

May 4, 2010

SUPPLEMENTARY INSTRUCTIONS

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August 22, 2008

Board of Directors
1350 Ala Moana AOA
1350 Ala Moana
Honolulu, Hawaii 96813

PROJECT: 1350 Ala Moana

SUBJECT: Installation of Tile or Carpet on the lanai's

Dear Board Members:

The purpose of this letter is to provide our opinion regarding the type of materials that can be applied to the lanais at 1350 Ala Moana. The top floor is referred to as the Penthouse. The floor directly below the penthouse is the Lanai level. The floors below the Lanai level are the typical residential floors 4 through 31. The type of construction of the lanais is the same at the Penthouse level and floors 4 through 31 (SYSTEM 2). The Lanai level is the only lanai that has a topping slab with a waterproofing membrane (SYSTEM 1).

SYSTEM 1-Ceramic Tile Installations (Lanai Level)

The penthouse lanais starting from the top is composed of a concrete topping slab (the part you walk on), waterproofing membrane and the concrete structural floor system. The typical design live load range at the time of the original construction was 40-60 pounds per square foot. Any additional load should **not exceed** approximately 10% of the design load or **4-6 pounds per square foot**. A typical tile and grout bed system will exceed 6 pounds per square foot and therefore should not be approved to be installed.

A ceramic tile thin set tile method could be installed as long as the load does not exceed the 4-6 pounds per square foot loading.

SYSTEM 1- Carpet Installations (Lanai Level)

We have experienced failures in concrete lanais in previous projects as a result of carpet being installed directly over concrete. Carpeting tends to keep the concrete wet which results in accelerated corrosion of the reinforcing and spalling of the concrete. Carpet can be installed if a waterproofing membrane is installed first and then the carpet is installed over the membrane. However, the lanais have a waterproofing membrane installed below the concrete topping slab and installing a waterproofing membrane, in this instance, is not recommended as the existing water trapped in the concrete topping slab between two moisture barriers will not allow moisture vapor to vent which can cause the various types of failures in the system.

SYSTEM 2-Typical Lanai Ceramic Tile Installation (Penthouse and Floors 4 through 31)

The drawings indicate that the typical lanai does not have a concrete topping slab or a waterproofing membrane. Therefore, a ceramic tile thin set system less than 4-6 pounds per square foot could be installed on this type lanai.

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SYSTEM 2-Typical Lanais Carpet Installations (Penthouse and Floors 4 through 31

Carpet can be installed over the typical lanai as long as a waterproofing membrane is installed to prevent trapping moisture in the concrete floor system. It should be noted that obtaining a

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warranty for a waterproofing system in which carpet is to be installed over the top of the membrane will be difficult to obtain.

I hope this is clear as to what materials can be installed on the lanais and under what conditions the material can be installed. Should you have any questions regarding the loadings or materials that can be installed, please contact me.

Sincerely,

ARCHITECTURAL DIAGNOSTICS LTD.

Dennis Wasson, AIA
Architect

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