BC BUILDING CODE INTERPRETATION COMMITTEE

A joint committee with members representing

AIBC, EGBC, BOABC

File No: 18-0092 **INTERPRETATION**

Interpretation Date:	March 16, 2021
Building Code Edition:	BC Building Code 2018
Subject:	Power Actuated Fasteners and Drop-in Anchors
Keywords:	Power actuated fasteners, drop-in anchors, tension loads
Building Code Reference(s):	4.1.8.18.(7)(d), Table 4.1.8.18.

Question:

Can power actuated fasteners and drop-in anchors be used for connections to the structure of elements and components listed in Table 4.1.8.18. when they are subjected to very small tension loads in the range of 50N to 100N?

Interpretation:

No

Clause 4.1.8.18.(7)(d) prohibits the use of power actuated fasteners and drop-in anchors for elements and components listed in Table 4.1.8.18. when they are subject to any tension load, particularly when the tension loading is cyclical imposed by seismic response.

The only locations where power actuated fasteners and drop-in anchors can be used are as follows:

- For elements and components that are not listed in Table 4.1.8.18., and
- For fasteners and anchors that are not subjected to tension loads.

Commentary J of the Structural Commentaries (User's Guide - NBC 2015: Part 4 of Division B) states in Item 237 for Sentence 4.1.8.18.(7) Clause (d) the following:

> **Clause (d):** Shallow drop-in-type anchors described in ACI 355.2 and power-actuated fasteners, such as nails and studs in concrete, must not be used to resist cyclic tension loading imposed by seismic response, as these types of connections are unable to withstand this type of loading. Post-installed anchors are to be used for this application; they should be qualified for earthquake loading in accordance with ACI 355.2 or ACI 355.4, "Qualification of Post-Installed Adhesive Anchors in Concrete and Commentary."

Refer also to previous Interpretation 12-0020.

Patrick Shek, P.Eng., CP, FEC, Committee Chair

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