

24th July 2019

Forum
Level 2, The Woolstore
258 Thorndon Quay
Wellington, 6011

Seismic Performance of Forum pods

Collab Engineers Ltd have been engaged by Forum to assess the expected seismic performance of the Forum pods.

The Forum pods consist of a lightweight aluminium frame, connected at the corners with mild steel brackets. The frames are infilled with either glazing or timber panels. The pods are non-structural and are fully self-supporting for seismic loads. NZS 4104:1994 states that for squat item that will slide before overturning *“provided the strength of connections between the various components of furniture are adequate for the design forces, positive fixings to the floor are not required”*, so no connection will be made between the pods and the floors on which they are supported.

NZS 1170.5:2004 – Structural Design Actions: Part 5 – Earthquake Actions – New Zealand is used to calculate the design seismic loads for structures and parts of structures. Section 8 specifically deals with the requirements for parts and components. While the accelerations obtained using Part 8 tend to be conservative, the lack of connection between the Forum pods and the supporting structure mean that seismic loads will be limited to the coefficient of friction between the feet and floor, which would be low.

As the materials and connections used in the Forum pods are not well covered by New Zealand’s current materials codes, we have carried out a qualitative assessment of the risk to safety imposed by a standard Forum pod.

Due to the plastic feet and low seismic mass, the lateral loads that can be imposed on the Forum pods during an earthquake is low. We have been involved in the testing and development of the steel corner connectors and found that they would be expected to fail before the aluminium sections and that bending of the mild steel connector elements would allow the framing system to develop high levels of ductility.

It is the opinion of Collab Engineers Limited that the Forum pods, if constructed and used as per the standard type demonstrated to us by Forum, represent a low risk to safety during a seismic event. It is possible that the pods would move around on the floor in a seismic event, similar to a desk or other furniture item, and should be positioned so that they cannot block exits or restrict escape following a seismic event.

Collab Engineers



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