



CERTIFICATE OF COMPLIANCE

SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS



Certification No.

VMA-54027-01C (Revision 1)

Expiration Date: 7/31/2024

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-54027-01 as issued by The VMC Group for a complete list of certified models, included accessories/options, and certified installation methods.

Carel USA; Humidification System

ultimateSAM and heaterSteam; 1914 lbs/hr (Grids Max Rating), 80 kg/hr (Boilers Max Rating)

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 successful seismic shake table testing at the nationally recognized Dynamic Certification Laboratories under the witness of the ISO Accredited Product Certification Agency, the VMC Group.

Certified Seismic Design Levels			
Certified IBC	Importance $I_p \leq 1.5$ Soil Classes A-E Risk Categories I-IV Design Categories A-F	$z/h \leq 1.0$	$z/h = 0.0$
		$S_{DS} \leq 2.000 \text{ g}$	$S_{DS} \leq 2.500 \text{ g}$

Certified Seismic Installation Methods ⁸	
Suspended By Rods And Using Cable Sway Bracing	Directly To Structural Wall

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Certified Product Table:

Equipment Type	Base Model Number	Max Rating	Max Width [in.]	Max Length [in.]	Max Height [in.]	Max Weight [lbs.]	Mounting Configuration
Boilers	UR002 - UR013	13 kg/hr	14	11	28	77	Directly to Structural Wall
	UR020 - UR040	40 kg/hr	27	18	35	263	
	UR053 - UR080	80 kg/hr	35			360	
Steam Distribution Grids	SAB	374 lb/hr	60	5	60	115	Suspended (in duct) by Rods and Using Cable Sway Bracing
		638 lb/hr	96		96	287	Directly to Floor and Ceiling of Rigid Base Mounted AHU
	SAT	1122 lb/hr	60		60	122	Suspended (in duct) by Rods and Using Cable Sway Bracing
		1914 lb/hr	96		96	291	Directly to Floor and Ceiling of Rigid Base Mounted AHU

Note: Contact the manufacturer for a detailed list of full model numbers of certified units and required seismic mounting kits.

Test Standard	Equipment 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	Mounting Configuration
AC156	Boilers	2.50	2.00	3.20	2.40	1.68	0.68	1.44	Directly to Wall
	Steam Distribution Grids							1.13	Suspended (in duct) by Rods and Using Cable Sway Bracing
								1.44	Directly to Floor and Ceiling of Rigid Base Mounted AHU

This certification includes the boilers, distribution grids, and included factory supplied options. This certification only covers accessories and options directly mounted to the humidification systems. The humidification systems and applicable options shall be installed per the manufacturer 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 and options, including but not limited to isolation/restraint devices, other electrical/mechanical components and all connections for electrical, fuel, heating or cooling fluid, or other pipe/conduit connections and 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.



VMA-54027-01C (Revision 1)
Issue Date: Tuesday, July 6, 2021
Revision Date: Wednesday, November 16, 2022
Expiration Date: Wednesday, July 31, 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
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 does not guarantee the equipment will remain compliant to NEMA, IP, UL, or CSA standards after a seismic event.
6. This certificate applies to units manufactured at:
 - 385 South Oak Street, Manheim, PA 17545
7. This certification follows the VMC Group's ISO-17065 Scheme.
8. 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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