

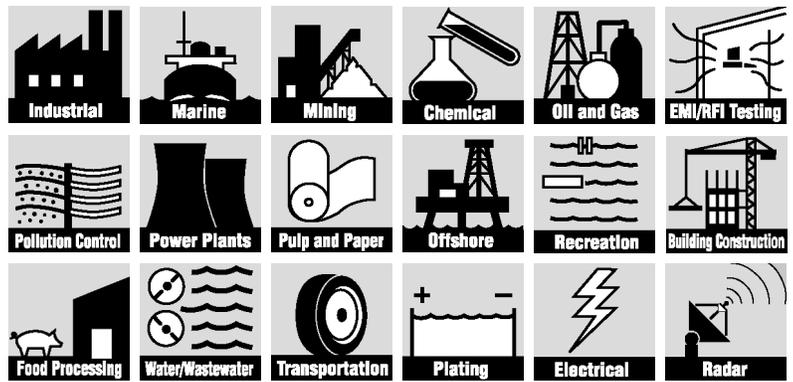
STRONGWELL®

SAF RAIL™

FIBERGLASS LADDER AND CAGE SYSTEMS



Fiberglass Ladders & Cages



SAFRAIL™ fiberglass ladders and ladder cages mounted on the sides of tanks and buildings are a common sight in a wide range of industries. Fiberglass ladder and ladder cage systems have been in use since the 1950's in chemical plants and other corrosive environments. Even in complete immersion applications, fiberglass has outlasted aluminum and steel and required little or no maintenance.

Sizes & Availability

SAFRAIL™ ladders are fabricated in a standard 18" (46mm) rung width configuration with 12" (30mm) rung spacings. Various ladder lengths can be produced as practical. Standard SAFRIL™ ladder and ladder cage systems are designed and fabricated to meet the requirements of OSHA 1910.27. Custom colors and custom designed ladders and access cages can be fabricated upon request. Ladders can be shipped pre-assembled for installation in the field.

Materials of Construction

SAFRIL™ ladders and ladder cage systems are produced using a premium grade polyester resin system with flame retardant and ultraviolet (UV) inhibitor additives. A vinyl ester resin system is available upon request for additional corrosion resistance. Standard side rails and cages are pigmented OSHA safety yellow. The rungs are a pultruded fiberglass polyester tube with a fluted, non-skid surface.

Specification

SAFRIL™ fiberglass ladder systems shall be fabricated from pultruded fiberglass components as produced by Strongwell. Cage hoops shall be produced by the open molded hand lay-up method.

The pultruded parts shall be made with a fire retardant polyester resin which meets the ASTM E-84 test for flame spread of 25 or less and contains a UV inhibitor. The color shall be OSHA safety yellow.

SAFRIL™ Ladders and Ladder Cages

SAFRIL™ fiberglass reinforced plastic (FRP) ladder and cage systems shall meet the requirements set forth in OSHA 1910.27.

Ladders shall be shop assembled and may be pre-drilled and prepared for field attachment of standoff clips.

Materials

The side rails, rungs and cage straps shall be pultruded fiberglass reinforced components. The side rails shall be 2" (50mm) square tube with a wall thickness of .156" (4mm) or greater. The rungs shall be pultruded 1.25" (32mm) diameter FRP fluted tube.

Cage hoops shall be manufactured by the open mold hand lay-up process with a width of 3" (76mm) and thickness of 1/4" (6mm) minimum at the top and bottom and 2" x 1/4" (50mm x 6mm) at the intermediate hoops. The cage shall be interconnected with 2" x 3/16" (50mm x 4.8mm) pultruded straps spaced 9" (230mm) on center around the hoop.



This fiberglass ladder and cage provide worker access to a maintenance platform at a Ciba Geigy plant in the northeastern United States.



Fiberglass access ladders are used throughout the service areas of Sea World in Orlando, FL, and resist saltwater corrosion and reduce maintenance costs.

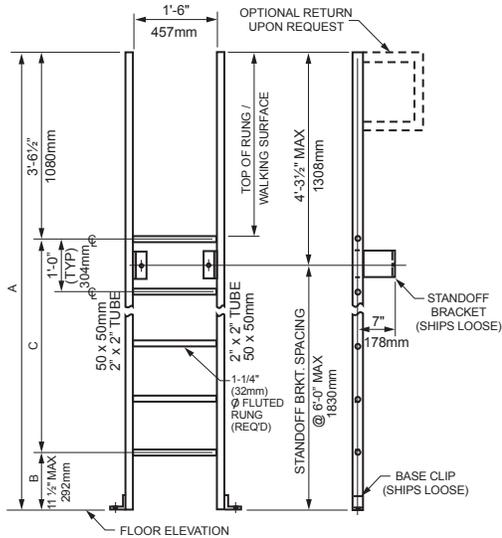
How to Order

NOTE: To assist our customers in submitting the necessary data for quotation, fabrication worksheets have been developed for online use and can be accessed at Strongwell.com.

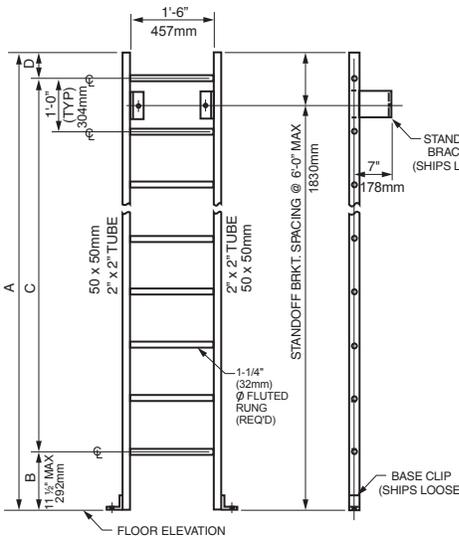
- RESIN SYSTEM:** The standard resin system is a polyester with flame retardant. A vinyl ester resin system is available upon request.
- LADDER CAGE:** Note if a ladder cage is required. Determine the exit method at the top of the ladder cage. Strongwell will choose the starting height if none is given. The starting height will be between 7' (2134mm) and 8' (2438mm) as required by OSHA. Note if the cage is to be assembled or if it is to be shipped with the ladder as a kit. The ladder cage is made using a polyester resin system with a flame retardant. A vinyl ester resin system is available upon request.
- COLOR:** Standard SAFRAIL™ ladders feature yellow side rails and rungs. Custom colors are available upon request.
- PAINTING:** A polyurethane coating is recommended to prevent fading due to UV exposure associated with outdoor installations.
- ORDERING:** Choose one of the four standard ladder types shown on this page. Add optional return if required. Determine the dimensions required per the type of ladder chosen.
- SPECIAL ORDERS:** If none of the standard ladder types shown here meet the customer's requirements, a drawing or a sketch must be submitted for pricing purposes.

Standard Ladder Systems

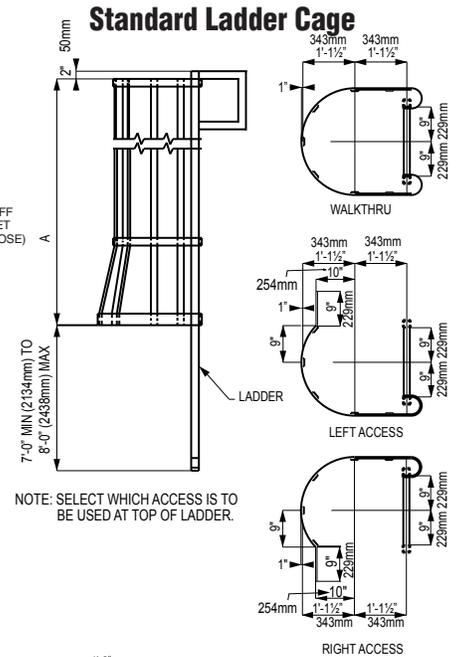
Standard Walk-Through Ladder with Base Clip



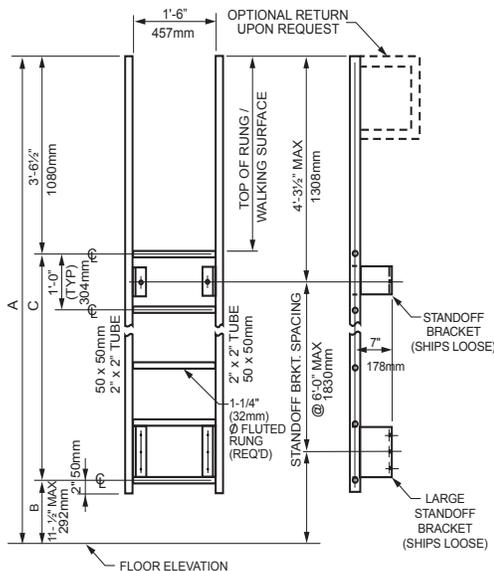
Standard Ladder with Base Mount



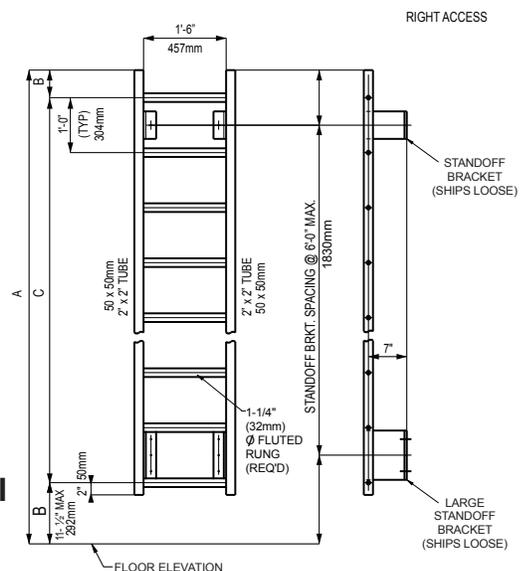
Standard Ladder Cage



Standard Walk-Through Ladder with Large Standoff Bracket Wall Mount

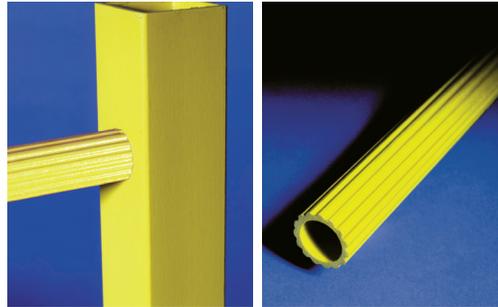
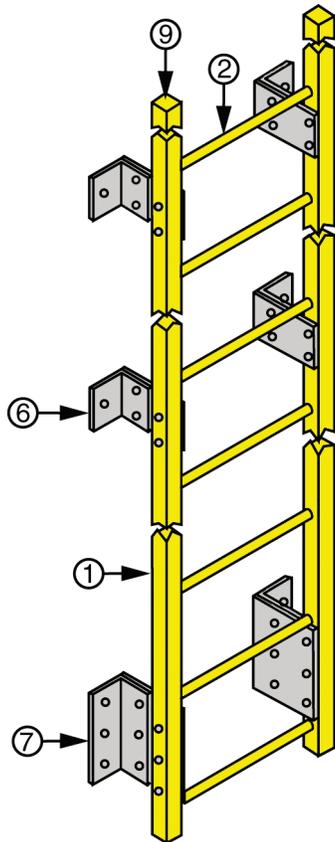


Standard Ladder with Large Standoff Wall Mount

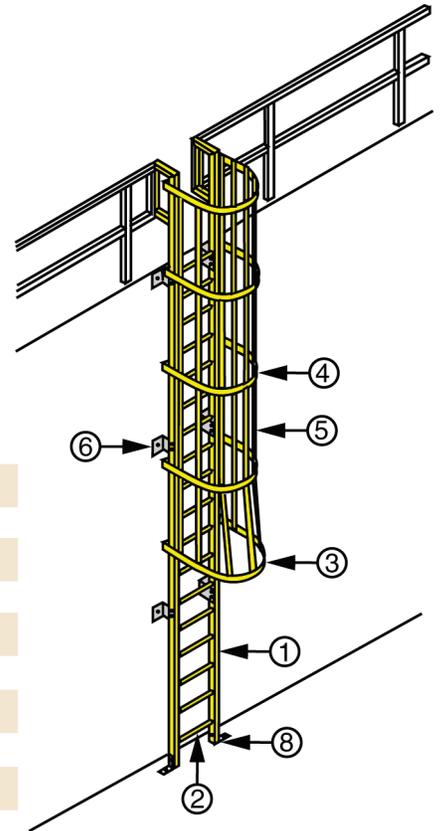


Ladder Systems

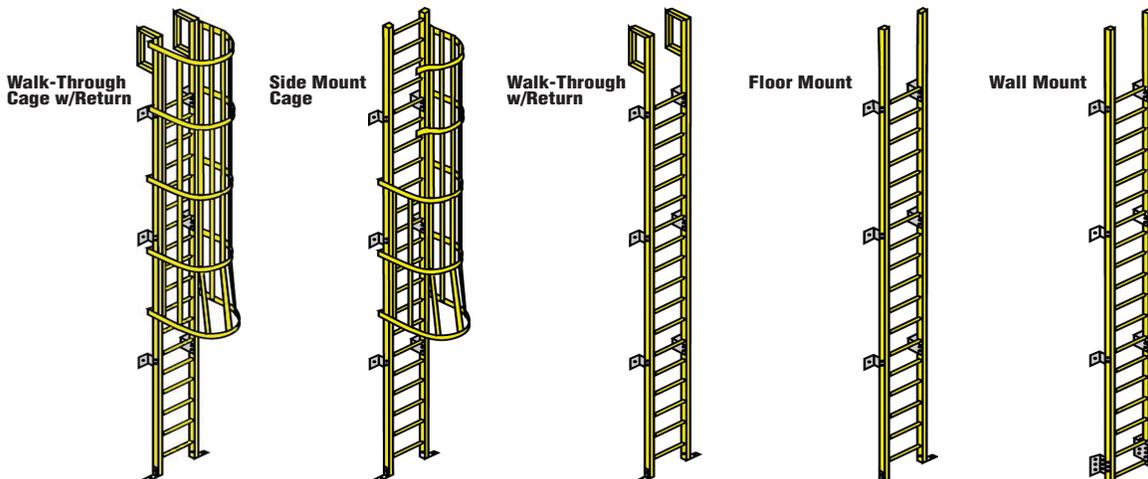
Part Identification



NAME	DESCRIPTION
1 Side Rail	2" x .156" (50x4mm) square tube
2 Rung	1.25" (32mm) dia. fluted tube
3 Top or Bottom Hoop	3" x 1/4" (76x6mm) strip
4 Intermediate Hoop	2" x 1/4" (50x6mm) strip
5 Cage Straps	2" x 3/16" (50x4.8mm) strip
6 Standoff Bracket	5" (127mm) bracket plate
7 Standoff Bracket	10-1/2" (267mm) bracket plate
8 Base Angle	3" (76mm) angle
9 End Plug	Molded end cap



Ladder Options



STRONGWELL

ISO-9001:2008 Quality Certified and ISO-14001:2004 Environmentally Certified Manufacturing Plants

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