



VMC GROUP
THE POWER OF TOGETHER™



CERTIFICATE OF COMPLIANCE

SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS



Certification No.

VMA-51794-01C (Revision 5)

Expiration Date: 8/31/2024

Certification Parameters:

The nonstructural products (mechanical and/or electrical components) listed on this certificate are CERTIFIED¹ FOR SEISMIC APPLICATIONS in accordance with the following building code² releases.

IBC 2018, 2015, 2012, 2009

The following model designations, options, and accessories are included in this certification. Reference report number VMA-51794-01 as issued by VMC Group for a complete list of certified models, included accessories/options, and certified installation methods.

**Baltimore Aircoil Company; Cooling Towers
Series 3000 Cooling Towers; 171-1147 Tons**

The above referenced equipment is APPROVED for seismic application when properly installed³, used as intended, and contains a Seismic Certification Label referencing this Certificate of Compliance⁴. As limited by the tabulated values, below grade, grade, and roof-level installations, installations in essential facilities, for life safety applications, and/or of equipment containing hazardous contents are permitted and included in this certification with an Equipment Importance Factor assigned as $I_p=1.5$. The equipment is qualified by code-compliant comparative analysis and successful seismic shake table testing at the nationally recognized Dynamic Certification Laboratories, University of California Berkeley Pacific Earthquake Engineering Research Center, and University at Buffalo's Structural Engineering and Earthquake Simulation Laboratory under the witness of the ISO Accredited Product Certification Agency, the VMC Group.

Certified Seismic Design Levels ⁸			
Certified IBC	Importance $I_p \leq 1.5$ Soil Classes A-E Risk Categories I-IV Design Categories A-F	z/h ≤ 1.0	z/h = 0.0
		$S_{DS} \leq 0.668 \text{ g}$	$S_{DS} \leq 1.068 \text{ g}$

The qualified seismic design level stated is the lowest for all series this certificate covers. For more information, see the certified product tables on page 2.

Certified Seismic Installation Methods ⁹
Rigid Mounting From Unit Base To Rigid Structure

HEADQUARTERS
113 Main Street
Bloomingdale, NJ 07403
Phone: 973.838.1780
Toll Free: 800.569.8423
Fax: 973.492.8430

CALIFORNIA
180 Promenade Circle
Suite 300
Sacramento, CA 95834
Phone: 916.634.7771

TEXAS
11930 Brittmoore Park Drive
Houston, TX 77041
Phone: 713.466.0003
Fax: 713.466.1355

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Certified Product Table:

Unit	Model No.	Box Size (ft x ft x in)	Max Height (in)	Max Operating Weight(lbs)	Nominal Cooling Rating (Tons)	SDS @ z/h = 0.0	SDS @ z/h = 1.0
Single	[XE]S3E-8518-05 [G,H,J,K],L,M	18x8.5x80	104	16,033	171-322	1.068	0.668
	[XE]S3E-8518-06 [G,H,J,K],L,M,N,O	18x8.5x96	120	16,976	194-406		
	[XE]S3E-8518-07 [G,H,J,K,L],M,N,O,P	18x8.5x112	136	19,465	216-484		
	[XE]S3E-1020-06 [G,H,J,K,L],M,N,O	20x10x96	120	20,302	206-436		
	[XE]S3E-1020-07 [G,H,J,K,L],M,N,O,P	20x10x112	136	21,552	228-530		
	[XE]S3E-1222-06 [H,J,K,L],M,N,O	21.5x12x96	120	25,003	279-500		
	[XE]S3E-1222-07 [J,K,L,M],N,O,P,Q,R	21.5x12x112	136	27,431	354-690		
Double	[XE]S3E-1424-07 [J,K,L,M,N],O,P,Q,R	24x14x112		36,341	396-772	1.093	0.683
	[XE]S3E-1222-10 [K,L,M,N,O],P,Q,R,S	21.5x12x160	186	36,277	491-916		
	[XE]S3E-1222-12 [K,L,M,N,O],P,Q,R,S	21.5x12x192	218	39,222	528-981		
	[XE]S3E-1222-13 [K,L,M,N,O],P,Q,R,S	21.5x12x208	234		545-1013		
	[XE]S3E-1222-14 [L,M,N,O],P,Q,R,S,T	21.5x12x224	250	41,745	645-1147		

Note: Brackets [] indicate applicable model numbers for XES3E models. Model numbers outside of brackets apply to S3E models.

Group	Type	S _{DS} (z/h=0)	S _{DS} (z/h=1)	A _{Flex-H}	A _{Rig-H}	A _{Flex-V}	A _{Rig-V}	F _p /W _p
Seismic	AC156	1.068	0.668	1.068	0.802	0.712	0.285	1.001

This certification includes cooling tower modules as detailed in the above charts. The cooling tower configuration and options shall be a catalogue design and factory supplied. The unit shall be installed and attached to the building structure per the manufacturer's supplied seismic installation instructions. For a list of certified configurations and options please directly contact the manufacturer. This certification excludes all non-factory supplied accessories, all connections for electrical, fuel, heating or cooling fluid, or other pipe/conduit connections and all non-catalogued, standard options and/or configurations not detailed in the above charts. Flexibility in the connections must be maintained as to not transmit load into the equipment. Design specials are outside the scope of this certification.



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Issue Date: Friday, May 25, 2018
Revision Date: Monday, May 6, 2024
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Notes & Comments:

1. All equipment listed herein successfully passed the seismic acceptance criteria for shake testing non-structural components and systems as set forth in the ICC AC-156. The Test Response Spectrum (TRS) enveloped the Required Response Spectrum (RRS) for all units tested. The tested units were representative sample(s) of a contingent of models and all remained captive and structurally sound after the seismic shake simulation. The units also remained functionally operational after the simulation testing as functional testing was completed by the equipment manufacturer before and after the seismic simulations. Although a seismic qualified unit inherently contains some wind resisting capacity, that capacity is undetermined and is excluded from this certification. Snow/Ice loads have been neglected and thus limit the unit to be installed both indoors (covered by an independent protective structure) and out of doors (exposed to accumulating snow/ice) for ground snow loads no greater than 30 psf for all applications.
2. The following building codes are addressed under this certification:
 - IBC 2018 referencing ASCE7-16 and ICC-ES AC-156
 - IBC 2015 referencing ASCE7-10 and ICC-ES AC-156
 - IBC 2012 referencing ASCE7-10 and ICC-ES AC-156
 - IBC 2009 referencing ASCE7-05 and ICC-ES AC-156
 - Italian Eurocode 8 Annex Published 2012 (Building Code Annex)
3. Refer to the manufacturer supplied installation drawings for anchor requirements and mounting considerations for seismic applications. Required anchor locations, size, style, and load capacities (tension and shear) may be specified on the installation drawings or specified by a 3rd party. Mounting requirement details such as anchor brand, type, embedment depth, edge spacing, anchor-to-anchor spacing, concrete strength, special inspection, wall design, and attachment to non-building structures must be outlined and approved by the Engineer of Record for the project or building. Structural walls, structural floors, and housekeeping pads must also be seismically designed and approved by the project or building Structural Engineer of Record to withstand the seismic anchor loads as defined on the installation drawings. The installing contractor is responsible for ensuring the proper installation of all anchors and mounting hardware.
4. For this certificate and certification to remain valid, this certificate must correspond to the "Seismic Certification Label" found affixed to the unit by the factory. The label ensures the manufacturer built the unit in conformance to the IBC seismic design criteria set forth by the Certified Seismic Qualification Agency, the VMC Group, and meets the seismic design levels claimed by this certificate.
5. Mechanical, Electrical, and Plumbing connections to the equipment must be flexibly attached as to not transfer load through the connection. The structural integrity of any conduit, cable trays, piping, ductwork and/or flexible connections is the responsibility of others. This certification makes no statements of compliance in regards to NEMA, IP, UL, CSA, or other relevant standards after a seismic event. For compliance to other relevant standards, please contact the manufacturer.
6. This certificate applies to units manufactured at:
 - 1162 Holly Hill Rd, Milford, DE 19963
 - 15341 Road 28 1/2, Madera, CA 93638
7. This certification follows the VMC Group's ISO-17065 Scheme.
8. The qualified seismic design level stated is the lowest for all series this certificate covers. For more information, see the certified product tables on page 2.
9. The certified seismic installation methods states are a summary for all series this certificate covers, for more detailed information on the certified seismic installation methods, see the certified product tables.

John P. Giuliano, PE
President, VMC Group



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