



## **Cooling Towers founding principles are safety, integrity, quality and value.**

These principles are the driving force behind our commitment to our customers. Our mission is to provide superior service at fair prices without sacrificing on safety. These principles apply throughout our organization from the largest construction, upgrade, repair, or maintenance project to the smallest projects and components we offer. We deliver maximum value to our clients by operating safely, efficiently, and responsibly using the best quality products available in the market. Our core principles produce a quality of workmanship and service unsurpassed in the industry.

We are proud to provide our products and services to our clients in all industries and business segments to fulfill their cooling tower needs.

## **OUR SERVICES**

- FRP Conversions
- Repairs, Maintenance and Emergency Response
- Fan Lock
- Tower Upgrades and New Construction
- Tower Parts and Components
- Inspections, Preventative Maintenance and Mechanical Walkways

## **INDUSTRIES**

- Power Generation
- Petrochemical & Refining
- Commercial Buildings
- Industrial Manufacturing
- Automotive Manufacturing
- Pharmaceutical Manufacturing
- Data Centers
- Food & Beverage



## FRP CONVERSIONS

Cooling towers are an essential component in any facilities' processing system, the failure of one or multiple cooling towers would create a serious interruption in the facility's ability to remain online. Most facilities have cooling towers constructed of pressure treated lumber that are close to the end of their service life and are rotted, damaged or close to failure. Cooling Towers, LLC recommends replacing compromised lumber structure with new Fiberglass Reinforced Plastic (FRP) Structural Shapes. FRP structural shapes are superior to pressure treated lumber in a cooling tower structural application in several ways — see Benefits listed. FRP structural shapes are stronger than wood. The fact that FRP structural shapes are impervious to rot is a massive advantage over pressure treated lumber. Lumber structural components have a permeable surface that absorbs moisture. The bacteria-laden moisture degrades the lumber from the inside out, causing the lumber to degrade without any apparent signs of rot from exterior observation. FRP structural shapes are not susceptible to such forms of degradation and therefore provide a lower cost of maintenance throughout a longer service life.

### BENEFITS

- Superior resistance to a broad range of chemicals.
- Stronger and higher flexural strength than pressure treated lumber
- Approximately 1-1/2 times as rigid as pressure treated lumber
- Low conductivity properties — high dielectric capability.
- Significantly higher strength-to-weight ratio.
- Inert and do not release toxic chemicals, therefore making them easily disposable in landfills.

Cooling Towers, LLC specializes in complete and partial FRP Conversions on every cooling tower design from large crossflow and counterflow designs to smaller designs, such as Marley NC and Sigma Cooling Towers. Our professional structural engineer has performed structural calculations and verified the tower design concepts and connection details to ensure the new FRP structural design is in accordance with the latest ASCE and IBC codes. Cooling Towers, LLC recommends combining the FRP Conversion with an upgrade of the fill media and drift eliminators. Replacing the compromised structural components requires the removal of these internal components, which provides a perfect opportunity to replace them with upgraded components. Cooling Towers, LLC can provide a thermal analysis of the cooling tower's performance to provide options to upgrade the thermal capacity of the tower. An FRP Conversion combined with a fill and drift eliminator upgrade provides

virtually the same benefits as purchasing a new cooling tower without all the additional costs associated with new towers such as piping, electrical, instrumentation and concrete.



## COOLING TOWER INSPECTIONS, PREVENTIVE MAINTENANCE, AND ACCESS SYSTEMS

### INSPECTIONS

Cooling Towers, LLC provides comprehensive and detailed inspections of all types of cooling towers. The strength of structural members in a cooling tower decreases with prolonged exposure to atmospheres and treatment/process chemicals. We recommend inspections be completed annually. If you are not aware of the soundness of the structure of your cooling tower, then a thorough inspection and analysis is certainly needed. Structure can be damaged by wind, vibration, chemicals, seismic event or age. A professional inspection ensures that any structural or mechanical difficulties are identified and fixed before they become disasters. Our inspections key in on Safety, Structural integrity, Thermal efficiency, Mechanical equipment, longevity, and a general condition assessment of the tower. We provide a detailed report with recommendations for maintaining your tower.

### PREVENTATIVE MAINTENANCE

We recommend annual maintenance on the mechanical equipment of each cooling tower and fin fan cell. Our comprehensive maintenance program ensures the mechanical components will perform as designed and provide reliable performance. Any issues that are discovered during the execution of the preventative maintenance will be reported immediately. Our team of cooling tower experts will discuss all solutions to correct the identified problems and implement the proper repairs and/or upgrades.

For successful implementation of safe and effective maintenance programs, we recommend the installation of Lockout/Tagout (LOTO) technology (See our FANLOCK). These products and devices create significant improvements in your ability to maintain your tower, while increasing the safety and security of your assets.

### MECHANICAL EQUIPMENT ACCESS SYSTEMS

Mechanical equipment access walkways offer consistent, safe access to the mechanical equipment components. The walkways consist of grating panels supported by FRP structural shapes and are resistant to corrosion and rot. The walkways are equipped with handrails, knee-rails and toe boards. The walkways eliminate the excessive cost need to install scaffolding to access the mechanical components. This significantly improves safety, simplifies periodic maintenance on mechanical components, and significantly reduces cost over the life of the tower.



## REPAIRS, MAINTENANCE, AND EMERGENCY RESPONSE

### REPAIRS & MAINTENANCE

Cooling towers require consistent repairs and maintenance, or the potential exists for catastrophic failure. Cooling Towers, LLC works on all makes and models of towers. Our team has the expertise to provide customized repairs, upgrades, and solutions that will bring your cooling tower back to its original condition and/or improve its performance.

Prioritizing, planning, and executing the repair and maintenance of your tower can significantly improve the operational capacity of your facility and help to avoid a critical failure. A variety of conditions exist that can lead to unnecessary downtime or inefficient operation of a cooling tower. Taking a proactive approach to repairs and maintenance can prevent operations from performing unplanned maintenance, an emergency shut down, causing considerable costs related to loss of production. Repairs and maintenance can be performed one cell at a time, without sacrificing the remaining cells of the cooling tower, therefore minimizing impact to the production process. Our experience allows us to serve cooling tower owners for their repairs and maintenance in a manner that maximizes the benefit.

- FRP Structural Conversion
- Thermal Upgrades
- Emergency Repairs
- Structural Repairs
- Mechanical Equipment Replacement and Upgrade
- Tower Cleaning
- Cold Water Basin Cleaning and Sealing
- Hot Water Distribution Repairs (Basin Cleaning, Maintenance and Replacement)
- Fan Deck Repairs
- Fan Deck Replacement
- Fill & Drift Eliminator Replacement

### EMERGENCY RESPONSE

Cooling Towers, LLC has successfully developed and implemented a Cooling Tower Emergency and Disaster Response Plan. With the annual hurricane season approaching, we have dramatically increased our stock of essential materials in an effort to have them instantly available for our customers. Additionally, we have expanded our recruitment efforts and our portfolio of qualified craftsmen. This allows us to deploy professional, competent cooling tower repair crews nationwide, usually within 24 hours or less or as soon as safely possible.

**Have an emergency Cooling Tower Need? Call us now for immediate action (281) 923-7431**



## TOWER UPGRADES AND NEW CONSTRUCTION

### TOWER UPGRADES

Cooling Towers, LLC can provide a full evaluation of your cooling tower's performance and recommend necessary improvement measures.

The evaluation begins with establishing a "baseline" performance level. This is the original operational capability of the cooling tower when it was purchased and installed. Cooling Towers, LLC will then establish a predicted level of performance at which the tower currently operates. The comparison of the original and current level of thermal capacity and expected service life would provide a clear indication of the amount of degradation that has occurred over the operating life of the tower.

Finally, multiple upgrade options are available with specific improvement levels and associated costs depending on the desired results. All data is presented clearly and logically and tailored to our customers' specific needs, so that our customers can make an informed decision on their cooling tower's thermal performance. In some instances, upgrading your existing tower may not be suitable to meet your operating needs and we would recommend our new construction services.

**OUR NEW COOLING TOWER DESIGNS ARE ENGINEERED FOR EXTREME DURABILITY,  
THERMAL PERFORMANCE, AND YOUR SPECIFIC APPLICATION.**

### NEW CONSTRUCTION

Cooling Towers, LLC provides all services for designing (thermal and structural), procuring, building, and installing new cooling towers. We offer all types and sizes of field-erected and packaged towers for both industrial and commercial applications. All our cooling tower designs optimize thermal performance while satisfying the space, economic, and environmental requirements associated with the project.

Our new tower experts will assist you in planning, designing, and executing your new tower. Our team will be pleased to provide a solution that meets your specific project needs.