



THE VMC GROUP

The Power of Together™



CERTIFICATE OF COMPLIANCE

SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS



Certification No.

VMA-51070-01C (REVISION 06)

Expiration Date: 01/31/2020

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 2012, 2015

The following model designations, options, and accessories are included in this certification. Reference report number **VMA-51070-01** as issued by The VMC Group for a complete list of certified models, included accessories/options, and certified installation methods.

**Cummins Power Generation, Inc.
Gas Generator Sets, C20-150N6 Series**

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 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	S _{DS} ≤ 2.500 g	
		z/h = 0.0	
Test Datum AC156	ISO 17025 Laboratory Pre/Post-Shake Functionality Tri-axial, 5% Damping SRS	Horizontal Design ⁵	$\frac{F_p}{W_p} = 0.4 S_{DS} I_p \frac{a_p}{R_p} \left(1 + 2 \frac{z}{h}\right) \leq 1.875$ g
		A _{RIG-H} ≤ 3.000 g	A _{RIG-V} ≤ 0.667 g
		ZPA _H ≤ 2.700 g	ZPA _V ≤ 0.600 g

Certified Seismic Installation Methods
Rigid mounting from unit base to rigid structure



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Certified Product Table:

Model	Max Rating [kW]	Max Dimensions [in]			Max Weight [lbs]
		Depth	Width	Height	
C20N6	20	82	34	46	1110
C22N6	22	82	34	46	1150
C25N6	25	82	34	46	1150
C30N6H	30	82	34	46	1120
C30N6	30	104	34	46	1300
C36N6H	36	104	34	46	1270
C36N6	36	104	34	46	1380
C40N6H	40	104	34	46	1420
C40N6	40	104	34	46	1400
C45N6H	45	104	34	46	1420
C45N6	45	136	40	58	2580
C50N6H	50	104	34	46	1420
C50N6	50	136	40	58	2600
C60N6H	60	104	34	46	1540
C60N6	60	136	40	58	2900
C70N6	70	136	40	58	2870
C80N6	80	136	40	58	3030
C100N6	100	136	40	58	3170
C125N6	125	160	40	72	3770
C150N6	150	160	40	72	4350

Note: "H" indicates high speed (3600RPM, as opposed to the standard 1800RPM)

Note: Dimensions and Weight include sound level 2 (SL2) enclosure baffle

This certification **includes** the open generator set and the enclosed generator set. The generator set and included options shall be a catalogue design and factory supplied. The generator set and applicable options shall be installed as attached to the building structure per the manufacturer supplied seismic installation instructions. This certification **excludes** all non-factory supplied accessories, including but not limited to mufflers, isolation/restraint devices, remote control panels, remote radiators, pumps and other electrical/mechanical components.



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Notes and 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 units cited in this certification 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 2015 – referencing ASCE7-10 and ICC AC-156
IBC 2012 – referencing ASCE7-10 and ICC 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 observing the installation detailed in the seismic installation drawings and 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:

Cummins Power Generation Inc., 1400 73rd Ave. NE, Minneapolis, MN 55432

John P. Giuliano, PE
President, The VMC Group

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