

## **PETITION FOR BINDING INTERPRETATION**

**County:** Palm Beach

**Jurisdiction:** West Palm Beach

**Building Code Version:** Florida Building Code 2001, Building

**Chapter & Topic:** Chapter 7 Fire Resistant Materials and Construction

**Section:** 704.1 Occupancy separation requirements

**Date of permit application:** 12/07/04

**Permit No.:** 04120353

**Address of Job:** 717 S. Olive Avenue, West Palm Beach, FL

**Description:** New 20-story, 467 unit residential condominium building

**Owner:** Kolter City Plaza II, Inc.

**Contractor:** Kast Construction Company

### **INTRODUCTION**

The project is to construct a new 20-story, 467 unit residential condominium building with parking and condo units on each of the lower 4 floors. The partition between the automobile parking garage and residential occupancies is an 8 inch thick concrete block masonry wall. That wall is built full height between the 8.25 inch thick post-tensioned concrete slabs of the parking garage. Section 704.1 of Florida Building Code 2001, Building, requires a 1 hour fire-resistance rated partition between the automobile parking garage and residential occupancies. The subject wall is intended to meet that requirement.

The contractor proposes to construct the 8 inch thick concrete block masonry wall from the slab below up to the slab soffit above. The proposal is for the top joint of the wall at the slab soffit above to be pointed with cement mortar. The Building Official has rejected that proposal.

### **RELEVANT CODE SECTIONS**

Section 704.1 of Florida Building Code 2001, Building, requires a 1 hour fire-resistance rated partition between the automobile parking garage and residential occupancies.

Section 1604.5 of Florida Building Code 2001, Building, requires that interior wall and permanent partitions shall be designed to resist all loads to which they are subjected.

Section 2101.1 of Florida Building Code 2001, Building, requires that drawings and details that are submitted for the use of masonry must show provision for dimensional changes resulting from elastic deformation, creep, shrinkage, temperature and moisture.

## **BUILDING OFFICIAL'S REPORT**

Section 704.1 of Florida Building Code 2001, Building - The mortar-pointed top joint detail cannot be considered as maintaining the required 1 hour fire-resistance rating, unless a test report or listing from a Nationally Recognized Testing Laboratory (NRTL) is submitted.

Section 1604.5 of Florida Building Code 2001, Building - The use of a non-flexible pointed mortar joint, between the concrete block masonry wall and the post-tensioned concrete slab above, will allow the wall to be subjected to loads for which it is not designed when the parking garage slab deflects under load from moving vehicles above. This can result in damage to the mortar pointed in at the top of the wall, compromising its fire-resistance rating.

Section 2101.1 of Florida Building Code 2001, Building - The use of a non-flexible pointed mortar joint does not provide for dimensional changes, between the concrete block masonry wall and the post-tensioned concrete slab above, resulting from elastic deformation, creep, shrinkage, temperature and moisture. The resultant cracking and spalling of the mortar, at the wall top joint under the slab, will compromise the fire-resistance rating of the wall.

The Architect and Engineer of Record contend that the 8.25 inch thick post-tensioned concrete slabs of the parking garage are design for zero deflection. This claim has not been substantiated by submittal of structural load-deflection calculations, as requested by the Building Official.

The building owner appealed to the local Construction Board of Adjustment and Appeals (CBAA). (See attached digital minutes of the meeting) The CBAA granted the appeal based on the applicant's presentation that if the mortar can be used in a fire rated wall for head and bed joints, then it should be permitted for the pointing to fill the gap between the top of the block wall and the slab above. The Building Official's concern is that the head and bed joints are under compression and the pointing of the top of the wall is specifically a gap fill subject to elastic deformation, creep, shrinkage, temperature and moisture. The resultant cracking and spalling of the mortar will compromise the fire-resistance rating of the wall.

It also needs to be noted that the 8.25 inch thick post-tensioned concrete slabs of the parking garage were constructed in place prior to the installation of the 8 inch thick concrete block masonry wall, thus creating the gap in question.

## **QUESTION**

Is it the intent of Section 704.1, Section 1604.5, and Section 2101.1 of Florida Building Code 2001, Building, that the top joint of the wall, where it meets the soffit of the slab above, shall incorporate a flexible joint detail that has been shown to provide a 1 hour fire-resistance rating through test report or listing from a Nationally Recognized Testing Laboratory (NRTL)?

Prepared and Respectfully Submitted by:

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Construction Services Director/Building Official