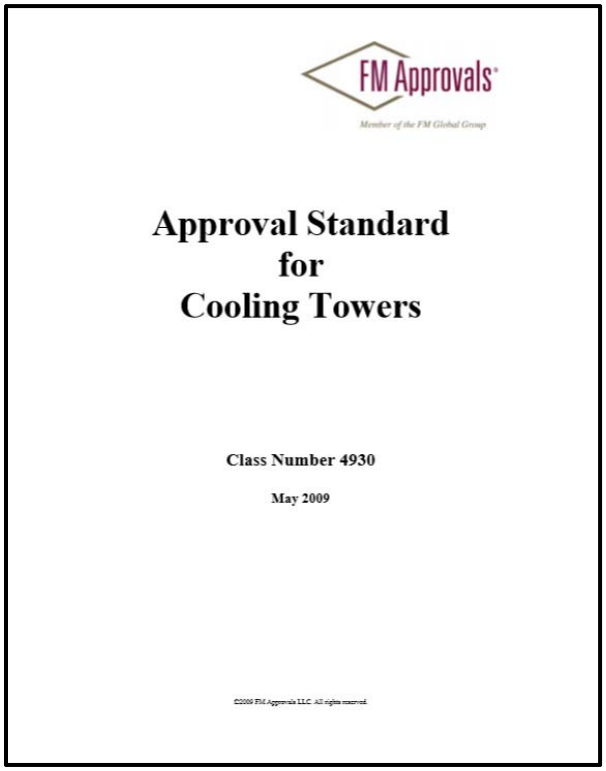
Evapco Engineering Flash

FM Global: *Approval Standard for Cooling Towers*, Review of Historic & Modern Era FM Approval

FM Approved field erected counterflow fiberglass cooling towers have historically been preferred or required by customers insured by FM Global. More recently, FM Approved towers are being requested and considered by a growing number of customers in all markets. Many customers, including those not insured by FM Global, recognize the critical nature of their application and the benefits of third-party certified loss prevention products including evaporative water cooling towers.

An FM Approved cooling tower is one that has satisfied the historic testing protocol or one that has satisfied the requirements and acceptance criteria of the Modern *Approval Standard for Cooling Towers* (Class 4930). There is a significant distinction between these two types of FM Approved products.



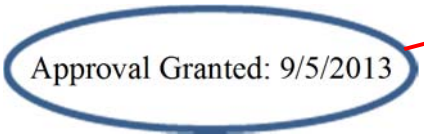
Modern Era FM Approval Requirements:

The modern era testing process is much more comprehensive than the historic era process with both the testing and acceptance criteria being explicitly defined by publication of the first ever comprehensive *Approval Standard for Cooling Towers* dated May 2009. The Standard became effective May 31, 2010, marking the beginning of the modern era.

Manufacturers seeking FM Approval after the effective date are required to comply with the entire Standard. Manufacturers whose products were previously FM Approved during the historic testing protocol period before May 31, 2010 are required to have their products certified to the new Standard to maintain their "Approved" status. Otherwise, FM Approval based on the historic protocol is forfeited. Previously "Approved" products are granted a full-scale fire test exemption, however, the product must pass all other requirements of the Standard without design changes that would impact the fire test result.

How do you know if a product is FM Approved and the basis of its Approval?

Once a cooling tower product is FM Approved a Certificate of Compliance from FM Approvals is issued to the manufacturer. If the Approval granted date on the Certificate of Compliance occurs before May 31, 2010 the product was FM Approved using the historic testing protocol. If the Approval granted date occurs after May 31, 2010 (effective date of the Standard) the product is FM Approved per the Standard.



FM Approved towers are also listed in the Approval Guide online at http://www.approvalguide.com. Fiberglass field erected towers are found under the multi-cell and single-cell listings in the Building Materials section.

Refer to Appendix A on the following page for a detailed comparison of the Historic Era vs. Modern Era FM Approval standards.

For more information contact your local EvapTech Sales Representative!

Best Regards,

Don Dobney
Director Commercial Sales
EvapTech, Inc.

Appendix A:

Let's look at a comparison of Historical versus Modern Era FM Approval Testing Requirements:

	Historic Era	**Modern Era (new *Standard*)**
Time Period	Before May 31, 2010	After May 31, 2010
Full Scale Burn Test	Required	Required (Previously Approved Products are Exempt)
Exam of Combustible Materials	Required	Required
Quality Control Audits	Required	Required
Flammability Testing	Required	Required
Windborne Debris Testing	Not Required	Required (New)
Static & Cyclic Pressure Testing	Not Required	Required (New)
Live Load Analysis (Seismic)	Not Required	Required (New)

Then compare the Historic protocol and new *Standard* Combustibility Acceptance Criteria:

	Historic Era	**Modern Era (new *Standard*)**
Criteria #1 - Containment	Contain damage from fire to cell of origin	Contain damage from fire to cell of origin; fire may not spread over, under, around or through the walls and partitions to adjacent cells
Criteria #2 – Required Capacity Post Fire	None	Remaining cell (single-cell classification) or cells (multi-cell classification) must provide at least 75% design capacity after fire (75% Rule)
Thermal Redundancy (Interpreted as Over-Sized or Extra Cells)	Extra cell per FM Property Loss Prevention Data Sheets (N+1 Rule)	To meet post fire minimum thermal capacity the number and size of the cells depends on the Approval classification: **Multi-Cell Classification Approved Products:** • If the design requires 1 cell then 2 cells @ 75% design capacity cell must be provided • If the design requires 2 cells then 2 cells of at least 75% design capacity per cell must be provided • If the design requires 3 cells than 3 cells of at least 37.5% design capacity per cell must be provided (or N+1) • If the design requires 4 cells or more there is no redundancy requirement **Single-Cell Classification Approved Products (Can also be applied to multi-cell towers):** • No redundancy required