHXG)
1. Material: 3/4" ASTM-A-36
 2. Size: 11" x 30", weight 70 lbs with and centrally located lifting eye for hand dolly transport
 3. Railing Capacity: Ability to accommodate two intersecting railing sections on the same base.
 4. Two 5-3/4" mounting posts with 1/2" (45-90 degree) slots for pins securing rails to base.
 5. Centrally located 9/16" hole should be loose on 1/2" plasma cut.
 6. Space between rail uprights centrally located on the base plate 4.625" +/-1/8".
 7. Finish: Galvanized.
- E. Spanners.
1. Outer rail: 1-5/8" OD, 13 gage, ERW steel tube, galvanized
 2. Inner rail: 1-5/16" OD, 14-gage, ERW steel tube, galvanized
 3. Short spanner: 22" to 34" adjustable connection rail (HLM-RS3G)
 4. Long spanner: 34" to 58" adjustable connection rail (HLM-RS5G)
 5. Tubing: 1.9" OD x 6' length, 13 gage, Galvanized (STG1.9x13Gx6)
 6. Swivel Clamp, Dual Purpose (I-Bolt) (CLSDP)
- F. Securing Pins.
1. Gravity Lock Pigtail: Self-locking 3/8" x 1 5/8" diameter, zinc plated (GL)
 2. Locking Pin: 1/4" x 2-3/4" diameter, zinc plated (WIRE-SQ2)
- G. Anchors.
1. Hilti Anchor KH-EZ: 1/2" x 3-1/2" (418072 – box of 25)
- H. Self-Contained Transport / Inventory Cart (HLM-GRC10G)
1. Material: Steel, square/ round tube, expanded metal.
 2. Size: 48 7/16" x 132", tare weight 740lbs, loaded weight 2563lbs, maximum capacity 2700lbs.
 3. Railing Capacity: (20) 10' guardrails, (21) penetrating bases, pins and anchors.
 4. Hoisting: Two way fork pick accessible, (4) lifting eyes
 5. Transport: 8" x 3" polyurethane on steel locking casters, fixed and swivel.
 6. Finish: Galvanized.
- I. Self-Contained Transport / Inventory Rack (HLM-BPHGRRG)
1. Material: Steel, square/ round tube, expanded metal.
 2. Size: 134" x 49" x 66", tare weight 477lbs, loaded weight 2778lbs, maximum capacity 3000lbs.
 3. Railing Capacity: (16) 10' guardrails no toeboard, (8) 5' guardrails no toeboard, (20) non-penetrating weighted bases, (48) pins and (1) long arm dolly.
 4. Hoisting: Two way fork pick accessible, (4) lifting eyes
 5. (2) 3/16" x 126 1/4" Vinyl Coated Galv. Cable, (4) 3/16" Alum Sleeve and (4) 5/16" Galv. Snap Links.
 6. Finish: Galvanized.

- J. Weighted Base Plate Storage Pallet: Galvanized (HLM-BPHPSG)
 - 1. Size: 40" x 18" x 49", tare weight 158lbs, loaded weight 1558lbs, maximum capacity 3150lbs.
 - 2. Base Capacity: (20) non-penetrating weighted bases.
 - 3. Hoisting: Fork pick accessible.
 - 4. Finish: Galvanized.
- K. Weighted Base Plate Dolly: Short arm with air tires (HLM-GRBPDS)
- L. Weighted Base Plate Dolly: Long arm with air tires (HLM-GRBPDL)

3. EXECUTION

3.1 EXAMINATION

- I. Do not begin installation until examination is complete.
- II. Anchoring bolts are designed assuming a concrete strength of $f'_c=3000$ psi, normal weight, cracked concrete & 6" minimum thickness, no less than 6" from the edge of edge of a deck.

3.2 PREPARATION

- I. Ensure that no foreign material prevents base plate from laying flush with concrete surface prior to installation.

3.3 INSTALLATION

- I. Install in accordance with Hilmerson Safety Rail System™ installation instructions.

END OF SECTION

DISCLAIMER

Although every effort was made to ensure that all information in this specification and supporting installation manual are factual and that the numerical and non-numerical values expressed are accurate to a degree consistent with current practice(s), Hilmerson Safety™, and its affiliates do not assume responsibility for errors or oversights that may result from the use of the information contained within this installation manual. Anyone making use of the contents in this specification and supporting installation manual assumes all liability arising from such use. By accepting and using this specification and supporting installation manual, you release Hilmerson Safety™ and its affiliates of all liability.