CERTIFICATE OF COMPLIANCE
SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS

Certification No.

VMA-54642-01C (Revision 0)

Expiration Date: 3/31/2029

Certification Parameters:

The nonstructural products (mechanical and/or electrical components) listed on this certificate are CERTIFIED[1] FOR SEISMIC APPLICATIONS in accordance with the following building code[2] releases.

IBC 2024, 2021

The following model designations, options, and accessories are included in this certification. Reference report number VMA-54642-01 as issued by VMC Group for a complete list of certified models, included accessories/options, and certified installation methods.

Greenheck Fan Corporation; Exhaust Fans
G, GB, CUE, CUBE; 060 - 540

The above referenced equipment is **APPROVED** for seismic application when properly installed[3], used as intended, and contains a Seismic Certification Label referencing this Certificate of Compliance[4]. 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 ANCO Laboratory, Environmental Testing Laboratories, and Dynamic Certification Laboratories under the review 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 ≤ 1.0	z/h = 0.0
		$S_{DS} \leq 2.000$ g	$S_{DS} \leq 2.280$ g

Certified Seismic Installation Methods[8]	
Directly To Floor	Directly To Rigid Curb/Rail
Directly To Structural Wall	

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Certified Product Table:

Model	Fan Sizes	Max Length [in]	Max Width [in]	Max[1] Height [in]	Max[1] Weight [lb]	Mounting[2] Configuration
G	060, 070, 080, 090, 095, 097, 098, 099, 100, 100HP, 120	25	25	76	174	Rigid Base Mounted
	130, 140, 140HP, 160, 160HP, 180, 200, 200HP	36	36	82	229	
	240, 300	49	49	90	518	
GB	097, 098, 099, 100, 100HP, 120, 130, 140, 140HP, 160, 160HP	29	29	70	170	
	180, 180HP, 200, 200HP, 220, 220HP, 240, 240HP	43	43	82	324	
	260, 300, 300HP, 330, 360, 360HP	59	59	92	649	
	420, 480, 500, 540	86	86	99	1,062	
CUE	060, 070, 080, 090, 095, 099, 100, 100HP, 120, 130	25	25	69	156	
	140, 140HP, 160, 160HP, 160XP, 180, 180HP, 200, 200HP	38	38	79	303	
	240, 240HP, 300, 300HP	50	50	85	560	
CUBE	098, 099, 100, 100HP, 120, 130, 140, 140HP, 160, 160HP, 160XP	29	29	70	191	
	180, 180HP, 200, 200HP, 220, 220HP, 240, 240HP, 240XP	43	43	81	337	
	300, 300HP, 300XP, 360, 360HP, 360XP	59	59	93	652	
	420, 480	76	76	95	790	
CUE	060, 070, 080, 090, 095, 099, 100, 100HP,120, 130	25	25	39	99	Rigid Wall Mounted
	140, 140HP, 160, 160HP, 160XP, 180, 180HP, 200, 200HP	37	37	49	204	
CUBE	099, 100, 100HP, 120, 130, 140, 140HP, 160, 160HP, 160XP	29	29	39	127	
	180, 180HP, 200, 200HP, 220, 220HP, 240, 240HP, 240XP	43	43	48	325	
	300, 300HP, 300XP	50	50	51	355	

1. Max curb height and weight included.
2. Max curb height of 42 inches for base mounted units; Max curb height of 12 inches beyond the wall face for wall mounted units.

Seismic	S_{DS} (z/h=0)	S_{DS} (z/h=1)	A_{Flex-H}	A_{Rig-H}	A_{Flex-V}	A_{Rig-V}	(ASCE7-16) Max F_p/W_p	(ASCE7-22) Max F_p/W_p
AC156	2.28	2.00	3.20	2.40	1.52	0.61	4.50	5.47

This certification includes the exhaust fans and included factory supplied options. This certification only covers accessories and options directly mounted to the unit. The unit 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 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.

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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 2024 referencing ASCE7-22 and ICC-ES AC-156
   IBC 2021 referencing ASCE7-16 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 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:
   1111 Greenheck Fan Corporation Drive, Schofield, WI 54476

7. This certification follows the VMC Group's ISO-17065 Scheme.

8. The certified seismic installation methods stated are a summary for all product lines this certificate covers. For individual certified seismic installation methods, see the certified product tables.

John P. Giuliano, PE
President, VMC Group

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