

HEAVY DUTY ALUMINUM MECHANICAL LADDER SPECIFICATIONS

General

This specification establishes minimum criteria for the design, fabrication, and erection of fixed heavy-duty aluminum mechanical ladder systems as manufactured by Pleasant Mount Welding, Inc. (Carbondale, Pennsylvania).

Codes

The fixed ladder shall meet or exceed the design and loading requirements of ANSI ASC A14.3 American National Standard for Ladders – Fixed – Safety Requirements and OSHA 1926.1053.

Engineering & Action Submittals

Shop Drawings: The contractor shall submit the shop drawings to the Engineer of Record (EOR) for approval for the fabrication of all aluminum mechanical ladder systems based on construction drawings of current issue. The drawings shall be approved and released to the shop before fabrication of the ladders. Include plans, sections, shop details, and connections as required by the contract documents. All work shall be fabricated and erected in accordance with the approved shop drawings.

Manufacturer & Qualifications

Pleasant Mount Welding, Inc.
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The heavy-duty aluminum mechanical ladder system, as specified, shall be the product of a single manufacturer regularly engaged in the design, manufacture, and installation of engineered aluminum ladders. When requested by the Engineer of Record, submit written evidence to show experience qualifications & facility capabilities for performance of contract requirements.

Performance & Design

Design Load & Deflections: Ladder rungs shall be designed to withstand a concentrated load of 1000 pounds applied to the center of the rung. Ladder side rails shall be designed to withstand a minimum live load of two 1000-pound loads between any two consecutive attachments.

Rung Description: The aluminum extruded rung shall be designed to provide a non-slip surface with a 1½” wide semicircular striated top and bottom surface. The semicircular top and bottom surfaces shall have striations on approximately 1/8” centers for enhanced gripping. The rung shall be an aluminum extrusion, alloy 6061-T6, of sufficient section modulus and moment of inertia to withstand the design loads. Rungs shall conform to ASTM B-221. Ladder rungs shall be mill finish. Rung attachments to the side rails shall be mill finish.

Side Rail Description: Side rails shall be 1½” schedule 40 pipe, alloy 6061-T6. The pipe shall conform to ASTM B-429 or B-221. Side rails shall have an anodized finish. The ladder standoff brackets are to be mill finish.

Fasteners: All fasteners between aluminum components shall be stainless steel.

Ladder Cage Description

General cage design shall be in accordance with OSHA 1926.1053 and ANSI ASC A14.3. The horizontal bands shall be 2"x1/4" aluminum flat bars, alloy 6061-T6 and shall be prefabricated to accept the vertical bars. The pre-cut and pre-drilled vertical bars shall be 1 1/2"x3/16" aluminum flat bars, alloy 6061-T6. Ladder cages shall be mill finish. All hardware necessary for the assembly of the cage and erection of the ladder shall be furnished by the ladder manufacturer. Cages are required on ladders only where shown on the plans.

Environmental Considerations

The aluminum used in these fixed mechanical ladders are presumed to be recyclable upon demolition.

Maintenance

Pleasant Mount Welding, Inc. aluminum fixed ladders are maintenance free, with no painting required.