



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.

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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 years 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 & 1926.21, 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 manufacturers' 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

DISTRIBUTOR

- B. Hilmerson Safety Services
8678 Eagle Creek Circle
Savage, MN 55378
www.hilmersonservices.com
Ph: 952-224-9390

- C. 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 one 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. Toe board capable of withstanding a concentrated load of 50 pounds applied to the toe board 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 Toe Board.

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. Height: 41 5/8 inches (1067 mm).
5. Mid-rail: weld to posts at 21 inches (533 mm) below top rail.
6. Toe board: 11 gage cold-rolled steel,
7. 10' rail with integrated toe board, 63.5 lbs.
8. Finish Standard: Galvanized
9. Finish Optional: Epoxy powder coated safety yellow or custom colors per specification

B. Guardrail Panels No Toe Board.

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. Height: 41 5/8 inches (1067 mm).
5. Mid-rail: weld to posts at 21 inches (533 mm) below top rail.
6. 10' rail 51 lbs.
7. Finish Standard: Galvanized
8. Finish Optional: Epoxy powder coated safety yellow or custom colors per specification

C. 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 (HLM-RS3G) 22" to 34" adjustable connection rail
4. Long spanner (HLM-RS5G) 34" to 58" adjustable connection rail

D. Penetrating Anchored Base Plates (HLM-GRBPG)

1. Material: 3/8" ASTM-A572 Grade 50 steel
2. Size: 8" x 11", weight 10.73 lbs.
3. Railing Capacity: Ability to accommodate two intersecting railing sections on the same base.
4. Two 6 3/8" mounting posts with perpendicular 9/16" round holes for pins securing rails to base.
5. Space between rail uprights not to exceed 4.625".
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). (ONE TIME USE ONLY)

E. Non-Penetrating Weighted Base Plate (HLM-GRBPHXG)

1. Material: 3/4" ASTM-A572 Grade 50 steel
2. Size: 11" x 30", weight 70 lbs with centrally located lifting eye for hand dolly transport.
3. Railing Capacity: Ability to accommodate two intersecting railing sections on the same base.
4. Two 6 7/16" mounting posts with 9/16" (45 degree) slots for pins securing rails to base.
5. Space between rail uprights centrally located on the base plate not to exceed 4.625".
6. Finish: Galvanized.

- F. Securing Pins.
 - 1. Style: self locking 3/8" x 1 5/8" diameter pigtail pin
 - 2. Finish: Zinc plated.

- G. Self Contained Transport / Inventory Cart (HLM-GRC10G)
 - 1. Material: Steel, square/ round tube, expanded metal.
 - 2. Size: 48 7/16" x 132", weight 740#, Maximum capacity 2700lbs.
 - 3. Railing Capacity: (20) 10' guardrails, (22) 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.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until examination is complete.
- B. 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

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

3.3 INSTALLATION

- A. 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 Services, Inc., 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 Services, Inc. and its affiliates of liability.