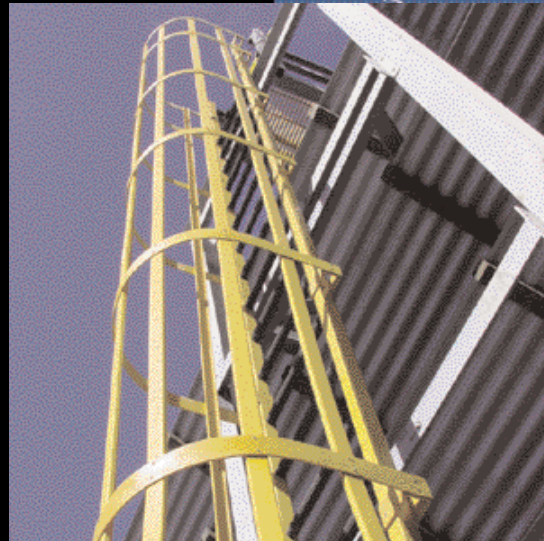


**DeltaRalf™ & DeltaLadder™  
FRP Handrail and Ladder Systems**



**Delta Composites, LLC.**

# DeltaRail™ & DeltaLadder™ FRP Handrail and Ladder Systems

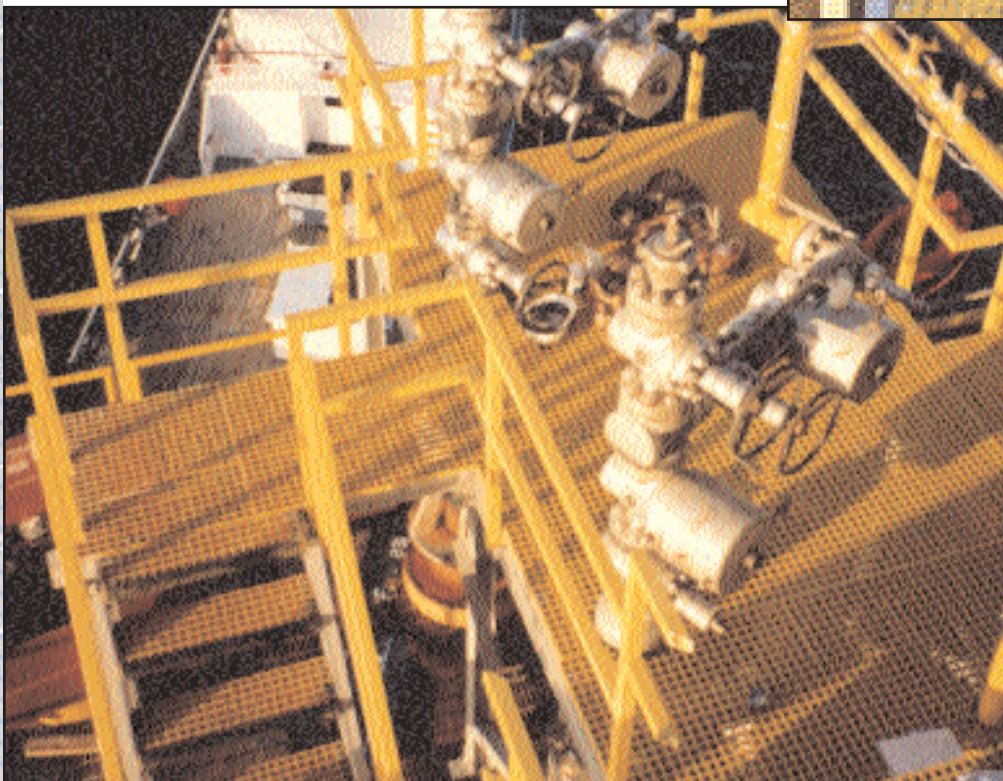
Delta Composites' corrosion resistant fiberglass products are found throughout the world in a variety of applications and industries where safety, low maintenance costs, easy installation, and long service life are essential.

## *Corrosion Resistant*

Unlike conventional metals, Delta products eliminate the rusting and corrosion problems associated with traditional materials. A proven pultrusion process, which combines fiberglass and proprietary resins, creates a durable and safer structure that outlasts metal, and offers a significantly lower life cycle cost. Additionally, special UV inhibitors included in the formulation provide extra protection from the effects of weathering.

## *Easy to Install, Easy to Maintain*

There's no need for heavy equipment or expensive tools since Delta handrail and ladder systems are less than half the weight of steel. Lighter weight means lower shipping costs and less manpower for installation. With no scraping, sandblasting, or painting required, they are virtually maintenance free.



### ***Strong and Durable***

Pound for pound, fiberglass is stronger than steel. Plus, when designed to certain load-response criteria, FRP material will weigh one-third to one-half of its steel counterpart. Our handrails and ladders get their strength from a high percentage of glass within the laminate, providing durability, high unidirectional strength, and stiffness.

### ***Non-Conductive and Fire Retardant***

Delta handrails and ladders are electronically and thermally nonconductive, and are fire retardant for a safer work environment. Our products meet the self-extinguishing requirements of ASTM E-84, and have a Class 1 flame spread rating of 25 or less. Because our systems are non-metallic, electromagnetic and radio wave frequencies are completely unaffected.

### ***A Variety of Color Choices***

The standard color is Safety Yellow, but any system can be custom ordered to your specific color requirements.



### ***Quality Assurance***

All Delta Composites handrail and ladder systems are manufactured under a strict quality control program. This program coincides with our mission to offer the highest quality products and services and to continue to excel in research and development for new products.

### ***Safe Shipping***

All orders are carefully secured and shipped on dedicated trucks to ensure on-time, damage-free delivery.



# DeltaRail™ Handrail Systems

DeltaRail meets your requirements, from small platforms to complex structures, with high-strength, maintenance-free handrails that are ideal for any location.

## *Perfect for a Wide Range of Applications*

Delta offers two handrail systems that meet a variety of needs: Standard Duty and Heavy Duty. No matter the severity of your service environment, there's a Delta Handrail System for you.

For complex handrail solutions, Delta has the capability to design, manufacture, and fabricate a custom system. For less complicated projects, we can provide easy-to-assemble kits for cost-effective installations.



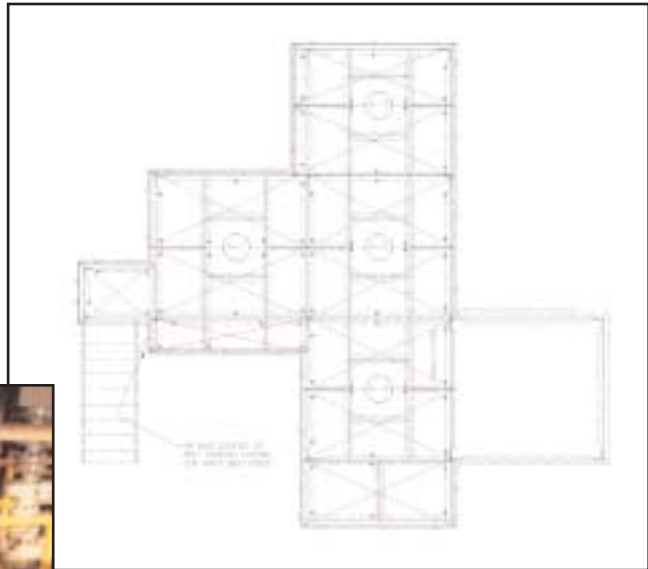
## Industries Using Fiberglass Handrail

- Offshore & Marine
- Petro-chemical & Refining
- Communications
- Water/Wastewater
- Transportation & Transit
- Aerospace
- Automotive
- Pulp & Paper
- Mining
- Metal Plating
- Food & Beverage
- Textile
- Electrical & Power Generation
- Computer & High-Tech
- Recreational Water Parks & Pools
- Zoos & Aquariums
- Military
- Medical
- Shipping
- Many Others



### ***Unique Solutions to Meet Your Needs***

Delta's in-house engineering and drafting capabilities ensure that custom projects meet customer specifications with quality and accuracy for every phase: design, fabrication, and installation. With the advantage of 3-D structural analysis, quality performance and structural integrity is guaranteed.



### ***Modular Kits Make Do-It-Yourself Easy***

For projects that don't require design services, easy-to-assemble modular kits are available. These low-cost systems include everything needed for a quality construction. Minimal assembly skills and common hand tools are all that's required for installation.

### ***Code Compliant***

All DeltaRail Handrail Systems meet or exceed the following specifications and/or building codes:

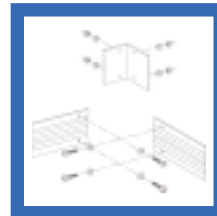
- BOCA Basic Building Code, Section 1615.8
- National Building Code, Section 403-407
- OSHA, Section 1910.23
- Southern Building Code, Section 1207.2
- Uniform Building Code, Section 16



# DeltaRail™ Modular Handrail Kit Components



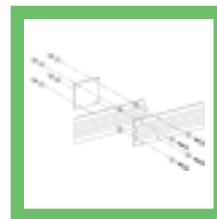
**T-Rail**  
1-1/2" x 1/4" square tube – 20' stock (top rail)



**K90-Splice**  
90° kick plate splice



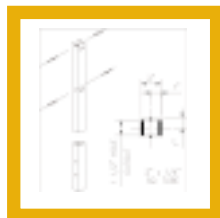
**M-Rail**  
1-1/2" x 1/4" round tube – 20' stock (mid rail)



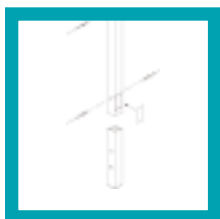
**K-Splice**  
Inline kick plate splice



**KP-400**  
4" kick plate – 20' stock



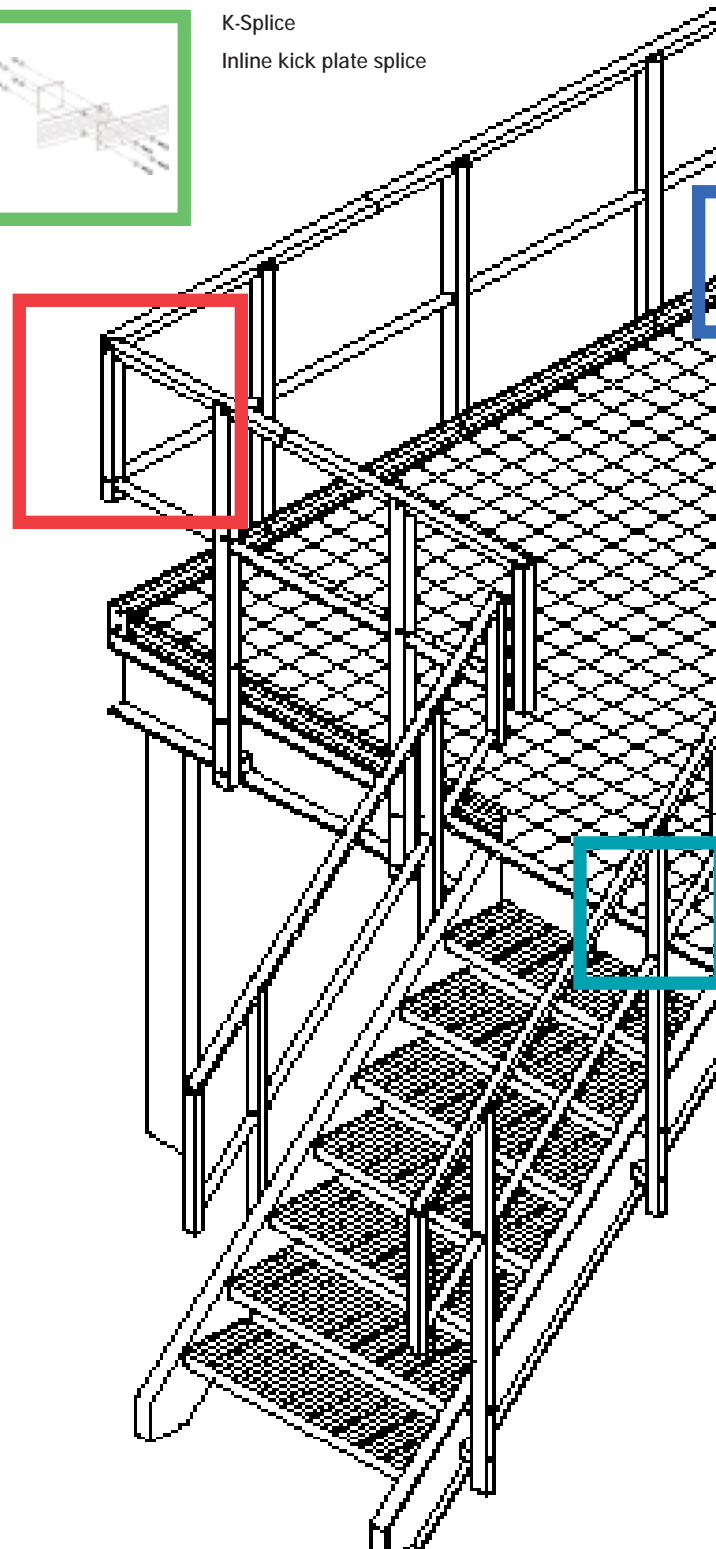
**2R-Post**  
Two-rail prefabricated 2" x 1/4" ST post



**2R-Post-Stair**  
Two-rail prefabricated 2" x 1/4" ST post – incline



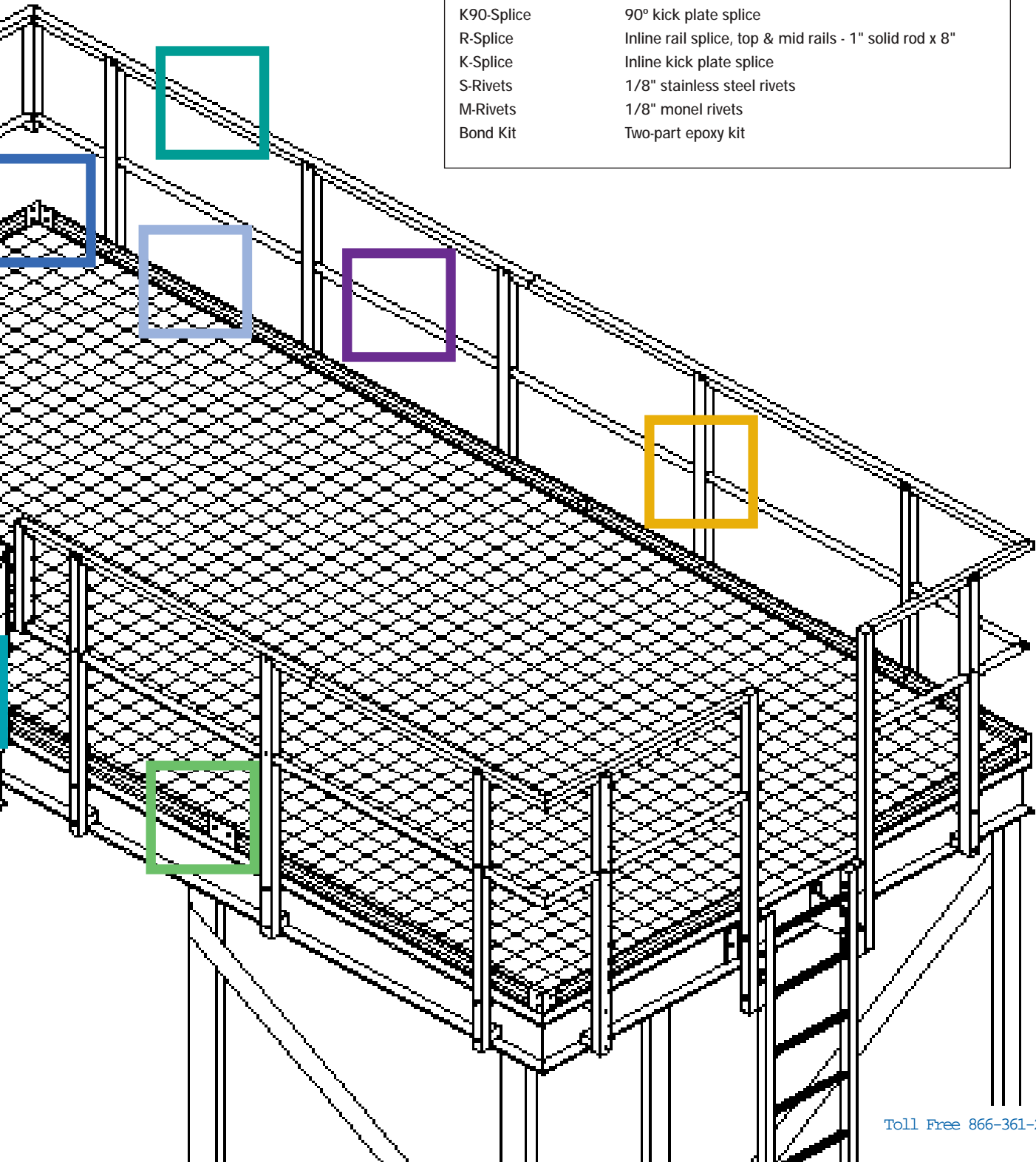
**R90-Return**  
90° corner return



Note: For ease of fabrication and increased stiffness, stair posts can be provided perpendicular to stair stringer.

## DeltaRail™ Modular Handrail Kit Components

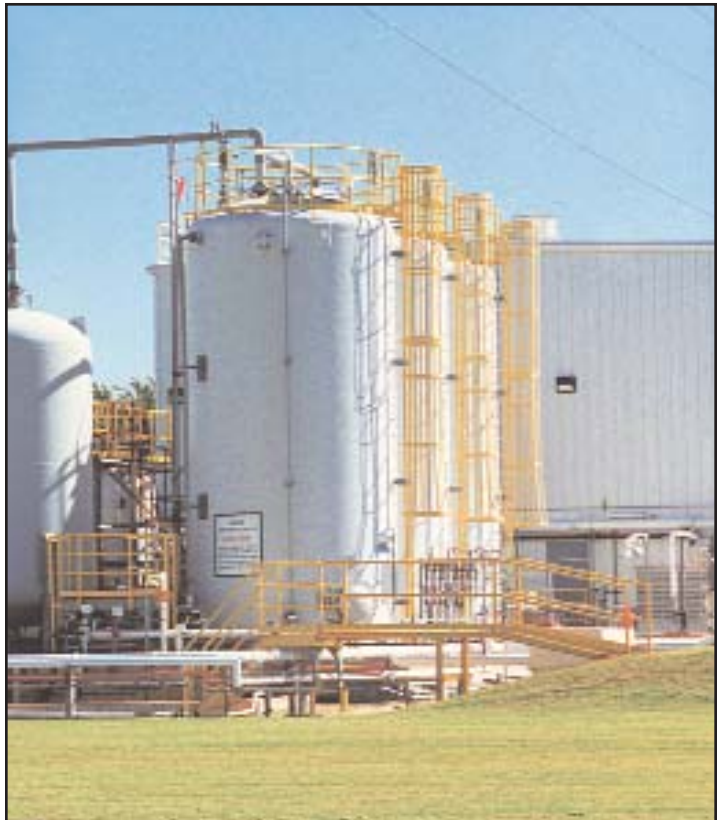
T-Rail	1-1/2" x 1/4" square tube - 20' stock (top rail)
M-Rail	1-1/2" x 1/4" round tube - 20' stock (mid rail)
KP-400	4" kick plate - 20' stock
2R-Post	Two-rail prefabricated 2" x 1/4" ST post
3R-Post	Three-rail prefabricated 2" x 1/4" ST post
2R-Post-Stair	Two-rail prefabricated 2" x 1/4" ST post - incline
3R-Post-Stair	Three-rail prefabricated 2" x 1/4" ST post - incline
R-Return	Standard rail return
R-Return-Stair	Standard rail return - incline
R90-Return	90° corner return
K90-Splice	90° kick plate splice
R-Splice	Inline rail splice, top & mid rails - 1" solid rod x 8"
K-Splice	Inline kick plate splice
S-Rivets	1/8" stainless steel rivets
M-Rivets	1/8" monel rivets
Bond Kit	Two-part epoxy kit



## DeltaRail™ Circular Handrail

Developed for tank and vessel manufacturers, the DeltaRail™ Circular Handrail is a prefabricated fiberglass system that arrives ready to be mounted. It eliminates traditional segmented circular systems and the field fabrication and installation problems associated with them.

Standard sizes are available for 8', 10', 12', 14', and 16' tank diameters. The handrail is manufactured one foot shorter than the outside diameter of the tank; custom diameters are available. The DeltaRail Circular handrail is designed to meet or exceed all the requirements of OSHA, Section 1910.23.





# DeltaLadder™ Safety Ladder Systems

Designed for easy installation and fabrication, DeltaLadder meets or exceeds OSHA requirements with durable construction and corrosion-resistant materials.

## *Ready to Assemble*

DeltaLadder Systems may be purchased in modular kits for fast, hassle-free installation. Ladders are available in standard heights ranging from 8' to 24', with splicing kits available for longer lengths. Optional safety cage kits are designed with pre-drilled hoops for easy attachment. Choose from standard fiberglass ladders for regular, close stand-off supports, or stiffened ladders for longer spans between supports.

## *Lightweight*

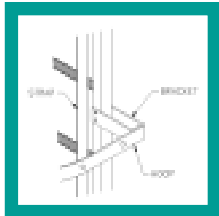
DeltaLadder Systems are one-third the weight of steel and require less maintenance and upkeep. That's because they're manufactured with the optimal combination of fiberglass rovings and isophthalic polyester or vinylester resins, ensuring a long, corrosion-free life.

## *Unique Designs Made to Order*

DeltaLadder can meet all your needs. From platforms or special stand-off distances to self-supporting returns or double-sided dismounts, DeltaLadder can conform to your specifications.



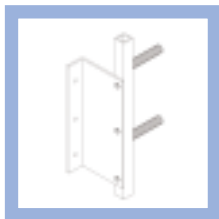
# DeltaLadder™ Safety Ladder Components



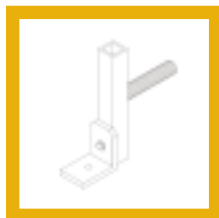
**Safety Cage**  
 OSHA compliant.  
 Safety cages made to order upon request.



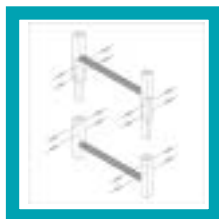
**Wall Mount**  
 3/8" thick, 2-3/16" x 8" x 6" angle bracket comes with 1/2" bolt assembly for attaching to ladder. Hardware for attaching bracket to structure or concrete is provided by installer.



**Ladder Bottom Mount**  
 3/8" thick, 2-3/16" x 8" x 18" angle bracket. Comes with 1/2" bolt assembly for attaching to ladder. Hardware for attaching bracket to structure or concrete is provided by installer.



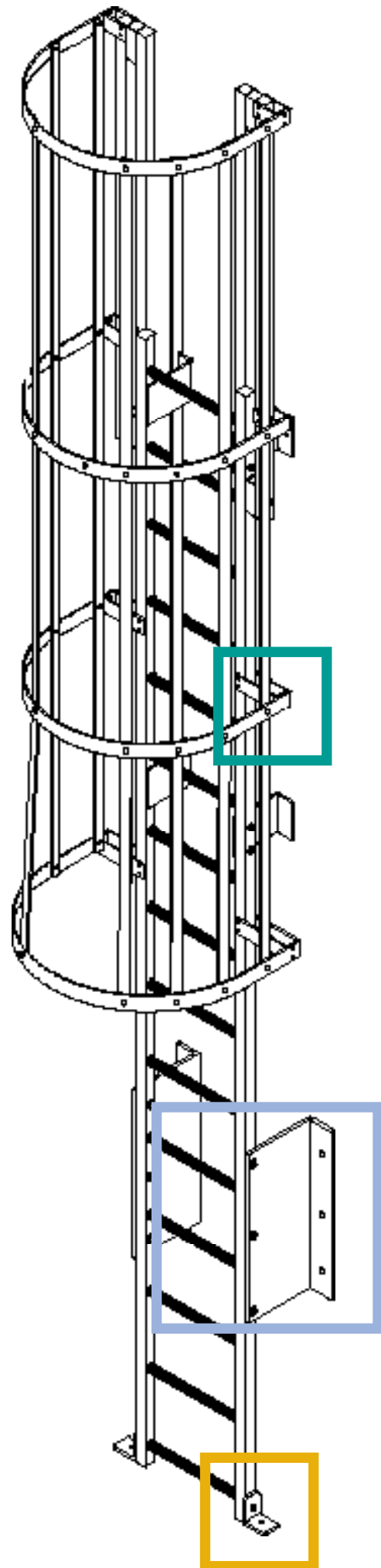
**Floor Mount**  
 3/8" thick, 2-3/4" x 4" x 4" angle bracket comes with 1/2" bolt assembly for attaching to ladder. Hardware for attaching bracket to structure or concrete is provided by installer.



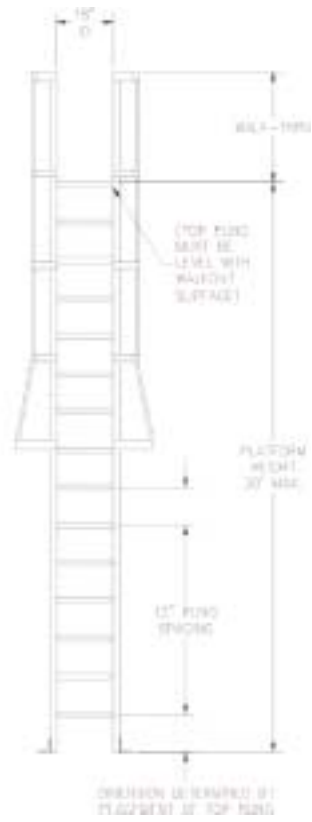
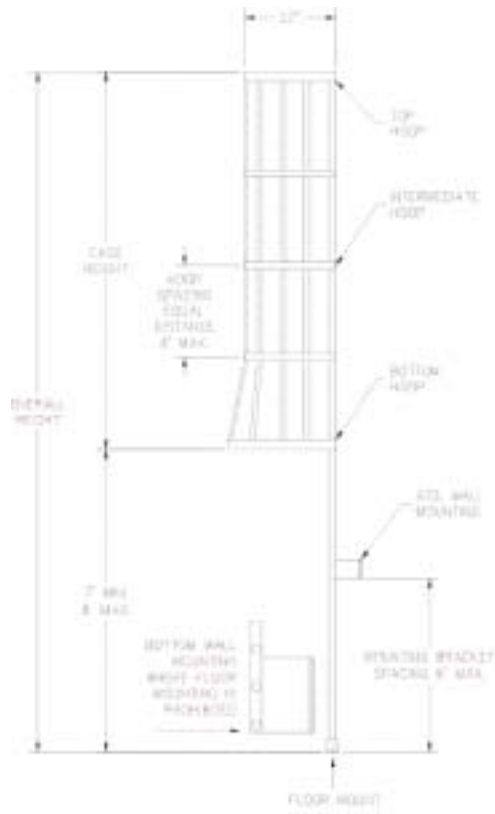
**Splice**  
 Used when ladder exceeds 20 feet.



**Ladder Returns**  
 A variety of ladder returns can be fabricated in order to accommodate any field condition.



Note: Contact Delta Composites for details on our stiffened ladders for long spans.



Standard

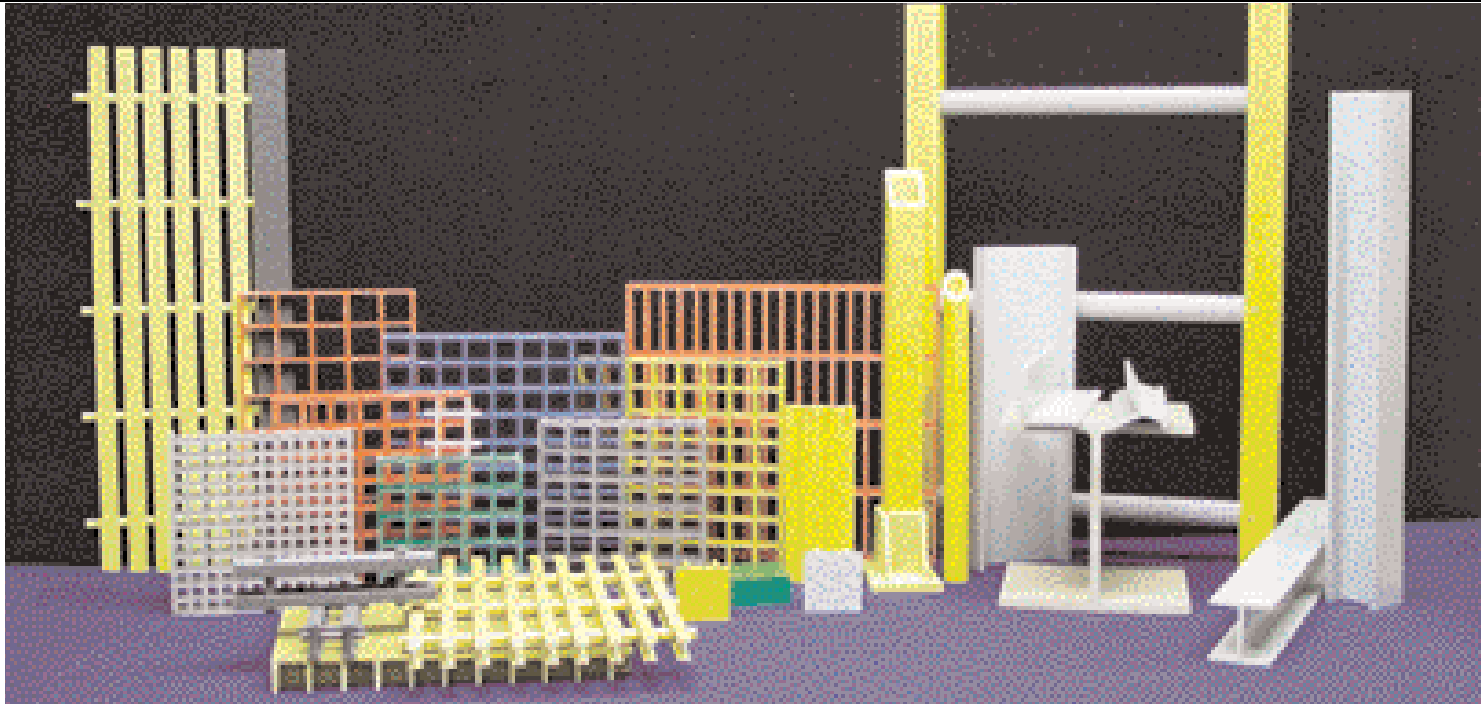


Standard with return



Standard with walk thru

# Also available from Delta Composites



## DeltaGrate™

### High-Strength Molded Grating

Offers a higher glass content (38% by weight) than conventional molded gratings. The DeltaGrate family of products includes:

DeltaGrate Mini-Mesh Grating

DeltaGrate Conductive Molded Grating

DeltaGrate Food-Grade FRP

DeltaGrate Covered Plate Grating

DeltaTread Stair Treads

DeltaGrate Stair Tread Covers

DeltaGrate Fluorescent Grating

DeltaLite Grating

DeltaScreen

Grating Legs

## DeltaSpan™ Pultruded Grating

Highly versatile, cost-effective material used as a structural flooring in a variety of applications that require a high level of stiffness with the added safety of a sure footing. Strong, corrosion resistant, and lightweight.

### *DeltaSpan Phenolic Pultruded Grating*

Excellent for harsh conditions where fire resistance, low smoke, and low toxic fumes are critical concerns.

## DeltaTreads™

A safe and cost effective alternative to conventional steel stair treads. With a solid gritted nosing, DeltaTread is corrosion resistant, slip resistant, and stronger than other fiberglass stair treads. Fabricated molded square-mesh treads and pultruded stair treads are also available.

## Stair Tread Covers

An efficient and cost effective solution to slippery and unsafe stairways. This safety product is typically installed over existing steel stair treads. Available in fluorescent colors for increased nighttime visibility and safety.



## Delta Composites, LLC.

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