

13 March 2025

Systemair New Zealand
Ltd

Attention:

Liming Tian

Subject:

RE: Geniox 12 Outdoor Air Handling Unit Seismic Testing Summary

To whom it may concern,

Systemair New Zealand Ltd requested that Holmes Solutions undertake shake-table seismic testing to demonstrate compliance of their Geniox 12 Outdoor Air Handling Unit with New Zealand performance criteria for seismic actions, and to demonstrate that it can continue to operate following a design level earthquake.

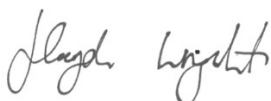
Currently there is no New Zealand Standard covering shake-table testing of engineering systems for seismic qualification. However, the building code cites New Zealand Standard 4219 – Seismic Performance of Engineering Systems in Buildings includes a means of compliance with the amenity (operational continuity) and life safety performance requirements of the building code. Specifically, commentary C2.4 refers the designer to the use of overseas standards, providing the design actions are not less than those determined in accordance with NZS 4219.

The testing protocol adopted for this project is generally in accordance with ICC-ES AC-156 (AC-156), with the exception that the generic International Building Code (IBC) required response spectra (which defines the level of shaking applied to the units during testing) are replaced by floor response spectra generated to meet the NZS 1170.5 upper bound design earthquake characteristics for parts and components (and thereby NZS 4219 section 4). The required response spectra for horizontal and vertical shake-table testing were generated by scaling the NZS 1170.5:2004 section 8 floor response spectra, to meet a peak horizontal acceleration coefficient of 3.6g and vertical acceleration coefficient of 2.5g, in accordance with NZS 1170.5:2004 and NZS 4219:2009. For full details of the testing undertaken, refer to Holmes Solutions report '148788.00 RP 0325 (V2.0) – Systemair New Zealand Ltd Shake-table Seismic Testing Geniox 12 Outdoor Air Handling Unit' dated 12 March 2025.

Testing was conducted in three separate principal directions in accordance with the test method as outlined in ICC-ES AC156, using the two uniaxial seismic shake-tables at Holmes Solutions Structural Test Facility in Hornby, Christchurch. Following shaking in each axis, the unit under test underwent functional testing, performed by Systemair New Zealand Ltd and witnessed by Holmes Solutions. We understand that the unit was deemed to have maintained operational integrity.

For further information, please contact Systemair New Zealand Ltd.

Regards,



Hayden Wright
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