



SPECIAL SEISMIC CERTIFICATION OF NON-STRUCTURAL
COMPONENTS AND SYSTEMS

IBC CERTIFICATE OF COMPLIANCE

Dynamic Certification Laboratories has qualified the listed units as CERTIFIED for seismic applications in accordance with the applicable codes listed below. The basis of this certification is through testing of the active and energized components per AC156. The seismic values are obtained from the Maximum Considered Earthquake Short Period Spectral Response Acceleration, Sds. For additional information see DCL Report No. 77789-1302.

Approval for: Special Seismic Certification of Non-Structural Components and Systems

Manufacturer: Cummins Power Generation, 1400 73rd Ave NE, OF143, Minneapolis, MN 55432

Product Line: Diesel Gensets

Mounting Description: Rigid base mount

<i>Certified Units</i>												
Model	Power Rating	RPM	Max Weight (lbs)	INCLUDED COMPONENT TYPE							Sds (g), z/h=1	Unit
				Engine	Alternator		Radiator	Enclosure	Chassis / Skid	Control / Connection		
					Single Phase	Three Phase						
C60 D6	60 kw	1800	1812	4BTAA3.3-G7	CA125-P14	CA125-L14	Large, Charge Cooler	P2	P2	P2	2.00	UUT4a, b, c
C50 D6	50 kw	1800	1696	4BTAA3.3-G7	CA125-L14	CA125-J14	Large, Charge Cooler		P2	P2		interpolated
C40 D6	40 kw	1800	1514	4BT3.3-G5	CA125-G14	CA115-V14	Large		P2	P2		interpolated
C35 D6	35 kW	1800	1483	4BT3.3-G5	CA115-V14	CA115-S14	Large		P2	P2		interpolated
C30 D6	30 kw	1800	1404	4BT3.3-G5	CA115-R14	CA115-P14	Large		P2	P2		interpolated
C25 D6	25 kw	1800	1377	4BT3.3-G5	CA115-L14	CA115-L14	Large		P2	P2		UUT3a, b, c
C20 D6	20 kw	1800	1197	V2203 (4cyl)	CA115-L14	CA115-L14	Small	P1	P1	P1		UUT2a, b, c
C15 D6	15 kw	1800	1134	D1703 (3cyl)	CA115-L14	CA115-L14	Small	P1				interpolated
C10 D6	10 kw	1800	1032	D1703 (3cyl)	CA115-D14	CA115-D14	Small	P1				UUT1a, b, c

<i>Seismic Test and Certification Parameters</i>								
Applicable Codes	Unit	S _{DS}	z/h	I _p	Aflx-H	Arig-H	Aflx-V	Arig-V
2012 IBC, ASCE 7-10, 2013 CBC, 2012 ICC-ES AC156	UUT1a,b,c UUT2a,b,c UUT3a,b,c UUT4a,b,c	2.00	1.0	1.5	3.20	2.40	1.67	0.67

Notes:

1. Certification also complies with the seismic requirements of prior IBC editions.
2. The units are also certified for Sds 2.50 g, z/h=0.

Mounting Description:

UUT1a, UUT2a, UUT3a and UUT4a were base-mounted to the shake table interface frame using four 5/8-inch diameter Grade 8 bolts (two bolts per each long side).

UUT1b-c, UUT2b-c were base-mounted to their respective tanks using four 5/8-inch diameter Grade 8 bolts (two bolts per each long side). Each tank was mounted to the shake table interface frame using four 5/8-inch diameter Grade 8 bolts (two bolts per each long side).

UUT3b-c, UUT4b-c were base-mounted to their respective tanks using four 5/8-inch diameter Grade 8 bolts (two bolts per each long side). Each tank was mounted to the shake table interface frame using six 5/8-inch diameter Grade 8 bolts (three bolts per each long side).

The shake table interface frame was attached to the shake table with M12 threaded rod, spaced approximately 8-inches on-center. Photographs of the UUTs on the shake table are shown below:



Figure 1 - UUT1a



Figure 2 - UUT1b and UUT1c



Figure 3 - UUT2a



Figure 4 - UUT2b and UUT2c



Figure 5 - UUT3a



Figure 6 - UUT3b and UUT3c



Figure 7 - UUT4a



Figure 8 - UUT4b and UUT4c

Functionality

The units were operational before and after shaking, and were tested full of operating content. The structural integrity of the component attachment system and force-resisting systems was maintained.

Site and Project Requirements

It is the responsibility of the Structural Engineer of Record to:

1. Provide engineering for the anchorage and restraint of the unit
2. Validate Certification Design Parameters with actual site conditions
3. Provide engineering of all equipment support structures
4. Confirm component configuration

Certification Issued by: Dynamic Certification Laboratories

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