



# MasterBrace®

Advanced Pile  
Encapsulation System





# MasterBrace® Process

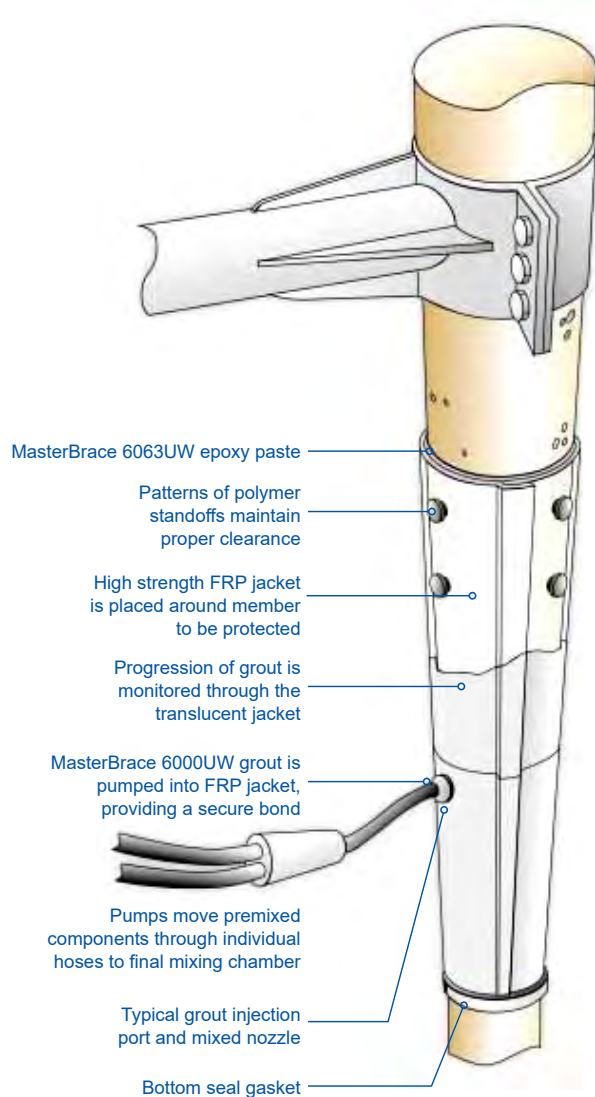
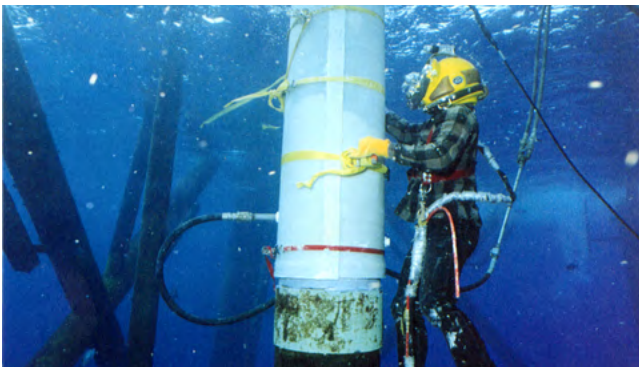
Nature's forces of deterioration are constant and unrelenting. Nowhere is this fact more evident than in marine environments, where corrosion, wave action, marine organisms and other forces are perpetually at work. The impact of deterioration can range between mere aesthetic issues to the general serviceability of a structure, including loss of section and reduced load bearing capacity.

The MasterBrace Advanced Pile Encapsulation process has been designed to address these issues. Since 1984, A-P-E has been used on a wide variety of marine and industrial applications, including bridges, offshore oil and gas structures, dams, wharves, piers, pipelines and chemical process facilities.

### How it Works

Because every application is unique, a team of specialists recommend custom design repair solutions using the Advanced Pile Encapsulation Process to meet specific project requirements. The process begins with the preparation of the surface to be protected. This may require removal of marine growth and any previously applied coatings. A high quality, custom molded, glass fiber reinforced jacket is then placed around the element to be protected and aggregate-filled epoxy grout is pumped into the jacket from the bottom up.

The grout is batched, mixed and pumped with special grout handling equipment that keeps the reactive components of the epoxy separated until just before the grout enters the jacket. Since the jacket is translucent, the operator is able to monitor the grout's progression to ensure a continuous, void-free encapsulation. The scouring effect of the aggregate-filled epoxy grout rising up inside the jacket further enhances the bond to both the jacket and the substrate, creating a tightly bonded composite.



### The MasterBrace Difference

Other methods such as wraps, bags, jacketing systems and coatings do not provide adequate long-term protection, primarily because they lack the necessary bond to stay in place. Many systems are so permeable that they allow corrosion and other forces of deterioration to continue beneath the system, sometimes disguising the deterioration for long periods of time.

By actually forming a composite with the member being protected, the A-P-E Process remains tightly bonded to the member, prohibiting the intrusion of oxygen, corrosive salts and marine organisms. As testament to the long-term durability of the A-P-E Process, many installations are still providing protection after 20 years of service

### Components of the MasterBrace Process

#### MasterBrace 6000UW

A specially blended, three-component, 100% solids epoxy system, specifically designed for encapsulation, in both on-land and subsea applications.

#### MasterBrace 6060FR Translucent Jackets

Marine grade FRP laminates, constructed of layers of E-glass woven roving and mat, that are custom molded to closely fit the element being protected. The jackets are translucent and UV stable so the progress of the grout installation can be monitored, yet they are not effected by the Sun. The jackets remain in place as part of the all-polymer composite repair.

#### MasterBrace Epoxy Pastes

Special two component, underwater curing epoxy compounds for bonding FRP jacket seams and seals (HydroCote™ 3061-I) and for non-sag applications, such as topping-off encapsulations and underwater repairs (HydroCote™ 1063)

#### MasterBrace Grout Handling Unit

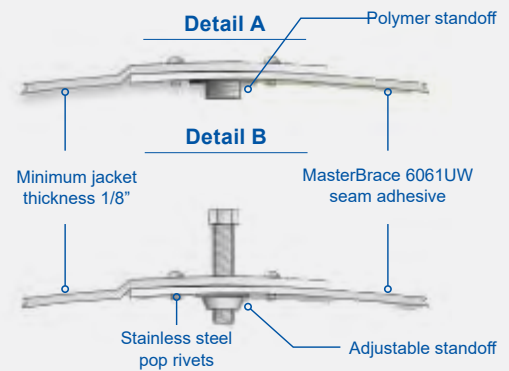
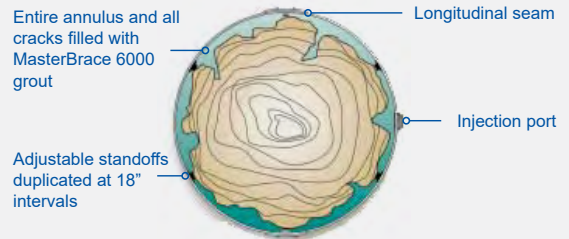
A completely self-contained, air driven unit for batching, mixing and pumping MasterBrace 6000UW Grout by the plural component method.

### Benefits of the MasterBrace A-P-E process:

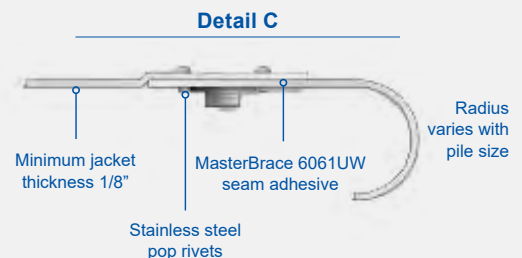
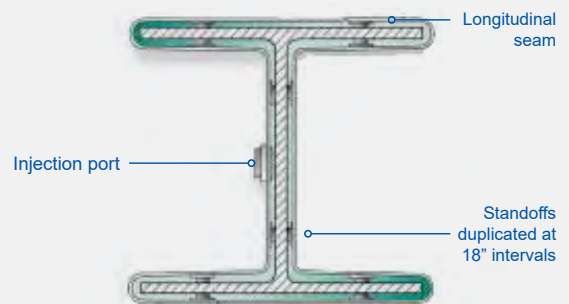
- Extremely durable
- Lightweight
- High strength
- UV and Chloride Resistant
- Custom Molded to Most Shapes
- Aesthetically Pleasing



### MasterBrace 6060FR jacket



### MasterBrace 6060FR Shaped jacket for H pile





## Master Builders Solutions

The Master Builders Solutions brand brings all of MBCC Groups expertise together to create chemical solutions for new construction, maintenance, repair and renovation of structures. Master Builders Solutions is built on the experience gained from more than a century in the construction industry.

The know-how and experience of a global community of MBCC Group construction experts form the core of Master Builders Solutions. We combine the right elements from our portfolio to solve your specific construction challenges. We collaborate across areas

of expertise and regions and draw on the experience gained from countless construction projects worldwide. We leverage global MBCC Group technologies, as well as our in-depth knowledge of local building needs, to develop innovations that help make you more successful and drive sustainable construction. The comprehensive portfolio under the Master Builders Solutions brand encompasses concrete admixtures, cement additives, chemical solutions for underground construction, waterproofing solutions, sealants, concrete repair and protection solutions, performance grouts and performance flooring solutions.

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### MasterAir®

Solutions for air-entrained concrete

### MasterBrace®

Solutions for concrete strengthening

### MasterCast®

Solutions for manufactured concrete product industry

### MasterCem®

Solutions for cement manufacture

### MasterEmaco®

Solutions for concrete repair

### MasterFinish®

Solutions for formwork treatment

### MasterFlow®

Solutions for precision grouting

### MasterFiber®

Comprehensive solutions for fiber reinforced concrete

### MasterGlenium®

Solutions for high-performance concrete

### MasterInject®

Solutions for concrete injection

### MasterKure®

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Solutions for enhanced durability

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 Shakopee, MN 55379 USA

**Customer Service (800) 433-9517**  
**Technical Service (800) 243-6739**  
[master-builders-solutions.com/EN-US](http://master-builders-solutions.com/EN-US)



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