

CERTIFICATE OF COMPLIANCE

SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS



Certification No.

VMA-50974-01C (Revision 13)

Expiration Date: 8/31/2026

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 2021, 2018, 2015, 2012, 2009

The following model designations, options, and accessories are included in this certification. Reference report number VMA-50974-01 as issued by The VMC Group for a complete list of certified models, included accessories/options, and certified installation methods.

Rolls-Royce Solutions America Inc.; Diesel Gensets

**3R0096, 4R0113, 6R0113, 6R0150, 6R0225, 12V1600, 16V2000, 18V2000, 12V4000, 16V4000, 20V4000;
20 kW - 3250 kW**

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 Environmental Testing Laboratories, University of California Berkeley Pacific Earthquake Engineering Research Center, and 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 ≤ 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 | |
|---|---|
| Rigid Mounting From Unit Base To Rigid Structure | External Isolation Mounting From Unit Base To Rigid Structure |
| Rigid Mounting From Unit Base To Fuel Tank | External Isolation Mounting From Unit Base To Fuel Tank |

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Certified Product Table:

| Model | Max Rating [kW] | EPA Rating | Max Length [in] | Max Width [in] | Max Height [in] | Max Weight [lb] | Configuration Options |
|------------------------------|-----------------|------------|-----------------|----------------|-----------------|-----------------|--|
| mtu 3R0096: DS20 - DS34 | 30 | Tier 4 | 115 | 44 | 99 | 5,300 | Open Off Tank, Enclosed Off Tank, Open On Tank, Enclosed On Tank |
| mtu 4R0113: DS40 - DS125 | 125 | Tier 3 | 187 | 48 | 116 | 14,000 | |
| mtu 6R0113: DS150 - DS200 | 200 | | 270 | | 123 | 18,000 | |
| mtu 6R0150: DS230 - DS300 | 300 | Tier 3 / 4 | 320 | 60 | 140 | 28,500 | |
| mtu 6R0225: DS350, DS400 | 400 | | 296 | 90 | 147 | 36,093 | |
| mtu 12V1600: DS550 - DS900 | 900 | Tier 2 | 470 | 102 | 150 | 67,000 | |
| mtu 16V2000: DS1000 - DS1250 | 1250 | | 420 | 109 | 176 | 83,220 | |
| mtu 18V2000: DS1400, DS1250 | | | | 111 | 179 | 84,220 | |
| mtu 12V4000: DS1250 - DS2000 | 1750 | | 264 | 122 | 123 | 60,000 | Open Off Tank |
| mtu 16V4000: DS2000 - DS2500 | 2500 | | 302 | | 141 | 66,000 | |
| mtu 20V4000: DS2500 - DS3300 | 3250 | | 320 | 132 | 150 | 69,400 | |

Notes:

1) Contact manufacturer for further details regarding maximum dimensional limitations for configuration options of certified generator set models.

2) For equivalent kVA ratings, contact the manufacturer

| 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 | 2.50 | 2.00 | 3.20 | 2.40 | 1.68 | 0.68 | 4.50 |

This certification includes the open generator set and the enclosed generator set when installed with or without the sub-base tank. The generator set and included options shall be a catalogue design and factory supplied. The generator set and applicable options shall be installed and 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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 Expiration Date: August 31, 2026

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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 2021 referencing ASCE7-16 and ICC-ES AC-156
 - 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 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:
 - MTU Onsite Energy Corporation, 100 Power Drive, Mankato, MN 56001
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.



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