

SECTION 05 51 33.16  
INCLINED METAL LADDERS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Aluminum Ships Ladders and Crossover Stairs

1.2 RELATED SECTIONS

- A. Section 05 12 00 - Structural Steel Framing: Roof structure and opening support.  
B. Section 05 50 00 - Metal Fabrications: Miscellaneous metal supports.  
C. Section 06 10 00 - Rough Carpentry: Roof framing and opening support.  
D. Section 07 42 00 - Wall Panels: Roof curb flashing.

1.3 REFERENCES

- A. OSHA 1910.25: Stairways.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00.  
B. Manufacturer's data sheets on each product to be used, including:  
1. Preparation instructions and recommendations.  
2. Storage and handling requirements and recommendations.  
C. Shop Drawings for Stairs:  
1. Plan and section of stair installation.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.  
B. Store stair until installation inside under cover. If stored outside, under a tarp or suitable cover.

1.6 WARRANTY

- A. Limited Warranty: Five years against defective material and workmanship, covering parts only, no labor or freight. Defective parts, if deemed so by the manufacturer, will be replaced at no charge, freight excluded, upon inspection at manufacturer's plant which warrants same.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Provide **TUFLADDER-SL** system as manufactured by Thompson Fabricating, LLC. 1411 Commerce Place, Birmingham, AL 35217. Phone: (205) 841-0441. Fax: (205) 841-0822. www.tfco.com

2.2 ALUMINUM SHIPS STAIR

- A. Aluminum Ships Stair and Components: Stair, mounting brackets and handrails on both sides.  
1. Model: TLSL\*\* (\*\* = height in vertical inches) **TUFLADDER-SL** as manufactured by Thompson Fabricating, LLC  
2. Capacity: Unit shall support a 1,000 lb (454 kg) total load without failure.  
3. Degree of Incline: 60 to 70 degrees.  
4. Performance Standard: Units designed and manufactured to meet or exceed OSHA 1910.25.  
B. Components:  
1. Stair Stringer: 6 inch by 2-1/2 inch by 3/16 inch extruded 6061-T6 aluminum channel.  
2. Stair Treads: 6-3/4 inch by 1-1/8 inch by 1/8 inch extruded 6063-T6 aluminum with striated slip resistance surface standard. Treads shall be bolted to stringer with 3/8" A316 stainless steel bolts.  
3. Stair Mounting Brackets:  
a. Floor Brackets: 3 inch by 3 inch by 1/4 inch aluminum angle.  
b. Top Bracket: 1/4 aluminum plate.  
4. Handrails: Thompson Fabricating, LLC **TUFRAIL** 1-1/2 inch Schedule 40, 6105-T5 aluminum pipe provided with internal aluminum fittings.

- 5. Platforms
  - a. Surface: Platforms shall have aluminum swage locked, I- bar grating surface.
  - b. Toe Boards: Extruded 4-3/8 inch aluminum
  - c. Handrails: Thompson Fabricating, LLC **TUFRAIL** 1-1/2 inches Schedule 40, 6105-T5 aluminum pipe provided with internal aluminum fittings.
  - d. Frame: Platform support frames shall be 6 inch by 2-3/4 inch by 3/16 inch with integrated 2 inch grating support extruded 6063-T6 aluminum
- 6. Finishes:
  - a. Standard: Mill finish on aluminum all components.
  - b. Optional Clear Anodized handrail components
  - c. Optional Safety Yellow Powder Coat finish available on handrail pipe with mill finish connection components
- C. Options
  - 1. Ladder safety post attached to one side of stair to assist the climber in entering or exiting a hatch.
  - 2. 42 inch handrail extension (walk-thru) for accessing platforms, landings or elevated workspaces.
  - 3. Crossover stairs with platform between two stairs.
- 2.3 FABRICATION
  - A. Completely fabricate stair ready for installation before shipment to the site.
  - B. Handrails shipped loose to bolt on in field
- PART 3 EXECUTION
- 3.1 EXAMINATION
  - A. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
  - B. Examine materials upon arrival at site. Notify the carrier and manufacturer of any damage.
- 3.2 INSTALLATION
  - A. Install in accordance with approved submittals.
- 3.3 PROTECTION
  - A. Protect installed products until completion of project.
  - B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION