Publications List

A complete set of these Standard Specifications $822 plus postage/handling in the U.S.A. Prepayment is requested on all orders. There is a 20% discount to Members. Quantity prices quoted upon request. Prices do not include postage.

Legend Used for Prefixes:

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Description</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>STD</td>
<td>Standard</td>
<td>$10.00</td>
</tr>
<tr>
<td>ATC</td>
<td>Test Code</td>
<td>$125.00</td>
</tr>
<tr>
<td>BUL</td>
<td>General Bulletin</td>
<td></td>
</tr>
<tr>
<td>ESB</td>
<td>ES&amp;M Committee Bulletin</td>
<td></td>
</tr>
<tr>
<td>ESG</td>
<td>ES&amp;M Committee Guideline</td>
<td></td>
</tr>
<tr>
<td>PTB</td>
<td>P&amp;T Committee Bulletin</td>
<td></td>
</tr>
<tr>
<td>WTG</td>
<td>Water Treating Committee Bulletin</td>
<td></td>
</tr>
</tbody>
</table>

CTI Code Tower Standard Specifications

**STD-103** ..........Redwood Lumber Specifications ......$10.00

CTI Grades of Redwood Lumber; allowable grades and grading rules for redwood used in industrial towers and Framework Design Data: allowable design stresses (wet operating weight) nominal and dressed dimensions, wind loading and weight calculations. 

Reviewed October 2019

**ATC-105** ............ Acceptance Test Code..........$125.00

The February 2019 version of ATC 105 incorporates extensive revisions to the code language and appendices that obsolete the previous document.

Part I - Test Procedure: methods and instrumentation for testing mechanical draft and natural draft cooling towers.

Part II - Evaluation of results: method for evaluation of the performance of mechanical draft cooling towers using both characteristic curves and performance curves; natural draft, natural draft-fan assisted cooling towers, and mechanical draft helper towers using performance curves. The results are expressed in terms of water cooling capacity.

Part III - Appendices: example evaluations of mechanical draft, natural draft, fan-assisted and helper cooling towers; various support information on requirements to perform and analyze tests and an uncertainty analysis example. CTI ToolKit Software is offered for sale separately to aid with test data analysis. 

Reviewed February 2019

**ATC-105 DS** .......... Acceptance Test Code.........$15.00

for Dry Fluid Coolers

This code covers the determination of the thermal capability of mechanical draft dry fluid coolers of both the forced and induced draft type. 

July 2018

**ATC-105S** .......... Acceptance Test Code..........$25.00

for Closed Circuit Cooling Towers

This code is similar to the open circuit tower in both form and function except for the fluid circuits. 

Reviewed July 2011

**ATC-106** .......... Acceptance Test Code..........$25.00

for Mechanical Draft Evaporative Vapor Condensers

This code specifies the procedures, apparatus, and instrumentation to be used for testing and evaluating the performance of evaporatively cooled, mechanical draft, vapor condensers. 

Reviewed July 2011

**ATC-107** ...... Test Code for Aircooled Condensers....$25.00

This document details the measured test parameters, instrumentation, test measurements and data reduction procedure required for determination of the thermal capability of a dry, air-cooled steam condenser (ACC). 

July 2011

**BUL-109** ............ Nomenclature for Industrial ........N/C

Water Cooling Towers

Recommended terms and definitions for use in describing tower components, designs and performance; includes abbreviations and letter symbols. 

Revised July 2015

**PTB-110** ............ Recirculation .....................$8.00

This is a summary of 7 years field study, and gives a procedure to determine maximum recirculation to be expected for any given operating condition; also recommendations for tower orientation to minimize recirculation. 

June 1977

**STD-111** .......... Gear Speed Reducers.............$10.00

This standard sets forth rating practice and operating considerations for gear speed reducers used with propeller type fans on industrial water cooling towers. 

Reviewed February 2018

**STD-112** .......... Pressure Preservative Treatment ....$15.00

of Dimensional Lumber

This standard sets forth the minimum retentions and penetrations to be obtained, and the physical condition of the lumber when pressure treating industrial water-cooling tower lumber. 

Revised October 2019

**STD-114** .......... Design of Cooling Towers with ....$10.00

Douglas Fir Lumber

Grades of Douglas Fir Lumber; recommended stress and non-framework grades and grading rules in application of WCLA grades and Design Data: allowable design stresses (wet operating weight), minimum requirements for non-framework members; nominal and dressed dimensions, wind loading and weight calculations. 

Reviewed October 2014

**ESB-117** ............ Recommendations for Maximum......$10.00

Life of Cooling Tower Lumber

Summary of results, Cooling Tower Institute field study on wood maintenance. Includes recommendations for water and lumber treatment. 

Reviewed April 2018

**STD-119** .......... Timber Connection Specification ....$10.00

This standard sets forth in detail the recommended material and manufacturing limitations, design requirements and allowable loads for commonly used timber fasteners employed in the construction of industrial cooling towers. 

Reviewed October 2014

**ESG-120** .......... Lightning Protection System Guideline . $10.00

This guideline sets forth recommended design criteria, components, and the specifications for traditional lightning protection systems installed on water-cooling towers. 

Reviewed May 2017

**ESG-121** .......... Construction Safety and Health.......$10.00

Guidelines

The purpose of this document is to serve as a safety and health guideline for various cooling tower procedures that are routinely performed on job sites. The information provided is based on OSHA federal requirements. 

October 2009

**WTG-122** .......Guideline: Side Stream Filtration as an..$10.00

Aid to Cooling Tower Performance

The purpose of this guideline is to outline benefits to the operation of evaporative condensers and cooling towers, their components, and to the equipment and systems they support utilizing the most common sediment side stream filtration technologies. 

February 2012

**ESG-123**...Recommended Guidelines for Concrete...$15.00

Restoration and Repairs to Natural and Mechanical Draft Cooling Towers

Prior to initiating reinforced concrete repairs at a Cooling Tower, it’s important to understand the deterioration mechanisms operating and how best to mitigate the damaging effects, before performing repairs and placing them into service. 

July 2019
STD-124............FRP Fan Stack Material............$15.00
This specification covers the material of construction, workmanship, physical properties and methods of testing fiberglass reinforced plastic panels used in the construction of cooling tower fan stacks. July 2013

ATC-128............Code for Measurement of Sound........$25.00
From Water Cooling Towers
This code applies to mechanical and natural draft towers. Test and measurement procedures, operating conditions and instrumentation are specified. Revised November 2019

WTG-130A..........Guidelines for Evaluation of..........$10.00
Cooling System Corrosion Control
This document discusses some of the methods associated with practical control of corrosion in cooling systems. January 2019

WTG-130C..........Methods for Cooling Water..........$15.00
System Microbial Monitoring
This document will provide a review of typical and commonly available methods and techniques for microbial monitoring in cooling water systems, along with their advantages, disadvantages and limitations. January 2019

STD-131............Fiberglass-Reinforced Plastic Panels ...$10.00
This standard sets forth specifications, grading rules, grades and species design criteria for cooling tower components constructed of plywood. Reviewed October 2014

PTG-135..........Guidelines for Thermal Upgrading of .......$8.00
Mechanical Draft Cooling Towers
The purpose of this document is to provide guidelines to assist the user in thermal upgrading, repair and rebuilding of mechanical draft cooling towers. Revised March 1998

STD-136..........Thermoplastic Materials Used for ..........$10.00
Film Fill, Splash Fill, Louvers and Drift Eliminators
This specification covers the classification of rigid polyvinyl chloride (PVC); the physical properties, burning properties and recommended testing procedures employed to determine the defined values, whether processed from virgin or reground materials. Revised June 2010

STD-137..........Fiberglass Pultruded Structural.........$20.00
Products for Use in Cooling Towers
This specification offers recommendations for classification, materials of construction, tolerances, defects, workmanship, inspection, physical, mechanical and design properties of glass fiber-reinforced pultruded structural shapes intended for use as construction items in cooling tower applications. Reviewed August 2017

ESG-138..........Recommended Procedures .............$10.00
Long Term Storage
Procedures recommended for the long-term storage of industrial scale cooling towers. In general, long-term storage is for an extended period of more than one year, but these recommendations can also be modified for seasonal storage. The techniques are divided between Mechanical Equipment and Wood Structure. These two groups of components require the most attention because they will deteriorate rapidly if preventive measures are not taken. Revised October 2014

WTB-139..........Suggested Ozone Reading List ............$8.00
WTB-139.1
The CTI Water Treatment Committee has prepared the attached reading list on the use of ozone in cooling water systems. This suggested list of reading materials was developed to assist in the dissemination of information on the use of ozone in cooling water systems and in no way represents an endorsement by CTI on the use of ozone. This list will periodically be updated as new contributions to the literature are made on this topic. April 1992 / July 1994

ATC-140..........Isokinetic Drift Measurement Test Code $60.00
For Water Cooling Towers
The purpose of this Code is to describe instrumentation and procedures for the testing and evaluation of drift from water-cooling towers. Revised July 2011

WTG-141........Application of Oxidizing Biocides........$25.00
This document will cover the use and application of the four major oxidizing biocides used in treating cooling waters: chlorine, bromine, chlorine dioxide, and ozone. The document will help end users and all personnel involved in treating cooling systems to better understand the chemistry, the application methods and the safety and environmental issues concerning oxidizing biocides. July 2016

WTG-142..........Treatment of Galvanized..............$10.00
Cooling Tower to Prevent White Rust
The purpose of this document is to provide steps in preventing “white rust” through the application of appropriate water treatment programs. May 2012

PTG-143..........Recommended Practice for ..........$10.00
Airflow Testing of Cooling Towers
This document helps in determining the purposes for anemometer and/or pitot tube testing in cooling towers. June 1994

ESG-144..........CTI Fastener Material Guidelines.........$8.00
Sets forth guidelines for selecting fasteners and identifies and specifies materials typically used in cooling tower fasteners. Revised July 2017

BUL-145........International System of Units (SI)........$10.00
A practical medium of exchange for all basic data of interest to manufacturers, suppliers, and users of cooling towers. Reviewed July 2011

STD-146..........Standard for Liquid Flow Measurement...$16.00
Methods for cooling tower liquid flow measurement. Sept 2008

WTB-147..........Water Reuse Paper of Interest ............$8.00
To Cooling Tower Users
This is a bibliography of published and presented papers on the general subject of water reuse in cooling tower systems. August 1997

WTB-148............Legionellosis..................N/C
CTI Position Statement on the disease known as the Legionnaires’ Disease, caused by the bacterium Legionella pneumophila. July 2008

STD-149..........Corrosion Testing Procedures..........$10.00
A code to develop standardized test procedures and evaluation techniques also designed to provide a uniform method to compare relative water treatment program performance in a cooling water system. October 2000

ATC-150..........Acceptance Test Procedure for ......$25.00
Wet-Dry Plume Abatement
This code covers the determination of the effluent air or plume characteristics of wet-dry cooling towers, designed for plume abatement. Revised July 2011

ESG-151..........Variable Frequency Drive .............$10.00
Application Guidelines for Cooling Towers
This standard covers the guidelines for operation of cooling towers at variable speeds. Revised May 2013

ESG-152... Structural Design of FRP Components.....$15.00
This guideline provides minimum design standards and cautionary recommendations to designers of FRP structural cooling towers. Revised May 2013

ESG-153...Recommended Guidelines for Portland ...$10.00
Cement Concrete for Mechanical Draft Cooling Towers
This guideline offers recommendations for the use of Portland cement concrete in the use of mechanical draft cooling towers. May 2019

STD-154.........Cooling Tower Filament Wound .........$10.00
Fiberglass Piping Systems
The information within this standard is for the design, manufacturing, installation and testing of FRP piping to be used in Cooling Tower applications. Revised July 2017
The purpose of this document is to provide general guidelines to plant owners and operators for water conservation through internal plant cooling water reuse. July 2008

This bulletin covers test preparation for an official water cooling tower thermal performance test, plume abatement test or drift emissions test. Revised February 2014

This guideline covers the repair of wood cooling towers using replacement pultruded fiberglass structural members. April 2018

This document’s objective is to provide Owners, Designers, and Operators of Mechanical and Natural Draft Cooling Towers with information related to corrosion of these critical structures. January 2019

The standard for vibration limits in water cooling towers provides cooling tower owners and manufacturers a specification for the acceptable mechanical vibration levels in new cooling towers. April 2015

This standard establishes the minimum recommended rating practice and operating considerations for helical gear speed reducers, of parallel shaft design, used with propeller type fans on air cooled condensers. August 2017

This Standard sets forth a program whereby the Cooling Tower Institute will certify that all models of a line of evaporative heat rejection equipment offered for sale by a specific Manufacturer will perform thermally in accordance with the Manufacturer’s published ratings, as limited in Paragraph 5.3. Revised February 2019

Operation Manual to guide program participants in complying with the provisions of the latest edition of CTI Standard 201RS. Revised February 2019

This Standard sets forth a program whereby manufacturers of custom cooling towers voluntarily allow the results of their CLTTA tests to be published under the requirements of this program. Revised March 2019

This Standard covers the design, fabrication and inspection of crossflow and counterflow mechanical draft cooling towers. April 2019

(Prices do not include postage and handling.)
**Software**

**ToolKit Software V3.1**
A suite of useful software applications for anyone responsible for the performance of evaporative cooling towers. Includes the Demand Curve Worksheet, Air Properties Calculator and Mechanical Draft Performance evaluator. Software shipped via Flash Drive.

**Single User License (Member)** .................................. $395.00

*Prices do not include postage and handling.*

---

**Research Papers**

RSP-1 ................................................................. $20.00

*Prices do not include postage and handling.*

---

**CTI Journal**

The *CTI Journal* is the first technical journal devoted solely to the subject of cooling towers and their operations. The *CTI Journal* is of current interest to Institute members and other professionals responsible for the construction specifications, testing, maintenance and operation of cooling towers.

The *CTI Journal* is published each year in January and June. Complimentary subscriptions are mailed to individuals in the United States. Library subscriptions are $45/year. Subscriptions mailed to individuals outside the United States are $45/per year.

---

**CTI Manual**

The purpose of the CTI Manual is to bring together into a common place, comprehensive information pertaining to cooling towers and other types of equipment that reject heat to the atmosphere. The Manual has been developed in the form of individual chapters, each of which stands on its own merit, and includes a list of references and a bibliography.

Chapters now available:

**Chapter 1 - Cooling Tower Operations**
(March 2010) ...................................................... $10.00

**Chapter 2 - Introduction to CTI Thermal Design**
(March 1998) .................................................. $8.00

**Chapter 3 - Performance Variables of Cooling Towers**
(March 1998) .................................................. $15.00

**Chapter 4 - Recommendations for Winter**
(September 2018) .............................................. $15.00

**Chapter 6 - Water Chemistry and Treatments**
(July 2005) .................................................. $25.00

**Chapter 9 - Materials of Construction for Cooling Towers**
(Revised May 2017) ........................................... $15.00

**Chapter 10 - Mechanical Components for Cooling Towers**
(March 2011) .................................................. $15.00

**Chapter 11 - Electrical Components for Cooling Towers**
(January 1984) .................................................. $8.00

**Chapter 12 - Field-Erected Cooling Tower Fire Protection**
(Reviewed April 2018) ........................................ $10.00

**Chapter 13 - Inspection of Cooling Towers**
(Revised January 2013) ....................................... $20.00

Complete manual .................................................. $138.00
Historical Documents

The following documents have been removed from the CTI Publication Manual and/or the CTI Manual either because they are considered no longer feasible, considered inaccurate per current technology, or not permitted due to environmental concerns. However, the documents do contain valuable information for the industry as historical documents. These documents are only available in .pdf format.

ESB-104 ....................................................... Wood Maintenance ................................................................. $12.00
This is a report of 10 years field study of operating towers and eight preservative treatments. Discuss types of deterioration and means of prevention through water treating and preservative treatments. Tables and graphs of field study data, photographs of typical types of deterioration. Reviewed October 2014

PTG-116 ....................................................... Recommended Recirculation Allowances ............................................................. $8.00
Application of average recirculation to wet bulb temperature to obtain design inlet wet bulb temperature corrected for recirculation. April 1959

Bid Form
PTG-118 ....................................................... SF/FA (Factory Assembled) ............................................................. $5.00
PTG-118 ....................................................... SF/FE (Field Erected) ................................................................. $5.00
The inquiry and Bid Form is used to show minimum information that is necessary to include inquiries and to show all pertinent data on the requested bids. Cooling tower purchasers use this form with their inquiries by filling out all the information marked with an asterisk (*). Manufacturers then return their bids on this form. This assures the purchaser of receiving adequate information on all bids. It also facilitates the comparison of bids by furnishing the same information in the same place on all bids. Further, it establishes uniform units for the various data. July 1993

WTG-129 ....................................................... Handling Water Treatment Chemicals Safely ......................................................... $8.00
Laminated poster for use where chemicals are handled. General and emergency procedures. December 1996

WTG-132 ....................................................... Supervisory Guide Handling Water Treatment Chemicals ............................................. $8.00
A guide for first-line supervisors responsible for cooling tower treatment operations. October 1984

STD-201 ....................................................... Standard for Thermal Performance Certification ........................................ $40.00
of Evaporative Heat Rejection Equipment
This Standard sets forth a program whereby the Cooling Tower Institute will certify that all models of a line of evaporative heat rejection equipment offered for sale by a specific Manufacturer will perform thermally in accordance with the Manufacturer’s published ratings, as limited in Paragraph 4.5. Revised April 2011

Chapter 5 - ............................................... Field Test Handbook (April 1998) ...................................................... $30.00
The purpose of this Chapter is to list convenient formulas, conversions factors, tables, etc. that will be helpful in conducting cooling tower performance tests and evaluating the resulting test data. April 1998

Chapter 8 - ................. Environmental Aspects of Cooling System Operation (June 1981) ....................... $8.00