

A*COM SPECIFICATIONS

A*COM modular aluminum ramp systems.

This section is based on products manufactured by A*COM and distributed by AlumiRamp, Inc. located at the following address:

855 Chicago Road, Quincy, MI 49082, tel: (800)800-3864, fax: (800)753-7267

The following specifications section applies for A*COM Ramp Systems, which are access ramps, platforms, and steps for the disabled and general public use.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Modular aluminum ramps, platforms, and steps.

1.2 REFERENCES

- A. American National Standard Accessible and Usable Buildings and Facilities (ICCANSI).
- B. Americans with Disabilities Act Accessibility Guidelines (ADA).
- C. Building Officials & Code Administrators National Building Code (BOCA).
- D. Standard Building Code (SBC).
- E. Council of American Building Officials/American Standards Institute (CABO/ANSI).

1.3 SYSTEM DESCRIPTION

- A. Design Requirements:
 - 1. Design ramp sections, platforms, steps and railing systems of modular components for on site assembly. Configurations as indicated on shop drawings.
 - 2. Configurations must conform to the following:
 - ramps: maximum slope 1 in 12.
 - turn platforms: minimum size 60 in by 60 in clear area.steps: minimum 44 inch clear width.
 - 3. Design ramp sections, platforms, steps and railing systems to comply with requirements of one or more of the following codes:
 - a. American National Standards Accessible and Usable Buildings and Facilities (ICC/ANSI).
 - b. Americans with Disabilities Act Accessibility Guidelines (ADA).
 - c. Building Officials & Code Administrators National Building Code (BOCA).
 - d. Standard Building Code (SBCCI).
 - e. Council of American Building Officials/American Standards Institute (CABO/ANSI).
 - f. other requirements as listed.
- B. Performance Requirements:
 - 1. Ramp sections and platforms vertical changes in level shall not exceed 1/4 inch:
 - a. Support minimum distributed live load capacity of 100 pounds per square foot.

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- b. Support concentrated vertical load of 300 pounds uniformly distributed over 4 square inches of area.
 - c. Distributed loads and concentrated loads not to be applied simultaneously.
 - 2. Handrails located 38 inches above, and parallel to, walking surface with a 1- 2/3 inches grasping rail:
 - a. Support distributed load of 50 pounds per linear foot, applied at any point and in any direction.
 - b. Support concentrated load of 200 pounds, applied at any point and in any direction.
 - c. Distributed loads and concentrated loads not to be applied simultaneously.
 - 3. Guardrails located 42 inches above, and parallel to, walking surface:
 - a. Support distributed load of 50 pounds per linear foot, applied horizontally at guardrail height and a simultaneous distributed load of 100 pounds per lineal foot applied vertically downward at the top of the guardrail.
 - b. Support concentrated load of 200 pounds, applied at any point and in any direction, including intermediate rails.
 - c. Distributed loads and concentrated loads not to be applied simultaneously.
 - 4. Balusters:
 - a. Prohibit a 4 inch diameter sphere from passing through any opening.
 - b. Support concentrated load of 200 pounds, applied at any point and in any direction.
 - c. Balusters shall not be of an open design that would provide a ladder effect.
 - 5. Steps:
 - a. Support minimum distributed live load capacity of 100 pounds per square foot.
 - b. Support concentrated vertical load of 300 pounds uniformly distributed over 4 square inches of area.
 - c. Distributed loads and concentrated loads not to be applied simultaneously.
 - d. Risers shall be 4 inches high minimum, 7 inches high maximum.
 - e. Treads shall be 11 inches deep minimum and have a minimum width of 44 inches.
 - f. Treads shall be of uniform depth and risers of uniform height, with differences not to exceed 3/8 inch for any flight or 3/16 inch for adjoining treads or risers. The difference between the uniform riser height and the height of the bottom riser shall not exceed 3 inches.
 - g. The leading edge of the tread shall have a radius of curvature of 1/2 inch maximum.
 - h. Shall have a handrail on both sides.

1.4 SUBMITTALS

- A. Product Data: Manufacturer's literature for ramp sections, platforms, and railing systems; identify materials and finishes if not standard.
- B. Drawings as provided by contractor or manufacturer. Indicate ramp configuration with dimensions, rail type, landing and threshold heights.
- C. Samples: Upon request a sample showing knurled bi-directional slip resistant ramp surface will be provided.
- D. Quality Assurance Submittals:
 - 1. Design Data: Shop drawings and literature for typical pre-engineered ramp sections, platforms, and railing systems.
 - 2. Manufacturer's Instructions: Printed installation instructions for ramp sections, platforms, and railing systems.
- E. Closeout Submittals:
 - 1. Operation and Maintenance Data: Manufacturer's instructions for maintenance of ramp system components and finishes, and for storing and relocating ramp system.
 - 2. Warranty Documents: Issued by manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. All units shall be inspected upon delivery to assure that all the proper materials have been received and that the units are not damaged. Damaged units shall be removed from the site.

1.6 PROJECT/SITE CONDITIONS

- A. Field Measurements: Verify that field measurements and project conditions are as indicated on shop drawings, note discrepancies on shop drawings.

1.7 SEQUENCING

- A. Do not install ramp systems until construction activities which would affect, or be affected, by installation of ramp systems is complete. Such construction activities may include:
 1. Final grading.
 2. Paving.
 3. Sodding/seeding.
 4. Exterior finishes.
 5. Doors and windows.

1.8 WARRANTY

- A. Manufacturer's Warranty: The manufacturer shall have in writing a warranty against defects in materials and workmanship for a minimum of 10 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: A*COM, Inc., 855 Chicago Road, Quincy, MI 49082; tel (800)800-3864

2.2 COMPONENTS

- A. Ramp Sections:
 1. Framing: All aluminum extruded shapes alloy-temper 6005-T5 or 6061-T6.
 2. Walking surface: All aluminum extruded shapes alloy-temper 6005-T5 or 6061-T6 with bi-directional knurling. Plank extrusion is 1-1/2 inches deep by 6 inches wide self-mating aluminum deck to form a continuous non-skid walking surface.
 3. Curb: Aluminum extruded shapes alloy-temper 6005-T5 or 6061-T6 to form continuous edge protection along walking surface, minimum 3 inches high (such that a 4" diameter sphere can not pass through where any portion of the sphere is within 4" of the walking surface).
 4. Walkway widths: Minimum width 48."
- B. Platforms:
 1. Framing: All aluminum extruded shapes alloy-temper 6005-T5 or 6061-T6.
 2. Walking surface: All aluminum extruded shapes alloy-temper 6005-T5 or 6061-T6 with bi-directional knurling. Plank extrusion is 1-1/2 inches deep by 6 inches wide self-mating aluminum deck to form a continuous non-skid walking surface.
 3. Turn Platform size: Minimum of 64 inches by 64 inches clear area.
 4. Turnback Platform size: Minimum of 64 inches by 124 inches clear area.
- C. Leg Assemblies:
 1. Legs: Aluminum extruded shapes alloy-temper 6005-T5 or 6061-T6 square tube 1-1/2 inches by 2 inches with a 1/8 inch wall and radiused edges. Manufacturer's standard lengths as shown on drawings.
 2. Support pads: Aluminum extruded shapes alloy-temper 6005-T5 or 6061-T6. Stamped 1/4 inch thick sheet stock 6 inches by 10 inches.
 3. Ramp support: Aluminum extruded shapes alloy-temper 6005-T5 or 6061-T6 pivots to level legs on grade and allows for leg height adjustment.
 4. Platform support: Aluminum extruded shapes alloy-temper 6005-T5 or 6061-T6 allows for leg height adjustment.
- D. Rails:
 1. Guardrails: Aluminum extruded shapes alloy-temper 6005-T5 or 6061-T6. Constructed of square tube 1-1/2 inches by 2 inches with a 1/8 inch wall and radiused edges. Top of guardrail is located 42 inches above, and parallel to, walking surface.

2. Handrails: Aluminum extruded shapes alloy-temper 6005-T5 or 6061-T6. Constructed of square tube 1-1/2 inches by 2 inches with a 1/8 inch wall and radiused edges and a top rail of round tube 1-2/3 inches outside diameter with a .140" wall (1-1/4" Schedule 40). Top of handrail is located 38 inches above, and parallel to, walking surface.
3. Grasping rails: Aluminum extruded shapes alloy-temper 6005-T5 or 6061-T6. Constructed of round tube 1-2/3 inches outside diameter with a .140" wall (1-1/4" Schedule 40).
4. Vertical pickets: Aluminum extruded shapes alloy-temper 6005-T5 or 6061-T6. Constructed of square tube 3/4 inches by 3/4 inches by .085 inch wall. Maximum space between any handrail components is not to exceed 4 inches.

E.Steps:

1. Framing: All aluminum extruded shapes alloy-temper 6005-T5 or 6061-T6.
2. Walking surface: All aluminum extruded shapes alloy-temper 6005-T5 or 6061-T6 with bi-directional knurling. Plank extrusion and Nosing extrusion are 1-1/2 inches deep by 6 inches wide mating aluminum deck to form a continuous non-skid walking surface of 48 inch clear width. Riser heights are 6 inches or 7 inches.
3. Leg Assemblies: All aluminum extruded shapes alloy-temper 6005-T5 or 6061-T6 square tube 1-1/2 inches by 2 inches with a 1/8 inch wall and radiused edges. Designed to allow for height adjustment from 4 inches to 8 inches.
4. Handrails: Standard handrail as listed in Section 2.2.D.

F. Fasteners:

1. Supports/Leg Assemblies: All stainless steel, series 18-8, 304.
2. Rails: Mechanically galvanized, self drilling, self tapping screws.

2.3 FABRICATION

- A. Weld aluminum components by gas metal arc welding (GMAW) or MIG.
- B. Deburr exposed surfaces to smooth finish, free of sharp edges.
- C. Fabricate railings to form smooth continuous gripping surface along ramps, platforms, and steps.

2.4 FINISHES

- A. Ramp, platform, and step tread walking surfaces: Extruded bi-directional slip-resistant knurled surface in mill finish.
- B. Grasping rails: Clear satin anodized finish.
- C. All other exposed surfaces: Mill finish.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that grade and threshold elevations are within adjustment tolerances of ramp system.

3.2 INSTALLATION

- A. Install ramp system in accordance with shop drawings and manufacturer's instructions.
- B. Ensure that ramps are at indicated slopes, that landings are level, and that legs are plumb.
- C. Ensure that handrails are securely attached, with a smooth continuous gripping surface.

3.3 PROTECTION

- A. Protect installed ramp systems from damage by subsequent construction activities until Substantial Completion.
- B. Repair damage to finishes or operation of ramp systems caused by subsequent construction in accordance with manufacturer's recommendations; replace components which cannot be repaired to Architect's acceptance.

CODE ISSUES - BOCA 1999

The following list is a general guideline only. It is meant to highlight code issues and sections that may be relevant to your project. This list is not intended to cover all codes that apply to any given project. Please consult your local code officials for a complete list.

SECTION 1005	General Limitations
SECTION 1014	Stairways
SECTION 1016	Ramps
SECTION 1021	Guards
SECTION 1022	Handrails
SECTION 1606	Live Loads

Ramps and Platforms

- 1016.2 minimum clear width = 44" if > 50 people, minimum clear width = 36" if < 50 people
maximum ramp run = 30'
- 1016.3 maximum slope = 1:12, maximum cross slope 1:48
- 1016.4 minimum straight landing size - width of ramp x 60", minimum turn platform size - 60" x 60"
- 1016.5 guards on both sides of all ramps with rise over 6"
- 1016.7 ramps must have slip-resistant surface
- 1606.2 minimum uniform live load = 100 psf,
minimum concentrated live load = 300 pounds / 4 square inches of tread

Handrails and Guardrails

- 1005.5 guards required on ramps and landings 15-1/2" above grade
- 1021.2 minimum guard height = 42", minimum guard height = 36" if < 30" from grade below
- 1021.3 guard balusters/pickets shall not permit a sphere of 4" to pass through or form a ladder effect
- 1022.2 handrail height minimum = 34" maximum = 38"
for handrails on guard minimum = 36" maximum = 42"
minimum handrail radius = 1-1/4" diameter maximum = 2"
minimum handrail distance from adjacent wall or surface = 1-1/2"
maximum handrail projection into clear width = 3-1/2"
handrails must be continuous without obstructions
between segments handrails must be continuous or have loops
loops must extend 12" beyond end of ramp parallel to ground and return to post
- 1606.4 structural loading in ASCE 7

Steps

- 1005.5 guards required on stairways 15-1/2" above grade
- 1014.3 minimum width = 44", minimum width = 36" for occupancy < 50
maximum handrail projection into clear width = 4-1/2"
- 1014.5 maximum rise = 12'
- 1014.6 minimum riser = 4" maximum riser = 7", minimum tread = 11"
riser/tread variance < 3/8", risers shall be solid, nosing bevel < 1/2"
- 1014.7 handrails must be continuous on both sides
intermediate handrails required at widths > 60"
- 1022.2 minimum handrail distance from adjacent wall or surface = 2-1/4"
loops must extend 12" beyond the top of the stairs parallel to ground and return to post
loops must extend the depth of 1 tread and then 12" parallel to ground and return to post
- 1606.2 minimum uniform live load = 100 psf
minimum concentrated live load = 300 pounds / 4 square inches of tread

CODE ISSUES - ICC/ANSI

The following list is a general guideline only. It is meant to highlight code issues and sections that may be relevant to your project. This list is not intended to cover all codes that apply to any given project. Please consult your local code officials for a complete list.

SECTION 303	Changes in Level
SECTION 405	Ramps
SECTION 406	Curb Ramps
SECTION 504	Stairways
SECTION 505	Handrails

Ramps and Platforms

- 303.2 max vertical change in level = 1/4 in.
- 303.3 max beveled change in level = 1/2 in.
w/ max slope of 1:2
- 303.4 changes in level greater than 1/2 in shall be ramped
- 405.2 max slope of 1:12
existing buildings see Table 405.2 1:10 to 1:8 for max 3" rise 1:12 to 1:10 for max 6" rise
- 405.3 max cross slope of 1:48
- 405.4 floor surface "stable, firm, and slip resistant" (Section 302)
max openings smaller than 1/2 in. diameter sphere
- 405.5 min clear width = 36 in.
- 405.6 max ramp run rise = 30 in.
- 405.7 landings required at top and bottom of each ramp run max slope of 1:48
min clear width = width of widest ramp off platform
min length = 60 in.
min size of turn platform = 60 in. x 60 in.
doorway maneuvering clearances may overlap platform
(refer to Section 404.2.4 and 404.3.2)

Handrails and Guards

- 405.8 required with rise > 6"
- 505.4 handrail height = 34" - 38"
- 505.7 handrail diameter 1.25" - 2"
- 505.10 12" extension required at top and bottom of ramps and stairs. inside turns may be continuous

Steps

- 504.2 risers 4" min - 7" max, treads 11" min
- 504.3 open risers are not permitted.

bridging the gap.

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A*COM WARRANTY

A*COM Inc. warrants its products against defects in material and workmanship for 10 years from the date of purchase. Defective units will be repaired or replaced, at our option, and returned to the original purchaser freight paid, provided the ramp is sent freight prepaid to us along with proof of purchase. This warranty is void in case of abuse or improper use of the product.

In no event shall A*COM Inc., be liable for special, incidental or consequential damages or injuries, or for any loss, damage, or injury resulting directly or indirectly from any occurrence which this product is represented to avoid.

This warranty is in lieu of all other guarantees either expressed or implied and is valid only in the United States and Canada. In some States, limitation on the length of the warranty period is prohibited. This warranty recognizes any and all rights you may have under appropriate State law.

If warranty work is required, contact the dealer or place of original purchase. A*COM Inc. will then be contacted and a return authorization form will be filled out and an authorization number assigned by the factory. No product is to be returned to the factory without proper authorization.

Upon receipt, A*COM Inc. will assess the problem and determine the proper course of action. If warranty work is required, the product will be repaired or replaced and returned as outlined above.

A*COM Inc. reserves the right to refuse any warranty work on product that shows obvious abuse or use other than what the product was originally designed for.

Please check the instruction manual for maintenance and safety information concerning the proper care and use of the ramps.

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